KEY FINDINGS

- Between March 2020 and June 2021, there were 46,593 COVID-19 emergency department (ED) visits. The number of visits among residents was 44,324; of these, 77.4% were among younger patients (< 65 years), 64.2% were among rural residents, 59.7% were among women, and 55.1% were among African Americans.
- Nearly one out of every four COVID-19 ED visits had a coexisting diagnosis for pneumonia. This finding demonstrates that complications were frequent among patients suffering from COVID-19.
- During the study period, total charges for COVID-19 ED visits reached $189 million. Medicaid, the publicly funded insurer of low-income patients, was responsible for $43 million or 22.7% of COVID-19-related ED charges. Self-pay patients accounted for ten percent (4,438) of all COVID-19 ED visits.

Goals and Data: This study evaluated the epidemiology of COVID-19 visits to Mississippi emergency departments (ED) during March 2020-June 2021. We also described the demographic characteristics and comorbidity profiles of patients seeking emergent health care for this infection. We analyzed ED data from all non-federal hospitals in the state. The study included all-listed COVID-19 diagnoses among state residents. To select ED visits only related to COVID-19, we excluded all encounters for injuries, poisonings, and other external causes in any diagnostic field.

Overview: There were 44,324 COVID-19 ED visits among Mississippi residents during the study period. Of these, 90.6% had a COVID-19 diagnosis in the primary diagnostic field. The rest (9.1%) of the primary diagnoses were distributed as follows: 2.8% were clinical symptoms (e.g., cough), 2.7% were diagnoses for infectious and respiratory diseases, and 3.9% were diagnoses for other illnesses caused or complicated by COVID-19.

Nearly one fifth (18.5%) of ED COVID-19 visits occurred during December—the month with the highest statewide transmission rates during the period studied (Figure 1). The average charge for a patient with a COVID diagnosis was $4,253. Patients with Medicare had the highest mean charge of $5,354. The total charges for COVID-19 ED visits amounted to $188,510,044. Over one third (37.6%) of all COVID-19 ED visits were covered by private insurance plans (Figure 2). Medicaid was responsible for almost one-fourth (24.3%) of such visits and 22.7% ($43 million) of the total charges (Figure 3). There was a high proportion (10.1%) of self-pay patients among COVID-19 ED visits.

Comorbidities: Comorbidity analyses revealed that 45.7% of ED encounters for COVID-19 had one or more coexisting morbidities as determined by the Elixhauser Comorbidity Index. Hypertension was the most prevalent chronic comorbidity—28.4% of all COVID-19-related ED encounters had a coexisting hypertension, followed by diabetes (14.2%) and chronic pulmonary disease (7.6%). These are not mutually exclusive categories.

Acute Complications: Pneumonia due to COVID-19 was the most frequent acute condition, with 17.7% (7,835) of COVID-19 ED visits having this complication. During the period studied, the overall number of ED encounters with a diagnosis for pneumonia among residents was 29,297; of these, 26.7% were associated with COVID-19. Fluid and electrolyte disorders were recorded in 10.5% (4,630) of all COVID-19-related ED visits.
Demographic Disparities: On average, patients with a COVID-19 diagnosis were older (47.4 years) compared to patients without such a diagnosis (39.3 years). Over three-quarters (77.4%) of COVID-19-related ED encounters were among patients younger than 65 years of age (Figure 4). African Americans accounted for 55.1% of all ED visits during the study period (Figure 5). This racial gap between African Americans and Caucasians started to close during the third wave, however (Figures 5 and 6). African-Americans accounted for 63.2% of all COVID-19 ED visits during July 2020 but for 51.1% of such encounters during December 2020. In terms of gender distribution, COVID-19 ED visits were more prevalent among women than men (59.7% vs. 40.3%) and this proportion remained stable throughout the study timeframe (Figures 7 and 8).

Residence Status—The Forgotten Disparity: The demographic factor associated with the greatest disparity was patients’ residence status. Nearly two-thirds (64.2%) of all COVID-related ED visits were among rural residents (Figures 9 and 10). This demographic gap between urban and rural patients widened during the third wave—the proportion of COVID-19 ED visits among rural residents was 63.8% in July 2020 but 68.5% in December 2021.

Data and Methods: To select COVID-19 cases, we used the following International Classification of Diseases (ICD-10-CM) diagnosis codes: B97.29 and B34.2 before 1 April 2020 and U07.1 from 1 April 2020 onward, as well as J1282 and M3581 from 1 January 2021 onward. We analyzed data on COVID-19 ED visits from Mississippi’s Inpatient and Outpatient Data System. This source has information on patient demographics, diagnoses, procedures, and hospital resource utilizations from all non-federal hospitals in the state. We included ED visits with these diagnostic codes in the primary and secondary data fields. To categorize comorbidities, we used the Elixhauser Comorbidity Index.1 To categorize residence status, we applied the Urban-Rural Classification Scheme for Counties developed by the National Center for Health Statistics.2

References:

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