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Vulnerable Patient Outreach Program (VPOP): Meaningful Roles and Reinforcement of Empathy for Medical Students during COVID-19

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Abstract

Introduction: The COVID-19 pandemic significantly disrupted many traditional models of patient care delivery. To help meet patient needs, the Pennsylvania State University Department of Family and Community Medicine initiated a medical student-run Vulnerable Patient Outreach Program (VPOP) to address healthcare needs for high-risk patients during the early stages of the pandemic.

Methods: Two Senior Medical Student Officers (SMROs) were identified as team leaders. The SRMO invited student colleagues (N=36) and local primary care physicians (N=11) to participate. Physicians were asked to identify patients on their panel at risk of morbidity/mortality due to SARS-2 CoV infection. Patients were most frequently identified as vulnerable when they were over the age of 65 and/or had multiple medical comorbidities. Medical student volunteers interviewed patients by phone from April to June 2020 to connect patients with community resources and necessary medical care. Participating patients were later contacted to ask their impressions of the program and to offer suggestions for improvement. Medical students were given a Medical Student Empathy Survey (MSES) and Medical Student Feedback Survey (MSFS) to better understand characteristics of participating students and to solicit opportunities for improvement.

Results: After the initial invitation to participate, a total of 16 medical students (44%) and 64 of 125 patients (51%) who were identified as being at high-risk enrolled in the VPOP. Thirty-four patients (38%) completed the VPOP patient satisfaction exit surveys. Eleven of the 16 medical students (69%) completed the MSFS and 14 medical students (88%) completed the MSES. Overall, 94% of patients stated that they were satisfied with the program, 74% said they would be interested in participating again, 92% of participating students exhibited strong empathy scores on the MSES, and 82% provided positive feedback about their participation in the program.

Conclusions: Both medical students and patients had positive experiences with the VPOP. These reactions suggest that outreach programs like this one are an effective way to not only connect vulnerable patients with needed care, but to connect medical students with patients in a value-added role. These findings also suggest that, as a longitudinal experience beyond COVID-19, medical students may benefit from ongoing participation in vulnerable patient outreach programs.

Introduction:

COVID-19 and Vulnerable Patients

The coronavirus-19 (COVID-19) pandemic has had a devastating impact across the globe. To date there have been more than 600 000 COVID-19 related deaths in the United States alone.¹ To mitigate

the community spread of COVID-19, guidelines of mask use in public and physical distancing between people² help limit the spread of COVID-19.³

Early in the pandemic, physician offices scrambled to alter clinical operations to mitigate the spread of the

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virus while maintaining appropriate access to in-person care. As a result there was a 60% reduction in outpatient visits to ambulatory care centers in April 2020.⁴ Patients also appear to have delayed or avoided medical care altogether.^{5,6} This reduction in visits may have contributed to an increase in all-cause mortality observed around the world during the pandemic.⁷

COVID-19, Empathy, and Medical Student Clerkship Year Education

Unlike previous national emergencies, COVID-19 significantly decreased medical student interactions with patients. This had a particular impact on medical students completing their clerkship year. On March 17, 2020, the Association of American Medical Colleges provided guidelines suggesting that schools pause clinical rotations for medical students.⁸ With this pause in clinical rotations, students transitioned to online learning and remote participation in clinical activities.⁸

In a normal year, medical students report high levels of stress, burnout, and poor mental health.⁹ However, during COVID-19 there was a marked increase in medical student stress and feelings of detachment from their communities. A total of 73% of medical students reported higher levels of stress during the pandemic.¹⁰ Students also decreased the amount of time they spent studying.¹¹ The transition to remote learning and additional stressors caused by COVID-19 unquestionably impacted (most likely adversely) students' educational experiences.

Previous studies show that medical student empathy significantly decreases during medical school, particularly in the clinical years.¹² Medical student empathy is inversely correlated with burnout and mental health.¹³ The correlation between high stress and decreased empathy in medical student and the increase in medical student reported stress during the COVID-19 pandemic represents yet another reason for concern. With this background in mind, we sought to actively engage students in value-added roles that would help keep them engaged clinically while providing meaningful care to patients in need. As such, student run clinics (SRCs) are protective in helping medical students to stay connected to their sense of purpose and overall wellbeing.¹⁴ In an effort

to support medical student empathy and provide a sense of purpose and community, the Vulnerable Patient Outreach Program (VPOP) was created as a remote SRC. The VPOP sought to build 2 bridges: one between patients and medical services and another between medical students and their communities.

The Vulnerable Patient Outreach Program (VPOP)

The VPOP uses an Enlightened Self-Interest in Altruism (ESIA) approach to connecting patients and medical students. ESIA is a framework for re-aligning medicine's dedication to altruism by reframing altruism as an act of self-interest.¹⁵ For medical students feeling stressed and disconnected from their communities, patient outreach can be an act of self-interest that helps reconnect students with their community. As an act of altruism, VPOP was a volunteer program with no cost to patients.

The Penn State VPOP took inspiration from other SRCs in being student-led, operating at no cost to patients, and seeking to connect patients with medical services and community support. Like an SRC, VPOP also helped educate patients regarding self-care and when to seek higher echelons of care. The VPOP was created to honor recommended parameters of social distancing, the needs of patients, and the needs of medical students for authentic patient experiences and purposeful community interactions.

Methods:

Patient Recruitment and Follow Up

Following approval from the Institutional Review Board, physicians from the Pennsylvania State College of Medicine Department of Family and Community Medicine (FCM) and 2 medical students in their clerkship year collaborated to design and implement the VPOP program. These Senior Student Medical Officers (SSMO) were central to the design and execution of the program. The FCM clinic chief contacted providers to assess interest in participating in the program. Eleven of 15 primary care physicians in the FCM practice agreed to participate.

Each participating provider reviewed their patient panels and identified 10-15 of the most vulnerable patients. A total of 125 patients were identified as high-risk. Providers identified patients as vulnerable

based on their knowledge of their patients’ medical and social history. All identified patients were at an increased risk of a negative COVID-19 related health outcome based on either age or medical comorbidity. The decision of which patient was high-risk was based on the provider’s clinical judgment.¹⁶

Thirty-six students at the University Park Regional Campus were invited to participate in the program via email. Twelve students initially volunteered with 4 more later joining the program. The SSMO assigned each medical student 6 to 10 patients to contact by phone. The caseload for each medical student was based on student availability and their experience with prior patient care. For each phone call, students used a standard script developed by senior physicians within the practice [Table 1].

Steps	Instruction	
Introduction	<p>Introduce yourself and briefly describe the purpose of your call.</p> <p>Ex. Hello! My name is [your name], I am calling on behalf of [Provider’s Name] from Penn State Health. Do I have your permission to speak with you? (If “Yes”, continue; if “No”, thank the patient and hang up). If the patient is busy...</p>	
	<table border="1"> <tr> <td> <p>If Yes: Move to Connect</p> </td> <td> <p>If No: I understand. When would be a better time for me to call you back? Great! I will call back on [Date and Time].</p> <p>Thank you so much for your time today.</p> </td> </tr> </table>	<p>If Yes: Move to Connect</p>
<p>If Yes: Move to Connect</p>	<p>If No: I understand. When would be a better time for me to call you back? Great! I will call back on [Date and Time].</p> <p>Thank you so much for your time today.</p>	
Connect	<p>Provide a high-level description of the appointment.</p> <p>Ex. I am a [year] Medical Student at the Penn State College of Medicine. I am calling at [Provider’s Name] request to check in on you. Please tell me how you are doing. . .</p>	
Ask	<p>Social Distancing:</p> <ul style="list-style-type: none"> • Ask them if they are following social distancing • Ask how social distancing is affecting them 	
	<p>Medications:</p> <ul style="list-style-type: none"> • Ask them if they have enough of their medications • Ask them if they are having difficulty getting to their pharmacy to refill 	
	<p>Food:</p> <ul style="list-style-type: none"> • Ask them if they have enough food. • Ask them if they can go to the grocery store themselves or if they are able to have someone shop for them 	
	<p>Mental Health:</p> <ul style="list-style-type: none"> • Try to assess their mood • Ask them how they are feeling • Ask them if they are experiencing any anxiety/depression 	
Telehealth	<ul style="list-style-type: none"> • Encourage patients that a telemedicine video visit with their provider can address most of their needs. Assess if they are familiar with telehealth and explain how telemedicine video works if they are not familiar. <i>[Telehealth phone visits are an option for any patient that does not have computer/phone capability for video visits, but telemedicine video is preferred as a best practice for more complete assessment].</i> • Let the patient know that video visits during the pandemic now count as regular visits and can be coded/charged to insurance accordingly and that they will pay their usual co-pay. 	
Respond	<p>While I am unable to answer any specific medical questions, what needs do you have that you would like me to communicate to Dr. (Physician’s Name)?</p>	
Exit	<p>Thank the patient for their time.</p>	

Table 1: VPOP Student Script

This script screened for adherence to COVID-19 precaution guidelines, behavioral and physical health needs, and food security challenges. Students alerted

patients to emerging telehealth options for care. Students were encouraged to follow a standardized approach for each call using 6 detailed steps: 1) Identify self and connection to the patient’s primary care provider (PCP); 2) Express empathy regarding the challenges of the pandemic; 3) Listen actively and affirm the patient’s perspective; 4) Determine acute patient needs; 5) Document the interaction in the electronic medical record (EMR)—expedite patients with acute care needs by contacting the attending physician and nursing staff; 6) Educate patients about expanding telemedicine options for care delivery.

Another core VPOP objective was to assess patient food security status, behavioral health needs, and ability to social distance. Students also checked in with patients to ensure there were no other urgent issues. When students identified urgent issues, they immediately contacted the patient’s provider through secure EMR messaging. If a social issue such as a lack of food was identified, students helped direct patients to local resources such as a food pantry or food delivery service. In emergency situations, students directed patients to seek care immediately by calling 911. All patient/medical student encounters were documented using a templated medical student note in the EMR. The patient’s primary care physician reviewed and co-signed each medical student note. Medical student volunteers also logged de-identified patient interactions in a document file. Each patient received a numerical identifier affiliated with their attending provider. Database parameters matched those of the approved script, allowing the student to type “Yes” or “No” to ensure adherence to protocol and ease of data entry. There was also a free text field for students to add associated notes or explanations.

The VPOP initially ran from April to July 2020. Overall, 64 patients participated. In August 2020, the SSMO conducted an exit survey with all program participants. A total of 34 patients responded to the exit survey. These patients expressed continued interest in receiving phone calls from medical students at the end of the VPOP.

An 8 question exit survey was administered to assess the impact of the VPOP. This survey was completed by telephone. The results of the patient exit surveys were recorded in a de-identified spreadsheet.

Additional comments made by program participants were also logged within the same spreadsheet. Basic descriptive statistics were used for the analysis.

Medical Student Follow Up

At the conclusion of VPOP, medical student participants received an 11 question exit survey based on the Jefferson Scale of Empathy to assess the impact of the VPOP on the students.¹⁷ Fourteen of the 16 medical student participants responded. Basic descriptive statistics were used for the analysis. Alongside this, all 16 medical students received the Medical Student Feedback Exit Survey via email. A total of 11 students responded to this survey.

Results:

Patient Impact

Sixty-four of the 125 patients identified as candidates for the outreach program responded. We were not able to contact the other 61 patients, despite 3 calls from medical students. Of the 64 patients who responded to the follow up request, 34 completed the VPOP Patient Satisfaction Exit Survey. The average age of the survey participants was 75.6 ± 11.5 years.

Table 4 highlights the patient satisfaction results of our exit survey and Table 5 shows the impact statistics of the outreach program. Patients were largely satisfied with the program [Table 4]. Patients responded most positively to the questions: "listening and communication skills of the medical student were professional and efficient", "while speaking with the medical student, I feel like my medical concerns were being taken seriously", and "overall, I am satisfied with the medical student organized COVID-19 outreach program". The lowest average satisfaction rating was "I would be interested in receiving phone calls from medical students in the future". Most patients indicated they were interested in participating in future outreach programs with medical students.

Survey Question Number	Mean score (Std. Dev)
(Q1) <i>Telehealth</i> : I am more willing to participate in telehealth visits with my primary care physician after communicating with a medical student who provided support and information.	4.2 (1.1)
(Q2) <i>Medical concerns/medication needs</i> : My needs during the pandemic were met in a timely fashion after speaking with a medical student.	4.6 (0.75)
(Q3) <i>Future Problem and in program</i> : If a medical problem arises in the future, I am comfortable knowing that my needs would be met promptly by my primary care physician if communicated to the medical student.	4.7 (0.63)
(Q4) <i>Professionalism</i> : The listening and communication skills of the medical student were professional and efficient.	4.8 (0.52)
(Q5) <i>Connection with student</i> : While speaking with the medical student, I feel like my medical concerns were being taken seriously.	4.8 (0.46)
(Q6) <i>Follow-Up</i> : I feel that the medical student followed-up at appropriate time intervals.	4.6 (0.81)
(Q7) <i>Overall Satisfaction</i> : Overall, I am satisfied with the medical student organized COVID-19 outreach program.	4.8 (0.55)
(Q8) <i>Future Participation in Outreach Program</i> : I would be interested in receiving phone calls from medical students in the future.	4.1 (1.3)

Table 4: Patient Satisfaction Score Averages (1 = strongly disagree; 3 = neutral; 5 = strongly agree)

Medical Student Impact

Of the 36 students invited to participate in VPOP, 16 students (44%) chose to participate. Of these, 14 completed the Medical Student Empathy Survey at the end of the program. Among the students that participated in the survey, 10 were in their clerkship year, one was in their fourth year and 3 were in their first year of medical school. Table 6 shows student empathy scores.

Survey Question	Percent of Students
Positively Worded Survey Questions	
(Q2) This program showed that my patients feel better when I understand their feelings.	93%
(Q6) During his program I tried to imagine myself in my patient's shoes when rendering care.	64%
(Q7) This program showed that my patients value my understanding of their feelings.	85%
(Q10) This program showed that empathy is a therapeutic skill, without which, successful treatment is limited.	86%
(Q11) This program showed that empathy is an important therapeutic factor in medical treatment.	92%
Negatively Worded Survey Questions	
(Q1) This program showed that my understanding of how my patients and their families feel does not impact medical decision-making.	86%
(Q3) This program showed that it is difficult to view things from my patient's perspective.	72%
(Q4) During this program, I tried not to pay attention to my patient's emotions during history taking.	93%
(Q5) This program showed that attentiveness to my patient's personal experiences does not affect treatment outcome.	93%
(Q8) This program showed that asking patients about their personal lives is not helpful when trying to understand their medical concerns.	86%
(Q9) This program showed me that emotion has no place in the treatment of medical illness.	85%

Table 6: Medical Student Empathy Scale Scores

Discussion:

Patient Impact

The results from our VPOP suggests that the program was effective in terms of patient contact, patient value, and ease of execution. Most patients who participated had a positive experience. Interestingly, 2 elements that did not rank as highly were telehealth interest and future participation in outreach programs. A potential reason for the apparent lack of interest in telehealth might relate to the average age of our participants (average: 75.6 ± 11.5 years). This is consistent with previous studies suggesting that patients over 65 are less likely to utilize telehealth.¹⁷ Lack of access to computer, telephone, or internet connection did not, however, appear factor in lack of interest in telehealth. All VPOP participants reporting having access to telehealth. Many, but not all, patients (75%), were interested in future participation in a medical student led outreach program.

There are several important limitations to this pilot program. One was irregular medical student follow-up. While students were generally consistent in reaching out to all their patients initially, there was

often a lack of follow-through in subsequent months. This made it difficult for some patients to remember previous interactions with students, and, as a result, some did not feel comfortable completing the survey. We attribute this drop-off to an increase in academic load, most notably fourth-year students, as they re-integrated into the hospital for clinical activities. Midway through the program, 3 fourth-year students and one second-year student ended their participation citing difficulty balancing responsibilities in this program with their other clinical duties in medical school.

Another limitation of this study was the inability of medical students to contact patients identified by their physicians as high-risk or vulnerable via phone. There were several reasons why this may have occurred. Patients may have been unavailable during the times they were called, patients may not have answered because they were unaware of this program's existence, or patients did not recognize the incoming phone number. It is also possible that some of the patient phone numbers were not accurately reported in the EMR. An additional limitation to consider is the lag time of 6 to 8 weeks between the end of the outreach program and the exit survey phone calls. This may also have contributed to patients not remembering details of their conversations in months prior.

Medical Student Impact

A total of 16 medical students (excluding the 2 SSMSOs) participated in VPOP. Five were first-year students, 7 were second-year students, and 4 were fourth-year students. SSMSOs obtained feedback from the medical student volunteers through the Medical Student Satisfaction Interview. The questions asked in these interviews were: "What would you sustain in this program?" and "What would you change in this program?". Common positives voiced by the medical students include the level of personal autonomy, the helpful script, and the range of topics discussed with patients. Students also mentioned that the most challenging aspect of this program was finding an optimal calling time to speak with patients. Initiating first contact was especially difficult, as all patients had not been notified by their PCP about this program. Despite this challenge, the medical students were able to contact a considerable number of patients

and identify many healthcare needs. Areas for improvement included the need for greater student-provider communication, initial provider-patient communication about the program, and identifying additional community resources for patients.

The Medical Student Empathy Exit survey results were generally positive. The results may have been different if all 36 medical students participated in this study, since it is possible that more empathic students self-selected to participate. It is important to note, however, that most student participants were in their clerkship year, the year in which the steepest drop in patient empathy scores occurs for many students. It is possible that these medical students felt the deepest need to reconnect with their communities. It is also possible that, because the SSMOs running this study and doing the recruitment came from their clerkship year, more medical students chose to participate in this study while in their clerkships.

Conclusion:

This study describes patient and student experiences with Vulnerable Patient Outreach Program during COVID-19. The goal of this program was to connect with patients, serve the community, and build and maintain empathy among medical students. We believe that this goal was achieved based on results from the patient satisfaction and medical student empathy surveys. Patients were genuinely interested in connecting with medical students on a regular basis and were comfortable relaying their health concerns to medical students via phone. This program provides an opportunity for students to serve the community and improve communication skills with patients and providers. As such, telehealth-based patient outreach activities such as the VPOP have potential to benefit patients and medical students alike.

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