



KEY POINT SUMMARY

OBJECTIVES

To assess if a separate ED pathway for serving patients with a suspected or confirmed diagnosis of COVID-19 was effective in mitigating the spread of infection.

Preventing SARS-CoV-2 transmission in the emergency department by implementing a separate pathway for patients with respiratory conditions

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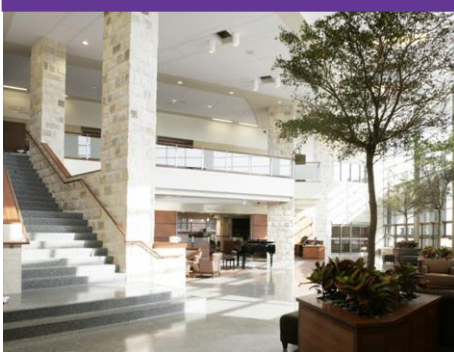
Key Concepts/Context

Since the beginning of the coronavirus disease 2019 (COVID-19) pandemic, healthcare facilities have provided services to patients with suspected or confirmed cases of this and other highly contagious respiratory illnesses. In some areas, emergency departments (EDs) have become important resources for patient populations without other ways to access medical care. Therefore, it is suggested that EDs should design and implement separate pathways to screen and treat patients with a confirmed or suspected diagnosis of COVID-19.

Methods

Data concerning all cases of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) were gathered from a university hospital's 23-bed ED over a five-month period (between March and July 2020). Facility managers designed "respiratory pathways" allowing for the standardization of processing patients and healthcare workers (HCWs) with suspected or confirmed diagnoses of COVID-19. These pathways were installed in both the ED and a designated nearby outpatient flu clinic, which helped handle overflow from the ED.

The ED was split into two zones: the clean zone and the respiratory zone. Each zone had its own designated entrance, waiting rooms, examination rooms, and treatment rooms, and also featured separate primary screening areas located immediately next to entrance doors. In these areas, nurses equipped with personal protection equipment (PPE) conducted an initial triage of all entering patients. Nurses checked patient temperatures, provided hand hygiene guidance, provided masks, and determined respiratory symptoms and COVID-19 risk factors per regional health and Centers for Disease Control and Prevention (CDC) standards. Nasal swabs



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were taken from all patients or HCWs showing symptoms, as well as those who had been in contact with an infected person.

Patients admitted to the respiratory zone waited in an area equipped with high-efficiency particulate air (HEPA) filters and socially distanced chairs. Patients who met the criteria for requiring ED treatment were taken individually through a designated pathway with a restricted entrance to the respiratory treatment area. When moving to the admission floor, patients were transported using a designated, access-controlled elevator labeled “COVID-19 elevator”. Patients who did not require ED treatment but still required isolation were taken through a different pathway to a separate quarantine building.

Findings

A total of 1,182 swabs were gathered during the study period. This number is the total from both the ED and the nearby flu clinic. 285 (24.1%) of the swabs tested positive for SARS-CoV-2. Of these 285 positive swabs, 267 were non-HCWs and 18 were HCWs. For non-HCWs, 53.2% of all swabs were conducted at the ED, while 46.8% were conducted at the flu clinic, and for HCWs, 34.5% were conducted at the ED while 65.5% were conducted at the flu clinic. This strongly indicates that the flu clinic provided a very necessary function in relieving pressure from the ED by caring for overflow visitors.

The authors also collected basic demographic information from the swab results: of the 285 positive cases, 56.8% were female and 43.2% were male.

The authors of this study claim that since the implementation of this respiratory pathway system, no additional cases of infection among patients and HCWs were reported. The pathway’s design was successful in accomplishing its goal of reducing infection without replacing or sacrificing any established ED routines. The authors suggest that these results show how all patients with respiratory symptoms could benefit from direct admission and high turnover, which ultimately minimize time spent in the ED.

Limitations

The authors note that this study features a relatively small data set, with a low number of ED visitors and HCWs involved. In addition, the authors note that the respiratory pathway design was only effective in instances where incoming patients already mentioned that they had contact with a positive COVID-19 case, or otherwise manifested symptoms as defined by health agencies. No data were collected before the implementation of the separate pathways, thus there is no metric against which to gauge the success of this study’s results.



Design Implications

Creating separate pathways at the entrance of healthcare facilities for visitors or staff suspected of having COVID-19 may help drastically reduce the spread of infection. Ideally, these separate pathways should be equipped with triage rooms, swab rooms, negative pressure rooms, and additional rooms with HEPA filters. Separate shower rooms, eating areas, and laundry services would also be ideal. Visual aids should be carefully placed to help ensure patients and staff remain in the appropriate areas.

And Also...

The authors provided a simple flowchart for easier visualization of their screening and triage process.

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