To address changes in the health care landscape precipitated by the Covid-19 pandemic, particularly the lack of health care personnel, the ED at Inova Fairfax Hospital developed a process to evaluate and treat patients under a Provider-Only Patients (POP) protocol involving only physicians or advanced practice providers (APPs). In this article, Inova reports on the development of the POP process and the outcomes of a cohort of patients with suspected Covid-19 who were seen in the ED as POP patients between December 1, 2021, and January 15, 2022. All of the POP patients had Covid-19–related complaints, had an Emergency Severity Index (ESI) of 4 or 5 (on a scale where 1 is most urgent and 5 is least urgent), required limited nursing intervention, were discharged, and were 21–64 years of age. Any patients who exhibited signs of hemodynamic instability (e.g., hypo- or hypertensive), had non–Covid-19 complaints, had room air oxygen saturation below 96%, were pregnant, had difficulty ambulating, and/or had inadequate social support were not considered to be a POP patient and were seen in the regular queue of patients. Inova developed a designated area in the ED where patients were seen and discharged directly by the provider. Patients were first triaged by a triage nurse or physician to determine POP status. As of January 2022, Inova’s ED had seen 640 POP and 2,386 non-POP ESI 4 and 5 subjects (4.4% of the total ED census). Although the mean time from ED arrival to bed favored non-POP patients by approximately 9 minutes, the mean time from initially being seen by a provider to the discharge disposition and the mean time from discharge disposition placement to leaving the ED significantly favored POP by 48 minutes and
66 minutes, respectively. No POP patients returned within 72 hours for admission to the hospital, which supports the integrity of the POP triage and care delivery process. The authors estimate that the 640 patients who were part of the POP process saved approximately 1,892.27 nursing and 705.1 provider hours during that 46-day study period. No additional physician or APP hours were required, which suggests that POP is a safe, efficient, and effective process that can significantly reduce provider-to-disposition times and overall discharge length of stay. In addition to its value in mitigating the pandemic-related staff shortage, the POP model may also be considered to address nonpandemic-related staffing challenges.

Since the World Health Organization declared Covid-19 a global pandemic in March 2020, hospitals in the United States have experienced several waves of Covid-19. Patient volumes, evolving treatment modalities, workforce issues, and supply chain interruptions led to many hospitals being overwhelmed by these increased demands. EDs — which were under stress before the pandemic — have become a flash point between high-volume ED arrivals and gridlocked inpatient capacity as multiple waves of Covid-19 have come about. Adding to these increased demands, our ED (as with many others across the United States) experienced a shortage of health care personnel resulting from a preexisting nursing shortage, staff illness with resultant quarantine, and burnout.

To address the increased demands on the ED and to manage the fluctuations in volume, our ED implemented an innovative process to evaluate and treat patients called Provider-Only Patients (POP). These patients, upon arrival at the ED, had a quick triage completed with initial vital signs. On the basis of this initial assessment, either the triage physician (a position that is staffed daily for 10 hours) or the triage team lead, a nurse (a position that is staffed 24 hours per day) would determine whether the patient was appropriate for POP. Once designated as such, POP patients bypassed the traditional sequential pathway of care and were evaluated, treated, and discharged by either a physician or an advanced practice provider (APP) in a designated separate space near the triage area of the ED. No additional physician or APP staffing was used. The same pool of providers served both areas; the main ED providers flexed to the POP space when patients were positioned there.

We formally implemented this process in our ED in October 2021. Initially, the patients selected for POP were typical low-nurse demand patients (e.g., those who would not require an intravenous [IV] line, oxygen therapy, or similar higher-demand care, but instead those with conditions such as simple lacerations, sore throats, or simple musculoskeletal injuries that could be handled by the provider alone). In December 2021, the effects of a Covid-19 surge due to the Omicron variant caused a 12% increase in our ED volume. Many of these patients were stable and of low acuity. We shifted the POP workflow to process this influx of ED patients presenting for Covid-19-related care, and the following reports our experience with the POP process as of the time of this report.
Occasionally, a patient triaged to POP would later be redirected to the ED, but we never experienced a case in which a POP-treated patient returned within 72 hours for hospital admission.

Our ED is part of a 1,000-bed level 1 trauma center in a multiethnic, suburban setting with an adult annual census of 82,000. As noted, patients who had Covid-19 complaints, had an Emergency Severity Index (ESI) of 4 or 5 (acuity levels), required limited nursing interventions, and were 21–64 years of age were considered for the POP process. However, patients who exhibited hemodynamic instability (hypo- or hypertensive), had non-Covid-19 complaints, had a room air oxygen saturation below 96%, were pregnant, were immune compromised, had difficulty ambulating, or had inadequate social support at home were not seen under the POP process (Table 1).

The pathway and exclusion criteria were developed by the physician and nursing departmental leadership — quickly — in response to the sudden surge in the Omicron variant. Chief complaint was considered only in the sense that complaints were either Covid-19 related or non-Covid-19 related. For example, only patients with possible or confirmed COVID-19 who met inclusion criteria were treated as provider only patients. Our experience was that shortness of breath and sore throat were seen commonly in patients with minor Covid-19 illnesses, while abdominal pain might reflect the need for a more extensive workup. However, because the inclusion and exclusion criteria were constructed quickly in response to a sudden surge, they were not intended to be completely inclusive or exclusive. Our staff were encouraged to use them as guidelines and to use their best judgment regarding triage to POP. Occasionally, a patient triaged to POP would later be redirected to the ED, but we never experienced a case in which a POP-treated patient returned within 72 hours for hospital admission.

POP patients were taken to a dedicated area, with six beds/recliners, that was within a short walking distance of our triage area. This area was stocked with basic supplies and pulse oximetry kits to give to patients upon discharge. Monitors and IV supplies were prepositioned in the event patients unexpectedly decompensated. To maintain patient privacy and appropriate social distancing, each area was separated by movable partitions.

Table 1. Covid-19 Provider-Only Patient Criteria

| Inclusion Criteria | Exclusion Criteria | Care Provided |
|--------------------|--------------------|---------------|
| • 21–64 years old  | • Age >65 years    | • Ambulatory sat |
| • Mildly symptomatic (runny nose, sore throat, dry cough), SOB/chest pain (young, no risk factors) | • Pregnancy | • +/− ECG |
| • Vital signs      | • Moderate/severe symptoms | • +/− CXR |
| o O₂ saturation >95% | • Immunocompromised | • Covid-19 swab |
| o Temp <101        | • Abdominal pain    |               |
| o HR <120         |                     |               |
| o Systolic BP 100–165 |                     |               |

ECG = electrocardiogram, CXR = chest X-ray, SOB = shortness of breath, Temp = Fahrenheit temperature, HR = heart rate, BP = blood pressure, +/− = with or without. Source: The authors
Covid-19 swabs (both polymerase chain reaction and antigen rapid test) for testing were obtained by an Emergency Medical Technician (EMT)/patient care technician. The EMT/patient care technician was also responsible for obtaining an electrocardiogram, if indicated, and obtaining ambulatory pulse oximetry. Providers (physicians or APPs) had access to a note template created within the Epic electronic medical record and were trained on how to discharge their own patients. This process was vetted and approved by the hospital compliance department.

“Over the 46 days of the study, we estimate that the POP process saved approximately 1,892.27 nursing hours (640 patients × 177.4 minutes non-POP length of stay [LOS]) and 705.1 provider hours (640 patients × [177.4 minutes non-POP LOS − 111.3 minutes POP LOS]) from December 1, 2021, through January 15, 2022.”

From December 1, 2021, through January 15, 2022, we saw and safely discharged 640 POP patients (4.4% of our total ED census) while also attending to 2,386 non-POP ESI 4 and 5 patients (about 16% of the total ED census). The majority of the POP patients were female and younger than 45 years old (Table 2).

We found that although the mean time from ED arrival to bed was greater for non-POP patients by approximately 9 minutes ($P = .02$), the mean time from initially being seen by a provider to the discharge disposition and the mean time from discharge disposition placement to leaving the ED was significantly shorter for POP by 48 minutes and 66 minutes, respectively ($P < .01$). No POP patients returned within 72 hours for admission to the hospital. Also, favorably, we estimate that over the 46 days of the study, the POP process saved approximately 1,892.27 nursing hours (640 patients × 177.4 minutes non-POP length of stay [LOS]) and 705.1 provider hours (640 patients × [177.4 minutes non-POP LOS − 111.3 minutes POP LOS]) from December 1, 2021, through January 15, 2022.

Table 2. Patient Descriptors and Clinical Outcomes*

| Descriptor                  | POP                  | Non-POP              | $P$ Value |
|-----------------------------|----------------------|----------------------|-----------|
| Age (years)                 | 40.8 (39.7–41.2)     | 41.9 (41.2–42.7)     | <.01      |
| Sex (%)                     | Male: 43.6 (39.8–47.5) | Male: 47.2 (45.2–49.2) | .12       |
| Door to Bed (minutes)       | 56.3 (52.5–60.2)     | 47.7 (45.4–50.04)    | .02       |
| Bed to Provider (minutes)   | −17.1                | −1.3                 |          |
| Provider to Discharge (minutes) | 54.4 (50.2–58.6)  | 102.1 (97.3–108.3)   | <.01      |
| Discharge to Depart (minutes) | 17.7 (15.8–19.8) | 28.9 (27.5–30.3)    | <.01      |
| Total ED LOS (minutes)      | 111.3 (105.3–117.2) | 177.4 (170.8–183.9)  | <.01      |

*POP = Provider-Only Patient, LOS = length of stay. The bed to provider intervals are negative because these patients are frequently “assigned” to providers while still in the waiting room. The data are provided as No. (95% confidence interval). Source: The authors
These patients are embedded within the normal flow of the department and can be seen anywhere in the ED. We used a separate physical space based on infection control concerns and the size of our department.

We believe one explanation as to why our mean time from ED arrival to bed favored non-POP patients is the initial challenges of consistently identifying individuals in triage who could effectively and efficiently identify which patients to place in the POP treatment area. We are addressing this in several ways: (1) having a dedicated transport person to move POP patients from the waiting room to the triage area for POP designation; (2) having ancillary staff such as an EMT or licensed practical nurse staffed specifically for the POP space who would facilitate moving POP patients from the waiting room to the designated POP treatment area; and (3) providing further provider education on POP patient flow.

We believe that the use of POP is generalizable to other ED settings. These patients are embedded within the normal flow of the department and can be seen anywhere in the ED. We used a separate physical space based on infection control concerns and the size of our department. We believe POP may be appropriate for up to 50% of ESI 4 and ESI 5 patients. Since the Omicron surge, we have continued using POP with reproducible success. As of March 2022, we are scaling this process to other EDs in our health system and seeing similar success in improvement of flow. Additionally, we have found that patients who have had laboratory work and imaging carried out via triage order sets can be reassessed and downgraded on the basis of normal test results, put in the POP queue, and discharged via the POP process.

This novel process was implemented, in part, because of provider frustration at the inability to quickly discharge patients whose care was complete. In addition, providers expressed concerns regarding relatively large numbers of low-acuity patients in the waiting room who, when using our standard sequential triage process, contributed to long wait times, decreased patient safety, and increased provider stress. We did not formally measure provider acceptance of POP, but spontaneous feedback from both physicians and nurses was uniformly positive. Consequently, in the face of unprecedented volumes and decreased staffing (e.g., nurses and technicians), we found that the utility and value of being able to evaluate and discharge lower-acuity patients became apparent. Therefore, as we enter the third year of this pandemic, using novel patient care models to deliver excellent care will be a crucial part of adapting to unforeseen challenges, including workforce issues related to “the great resignation.” Being able to see patients safely and with positive outcomes — without significant nursing intervention — represents a paradigm shift in patient care.

**Tanveer Gaibi, MD**
Chairman, The Emergency Medicine Department, Inova Fairfax Hospital, Falls Church, Virginia, USA
Bahareh Aslani-Amoli, MD
Assistant Medical Director, The Emergency Medicine Department, Inova Fairfax Hospital, Falls Church, Virginia, USA

Glenn Druckenbrod, MD
Vice Chairman, The Emergency Medicine Department, Inova Fairfax Hospital, Falls Church, Virginia, USA

Brent Dibble, MD
Assistant Medical Director, The Emergency Medicine Department, Inova Fairfax Hospital, Falls Church, Virginia, USA

Hannah Grausz, MD
Director of Safety and Quality, The Emergency Medicine Department, Inova Fairfax Hospital, Falls Church, Virginia, USA

Linda Henry, PhD
Research Investigator 2, Inova Medicine Service Line, Inova Health System, Falls Church, Virginia, USA

John M. Howell, MD
Vice Chairman, The Emergency Medicine Department, Inova Fairfax Hospital, Falls Church, Virginia, USA

Disclosures: Tanveer Gaibi, Bahareh Aslani-Amoli, Glenn Druckenbrod, Brent Dibble, Hannah Grausz, Linda Henry, and John M. Howell have nothing to disclose.

References

1. World Health Organization. WHO Director-General’s Opening Remarks at the Media Briefing on Covid-19 – 11 March 2020. March 11, 2020. Accessed January 20, 2022. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—11-march-2020.

2. House Committee on Oversight and Reform. New Document Shows Inadequate Distribution of Personal Protective Equipment and Critical Medical Supplies to States. April 8, 2020. Accessed December 28, 2020. https://oversight.house.gov/news/press-releases/new-document-shows-inadequate-distribution-of-personal-protective-equipment-and-

3. National Institutes of Health. COVID-19 Treatment Guidelines. Updated March 2, 2022. Accessed March 24, 2022. https://www.covid19treatmentguidelines.nih.gov/
4. Centers for Disease Control and Prevention. COVID-19. COVID Data Tracker Weekly Review. March 18, 2022. Accessed March 24, 2022. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html.

5. Institute of Medicine. IOM report: the future of emergency care in the United States health system. Acad Emerg Med 2006;13:1081-5.

6. Anderson D, Pimentel L, Golden B, Wasil E, Hirshon JM. Drivers of ED efficiency: a statistical and cluster analysis of volume, staffing, and operations. Am J Emerg Med 2016;34:155-61.

7. Kelen GD, Wolfe R, D’Onofrio G, et al. Emergency department crowding: the canary in the health care system. NEJM Catalyst. September 28, 2021. Accessed April 25, 2022. https://catalyst.nejm.org/doi/full/10.1056/CAT.21.0217.

8. Zane R. The hardest time in the history of emergency medicine. NEJM Catal Innov Care Deliv 2022;3(2) https://catalyst.nejm.org/doi/full/10.1056/CAT.22.0009.

9. Shaparin N, Mann GE, Streiff A, et al. Adaptation and restructuring of an academic anesthesiology department during the COVID-19 pandemic in New York City: challenges and lessons learned. Best Pract Res Clin Anaesthesiol 2021;35:425-35.

10. Morse SJ. Healthcare second largest sector hit by Great Resignation. Healthcare Finance. January 5, 2022. Accessed April 25, 2022. https://www.healthcarefinancenews.com/news/healthcare-second-largest-sector-hit-great-resignation.

11. LaPointe J. “Great resignation” hits healthcare hard as physician burnout persists. Revenue Cycle Intelligence. October 26, 2021. Accessed April 25, 2022. https://revcycleintelligence.com/news/great-resignation-hits-healthcare-hard-as-physician-burnout-persists.