

After Their Initial Diagnosis, Many Adult COVID-19 Patients Continue Seeking Medical Care for up to Six Months or More

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Abstract: COVID-19 related health care utilization persists in a subset of patients for 180 days or more after their initial diagnosis.

Definitions and guidance regarding the evaluation and care for patients with “Long COVID,” post-COVID conditions or PASC (post-acute sequelae of COVID-19) continues to evolve.¹ We sought to describe health care utilization over time after an initial COVID-19 diagnosis. For the purpose of this analysis, follow-up after a health care claim with a confirmed or probable COVID-19 diagnosis was divided into three timeframes including a ≤30-day acute period and 2 subsequent post-acute periods of 31-90 days and 91-180 days.^{2,3}

We analyzed claims data of a large national insurer covering adult commercial (18 to <65 years) and Medicare Advantage (≥65 years) members in 2020. To describe utilization patterns over time, we first identified a patient’s initial health care claim coded with a confirmed or probable COVID-19 diagnosis and further categorized patients by month of initial diagnosis and age group. From 20,768,078 adult members, we identified 264,849 individuals with a confirmed or probable COVID-19 diagnosis and at least one day of enrollment between March 1, 2020 and July 31, 2020.⁴ This analysis relied on an initial confirmed or probable COVID-19 diagnosis as coded on health care claims, and therefore patients and utilization may be missing (e.g., patient presents with post-COVID symptoms but never received a COVID-19 diagnosis) and medical details and actual care delivered is unknown.

Depending on age group, 3-6% of patients first diagnosed during this 5-month window had at least one COVID-19 related health care claim 91-180 days later. These results are consistent with growing evidence suggesting it may take weeks to fully recover from COVID-19, and that 10% or more of patients may continue to experience symptoms for at least 3 months and some as long as 9 months or more.⁵⁻⁸

Percentage of Patients with One or More COVID-Related Claims through 180 Days

	18–29 yo (n=42,859)	30–39 yo (n=39,671)	40–49 yo (n=39,383)	50–64 yo (n=58,990)	≥ 65 yo (n=83,946)
≤ 30 Days	19%	23%	26%	27%	26%
31–90 Days	4%	6%	8%	9%	10%
91–180 Days	3%	4%	5%	6%	6%

Percentage of Patients with One or More COVID-Related Claims Through 180 Days, 2021. Epic Health Research Network (EHRN.org)

Table 1. Percentage of patients that had at least one COVID-related claim after their initial COVID-19 diagnosis by age group and time passed between initial diagnosis and follow-up encounter.

We found that the majority of COVID-19 cases do not require hospitalization, and health care utilization, as measured by claims, is greatest in the 30 days after a COVID-19 diagnosis. Approximately 5% of all commercially insured and Medicare Advantage covered adults continue to seek some type of outpatient or inpatient care that is identified as being related to their COVID-19 diagnosis 90-180 days before. Of note,

1% (825/83,946) of Medicare Advantage members (≥65 years) experienced an inpatient stay related to COVID-19 that occurred 90-180 days after a claim identifying their initial diagnosis.

Utilizing health system data to further understand the course of the COVID-19 pandemic is foundational to improved population health management of COVID-19 moving forward.

Percentage of Patients with One or More COVID-Related Claims through 180 Days by Type of Encounter

	18–64 yo (n=180,903)				≥ 65 yo (n=83,946)			
	Inpatient Stay	Emergency Visit	Other Visit (e.g. SNF)	Physician Visit	Inpatient Stay	Emergency Visit	Other Visit (e.g. SNF)	Physician Visit
≤ 30 Days	2.0%	3.0%	3.0%	19.0%	8.3%	4.2%	11.7%	9.3%
31–90 Days	0.2%	0.5%	1.2%	5.9%	1.5%	0.6%	5.4%	4.1%
91–180 Days	0.2%	0.3%	0.7%	3.8%	1.0%	0.4%	3.2%	2.2%

"Percentage of Patients with One or More COVID-Related Claims Through 180 Days by Type of Encounter," 2021. Epic Health Research Network (EHRN.org)

Table 2. Percentage of patients that had at least one COVID-related claim after their initial COVID-19 diagnosis by type of encounter.

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Data Definitions

Term	Definition
Confirmed COVID-19 Diagnosis	An ICD-10 diagnosis code U07.1 in any position on the claim.
Probable COVID-19 Diagnosis	An ICD-10 diagnosis code U07.2 or B97.29 in any position on the claim. The probable COVID-19 diagnosis code U07.2 was proposed by the World Health Organization (WHO) but ultimately not adopted within the U.S. Of our sample of 264,859 patients with a confirmed or probable COVID-19 initial diagnosis, 207 were identified by the U07.2 code.
Initial COVID-19 Diagnosis Date	The discharge date of the initial visit/stay with a COVID-19 diagnosis.
COVID-19 Diagnosis Related Healthcare Utilization	<p>An ICD-10 diagnosis code U07.1, U07.2, or B97.29 in any position on the claim. Each follow-up time period does not include the initial visit/stay with a COVID-19 diagnosis. Patients can have a health care claim in each of the follow-up time periods (≤ 30, 31-90, and 91-180 days). Utilization that crosses time periods will only be counted in one time period (based on the start date of the visit/stay).</p> <p>The initial visit/stay is assigned hierarchical in the following order: inpatient stay, ER visit (if occurred prior to or on day 1 of SNF/other facility visit), other facility visit, and then physician visit.</p> <p>Utilization definitions based on claims:</p> <ol style="list-style-type: none"> 1. If an ER visit occurs during another facility visit, then both an ER and other facility visit are counted. ER visits are not counted if they occur during an inpatient stay. 2. Physical therapy and rehabilitation visits are counted a maximum of 1 per 30-day period. 3. Chiropractor visits are not counted towards a health care visit. 4. Any visits that were solely for the purpose of COVID-19 testing (to ensure patient no longer has COVID-19), are not counted towards a health care visit. 5. Home enteral nutrition therapy is not counted towards a health care visit.