



A Medical Student Postpartum Telehealth Initiative During the COVID-19 Pandemic

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Abstract

Purpose The coronavirus disease 2019 (COVID-19) pandemic has had an unprecedented impact on our health systems and delivery of care and on the disruption of medical education. It has forced hospitals to move to a telehealth model for prenatal and postpartum visits and expedite discharges for postpartum patients in order to reduce exposure. We describe our medical school and hospital system initiative to employ medical student volunteers for postpartum telehealth calls during the peak of the COVID-19 pandemic in New York City.

Description Ten medical students conducted phone interviews with postpartum patients within 72 h of discharge at three hospitals in a large NYC health system, with faculty preceptors at each site who provided daily call assignments and oversight. Students called patients to screen for risk factors for postpartum complications, including preeclampsia and postpartum depression; provide additional contraception counseling; and address newborn care and health. One week and 2 week post-discharge calls were also made for COVID-19 positive patients for ongoing symptom monitoring and counseling.

Assessment We found numerous opportunities for intervention in postpartum health via telehealth, including addressing pharmacy-related needs, patient counseling, improving pain management, and identifying patients in need of emergent re-evaluation.

Conclusion As this pandemic continues to evolve, our model demonstrates the feasibility of telehealth and medical student involvement in postpartum care and its benefits to patients, medical student learning, and alleviation of burden on obstetric staff.

Keywords COVID-19 · Postpartum care · Telehealth · Medical student education

Significance

Postpartum is a particularly important period for providers to check-in with patients and address any physical or emotional health concerns. Previous studies have trialed various modalities of delivering postpartum care, including via telehealth. This study demonstrates the feasibility of involving medical students in the care of postpartum patients using telehealth, especially during a pandemic or other public health emergency when workforce resources may be limited or strained. It also identifies benefits of a proactive approach to addressing postpartum health which may improve patient satisfaction and prevent postpartum complications.

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Purpose

Coronavirus disease 2019 (COVID-19) is a public health emergency that has had an unprecedented impact on our health systems, requiring hospitals to implement plans that minimize person-to-person contact, preserve personal protective equipment (PPE) and adjust to workforce strains. In particular, pregnant women require ongoing routine prenatal care and postpartum follow-up. To safely provide care, the American College of Obstetricians and Gynecologists (ACOG) has encouraged restructuring of peripartum care, including limiting in-person visits and moving towards telehealth interventions (ACOG, 2020).

Timely postpartum calls are particularly crucial during this pandemic, as many hospitals have adjusted protocols to minimize patients' exposure during their hospital stay, expediting discharge to as early as one day after uncomplicated vaginal births and two days after cesarean births (ACOG, 2020). These postpartum check-ins are integral to address postpartum incisions and wounds, blood pressure, infant feeding, contraception and mental health. While evidence surrounding the optimal length of stay after delivery, frequency, or sites of postpartum visits is sparse (Haran et al., 2014), ACOG recommends an in-person or phone encounter with a provider within the first three weeks postpartum and a comprehensive postpartum visit no later than 12 weeks after delivery (ACOG, 2018), while the WHO recommends at least three postpartum contacts: 48–72 h, 7–14 days and 6 weeks after delivery (WHO, 2013).

In addition to changes in peripartum services, COVID-19 has simultaneously disrupted medical student education. On March 17, 2020, the Association of American Medical Colleges recommended suspending all activities involving direct patient care (AAMC, 2020). At our medical school in New York City, the administration converted first- and second-year medical school courses to online and suspended third- and fourth- year clinical rotations. As at other institutions during the COVID pandemic (Soled et al., 2020), students mobilized response efforts to support physicians and hospital staff, creating a student-led volunteer workforce at the epicenter of the U.S. pandemic. This workforce reached out to the health system to solicit where medical student volunteers could support operations in various domains, including PPE, pharmacy, labs, administration and telehealth.

In what follows, we describe our medical school and health system's model for involving medical students in postpartum telehealth calls during this COVID pandemic. We outline opportunities for intervention, including addressing pharmacy-related needs, patient counseling, improving postpartum pain management, and identifying patients in need of emergent re-evaluation. Finally, we reflect on the sustainability of our telehealth model.

Description

On March 18, 2020, in response to the pandemic, the departments of obstetrics and gynecology at a large NYC health system began expediting discharge of patients with uncomplicated vaginal and cesarean births within 48 and 72 h of delivery, respectively. On April 1st, the department recruited third- and fourth-year medical students who had completed their OB/GYN clerkship to conduct postpartum telehealth follow-up calls in light of these expedited discharges and overburdened staff. Student participation was voluntary and sourced through the school's larger volunteer workforce. Third-year students could obtain elective credit as part of the COVID-19 workforce. This telehealth program's primary objective was to ensure continued communication between patients and their providers following discharge.

Medical students conducted phone interviews with patients within 72 h of discharge at three of the health system's hospitals with Labor and Delivery (L&D) units. These hospitals serve a diverse array of privately- and publicly-insured patients. In-depth calls made within 72 h of discharge were limited to those patients who received their care from faculty and house staff. Calls generally averaged 5 to 15 min. Groups of 3–5 students were assigned to each of the participating hospitals with faculty preceptors at each site who provided daily call assignments and oversight. The interview guide was initially developed by faculty and further revised following student feedback through an iterative process.

The postpartum interview consisted of two major sections. The first section sought to characterize the patients' symptoms in recovery, screen for risk factors for postpartum complications, including preeclampsia and postpartum depression, and provide additional contraception counseling. To screen for postpartum mood disorders, patients were asked about feelings of sadness or anhedonia, which, if positive, was followed by administration of the Edinburgh Postnatal Depression Scale. The second section of the interview addressed any challenges the patient faced in caring for the newborn and the newborn's health, including the patient's comfort with breastfeeding and pumping, the newborn's feeding and sleeping behaviors, and, if applicable, circumcision healing. For COVID-19 positive patients, we also conducted follow-up at 1 week and 2 weeks post-discharge for ongoing symptom monitoring, treatment, and education about minimizing risk of transmission to their newborn and others.

Students documented patient responses either by submitting a form to their attending via encrypted email or completing notes in the electronic medical record and routing them to their attendings. To ensure patient safety, students followed clear criteria for when to escalate patient care, via

direct encrypted email or phone call, to the attending physician: if a patient reported pain as 7/10 or greater after taking prescribed pain medication, blood pressure exceeding 140 systolic and/or 90 diastolic with associated preeclampsia symptoms, sustained heavy vaginal bleeding, and scores greater than 10 on the Edinburgh Depression Scale. Students also communicated any additional requests such as prescription refills or pharmacy changes, or other concerns they felt an attending could better address.

Attendings reviewed student notes on a daily basis, entered orders for missing prescriptions, called patients requiring additional follow-up based on student notes or direct escalation, and notified L&D if a patient was being sent back to the hospital for re-evaluation.

Assessment

The task force started making calls on April 3, 2020. Due to limitations in documentation and capturing data, we present the results of only two hospital cohorts.

The task force group made a total of 332 calls to 265 postpartum patients. 18.1% of patients were tested COVID-19 positive prior to or at the time of admission. 90 out of 265 initial follow up calls led to escalation to the attending: 47 pharmacy-related patient needs, 20 for postpartum pain management, five for suspected postpartum preeclampsia, five for postpartum depression, 18 for other medical issues (e.g., postpartum bleeding, referral to specialists, swelling, UTI symptoms) and 6 for other non-medical issues (e.g., scheduling follow-up, birth certificates).

Addressing Pharmacy-Related Needs

Studies have shown the benefit of telephone follow-up calls after patient discharge in understanding medication regimens and obtaining appropriate prescriptions from the pharmacy (Kripalani et al., 2008). During this initiative, 47 out of 265 post-discharge follow-up calls identified pharmacy-related needs. Most commonly, patients reported prescriptions were sent to a pharmacy other than their preferred pharmacy or that they were never prescribed the appropriate medication (e.g., heparin, contraception), or requested additional prescriptions for over-the-counter medications including vitamins, iron supplements, and stool softeners.

We found the COVID-19 pandemic placed an additional strain on our patients' ability to procure necessary medications in the postpartum period, especially as patients had to self-quarantine in different locations from their home and therefore usual pharmacy. In addition, several patients reported their pharmacy had shortages of certain medications (e.g., vitamin D, ferrous sulfate) and requested another prescription be sent to a second pharmacy. Patients also

expressed reluctance to venture out of their homes during the pandemic. Students were able to offer the option of pharmacy delivery services, as some Manhattan pharmacies offered same-day free delivery. Many patients found this option appealing, as it was convenient and limited their exposure.

Opportunities to Provide Counseling to Patients

During the postpartum period, women may feel unprepared for the physical and emotional symptoms they encounter and experience a disconnect from providers (Martin et al., 2014). Postpartum telehealth check-ins can help women better manage their health by addressing concerns such as urinary incontinence, breastfeeding, contraception, hemorrhoids, mood changes and anxiety (Hoppe et al., 2019; Osman et al., 2010). In turn, these efforts improve satisfaction with care and increase attendance at in-person postpartum visits (Henderson et al., 2016). Previous research has demonstrated the potential benefits of telehealth for decreasing depressive symptomatology, increasing breastfeeding duration, and preventing smoking relapse in the postpartum period (Lavender et al., 2013). Implementing telehealth additionally alleviates the burden of clinic visits in the perinatal period as women balance self-care, childcare and work, and may provide support during this current period of self-isolation and social distancing (Butler Tobah et al., 2019; Jago et al., 2020).

We found our calls helped fill gaps in knowledge regarding postpartum care and reinforced appropriate follow-up precautions. Students provided basic patient education on common postpartum issues, reinforced general postpartum care, and addressed individual patient concerns. We found most women had good contraception education prior to discharge. Issues most often addressed included breast pain, cracked nipples, abnormal bleeding, uterine involution and pain, and continued use of prenatal vitamins during breastfeeding. In cases of persistent breastfeeding issues, we provided patients with referrals to lactation consultants. Through the pediatric screening questions, we were also able to reinforce “back to sleep” precautions for infants and encouraged scheduling of pediatric follow-up appointments.

Improving Postpartum Pain Management

Many women report pain after birth from perineal trauma, breast engorgement, and/or cesarean incisions. Lack of effective pain management may interfere with a woman's postpartum recovery and the ability to care for herself and her newborn (Eshkevari et al., 2013). During our postpartum calls, a common reason for escalation to an attending was pain. Some women inquired about what constituted a “normal” or expected level of pain after delivery. If patients reported pain below 7/10 after taking medications, they

were encouraged to call the clinic for further follow up if the pain became severe or refractory to pain medications. If patients reported pain higher at or above 7/10, the overseeing attending physician was informed and directly contacted the patient to determine the best management plan, including a different at-home regimen or referral to emergency services. Students subsequently conducted a quick check-in the following day to assess changes in pain control.

These calls also facilitated patient education regarding pain management, particularly given evidence that using nonopioid analgesics is associated with decreased pain in the weeks following cesarean delivery compared with opioid analgesics (Dinis et al., 2020). Several patients were unaware of differences among their pain medications (hydromorphone vs. acetaminophen vs. ibuprofen). During one call, for example, a patient reported her pain was 2/10, and she said she was regularly taking both the “500 mg and 2 mg pills,” acetaminophen and hydromorphone respectively. She also had not had a bowel movement in a few days. During this call, the medical student explained that an opioid such as hydromorphone should be used for breakthrough pain only and was likely the cause of constipation.

Identifying Patients at Risk and Escalation to Provider/Emergency Department

Postpartum readmissions, while rare at around 1–2%, most commonly stem from hypertension, infection, or psychiatric disease. Readmissions typically occur three, five, and nine days after discharge (Clapp et al., 2016). Telehealth may help providers identify potential cases of hypertensive complications (Hoppe et al., 2019), postpartum depression (Kim et al., 2012), or cesarean surgical site infections (Mitt et al., 2005) and treat accordingly.

During our postpartum calls, students identified critical issues, including cases of worsening or newly discovered preeclampsia, infection and medication reactions, changing the course of the patient’s postpartum care after escalation to the attending. Two out of 265 patients were readmitted and four were re-evaluated in the emergency department after discharge. One patient had delivered at 28 weeks gestational age due to preeclampsia with severe features and fetal distress. The neonate passed two days later from complications of prematurity. The patient adamantly requested to go home after learning about her loss. When called the next day, she was struggling with grief and scored 19 on the Edinburgh Postnatal Depression Scale. She also reported her blood pressure, taken with a home blood pressure monitor, was 147/80, denying any headache, blurry vision, shortness of breath or chest pain. Her case was escalated to the attending out of concern for postpartum depression and potentially ongoing preeclampsia. When the attending called back later in the day, the patient’s blood pressure had increased

to 200 s/100 s and was uncontrolled by Nifedipine XL. The patient was immediately referred to the hospital L&D unit where she was readmitted and treated with IV antihypertensive medication. She was also closely followed by social work for emotional support and coping.

Another patient with a recent, uncomplicated twin pregnancy reported experiencing leg swelling during a postpartum call. Noting this patient had a history of preeclampsia in a previous pregnancy, the student notified the attending and followed-up on the patient’s symptoms the next day, where she educated the patient on warning signs for preeclampsia and thromboembolism. Later that day, the patient called L&D with worsening shortness of breath and right leg swelling. She presented to the ED, despite her concerns about COVID, where she was found to have postpartum preeclampsia with severe features and received appropriate treatment.

In each of these scenarios, the team was able to proactively identify a problem prior to the traditional 6-week postpartum visit and ensure the patient received adequate, timely treatment and counseling.

Limitations

Our medical student telehealth initiative had some limitations. Around 15–25% of women could not be reached after three attempts. In these scenarios, providers often followed up with patients directly, especially those who were COVID positive or with complications, and most were reached. In addition, we do not know if women with symptoms would have called their providers directly or had their issues resolved if we had not proactively called; moreover, we were not patients’ longitudinal providers and were unable to provide continuity of care. Still, women expressed gratitude for telephone postpartum follow-up, and prior studies have demonstrated high patient retention and satisfaction with telehealth interventions (Hauspurg et al., 2019; Hoppe et al., 2019). Finally, compelling evidence for telehealth compared to conventional models of care is lacking (DeNicola et al., 2020). Still, innovative telehealth strategies are unlikely to compromise care, and with this initiative, we were able to address basic issues and alleviate burden on the strained workforce.

Conclusion

The COVID-19 pandemic has created both new challenges and innovations in patient care and medical education. Calls by the taskforce ended officially on May 29, 2020 as hospitals resumed activities and students transitioned back into curricular obligations. However, we hope to integrate this service into daily clinical activities by transitioning these

interviews to nurse practitioners and physician assistants or to third-year medical students completing their OB/GYN clerkship. We hope this model may be used for obstetrics/gynecology education and patient care beyond the COVID-19 pandemic, in case of other public health emergencies that disrupt hospital care. Future use of this model should also examine patient satisfaction for postpartum telehealth services, impact on patient outcomes and assessment of preferred modalities of care and timing for postpartum follow-up.

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