RWD116

Navigating the Currents of the Pandemic: A Comprehensive Analysis of Medicare Data Reflecting COVID-19's Impact on CVD Healthcare Utilization

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Overview

Introduction

The COVID-19 pandemic caused significant disruptions in healthcare, particularly for Medicare beneficiaries with cardiovascular disease (CVD). This study examines changes in healthcare utilization among CVD patients during the pandemic and post-pandemic periods.

Methods

The study analyzed Medicare data from 2018 to 2023, including acute inpatient care, emergency room visits, hospital outpatient visits, and physician office consultations.

Results

- Outpatient and physician office services decreased by 4.5% during the pandemic and 9.3% post-pandemic.
- Inpatient service use decreased by 0.7% post-pandemic.
- Skilled nursing facility services decreased by 1.8% post-pandemic.

Conclusions

The pandemic led to a lasting decline in healthcare utilization among CVD patients in the Medicare population. While telehealth use increased, it didn't offset the decline in traditional services. Healthcare systems must adapt to these changes and prepare for new patient engagement patterns.

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INTRODUCTION

In the wake of the COVID-19 pandemic, healthcare systems globally faced unprecedented challenges, prompting a reevaluation of service models, particularly for chronic conditions like cardiovascular disease (CVD). This study assesses how the pandemic affected healthcare utilization patterns among Medicare beneficiaries with CVD, focusing on changes in engagement with services such as acute inpatient care, emergency services, hospital outpatient visits, and physician consultations. By analyzing the shifts in healthcare service utilization before, during, and after the pandemic's peak, the research offers insights into the systemic changes in healthcare delivery and patient care.

METHODS

The study utilized the **100% Medicare fee-for-service (FFS) research identifiable files (RIFs) from March 2018 to December 2023**, offering detailed insights into patient-level healthcare usage across inpatient care, hospital outpatient visits, skilled nursing facility, and physician consultations.

The analysis focused on healthcare utilization for individuals with cardiovascular diseases (CVD), defining utilization as the number of outpatient and inpatient CVD-related visits per 10,000 Medicare beneficiaries, adjusted monthly and yearly using sample weights. CVD status was determined using ICD-10 codes and criteria from the CMS Chronic Condition Warehouse (CCW).

In the descriptive phase of the analysis, we evaluated the shifts in average healthcare utilization rates before (March 2018-February 2020), during (March 2020-December 2021), and after the COVID-19 pandemic (January 2022 - October 2023). We analyzed these changes across different disease groups and geographical regions.

To explore healthcare utilization patterns around the COVID-19 outbreak, we modeled and produce predictive healthcare utilization using Poisson regression and we applied a scaling adjustment to address potential over-dispersion in the data.

RESULTS

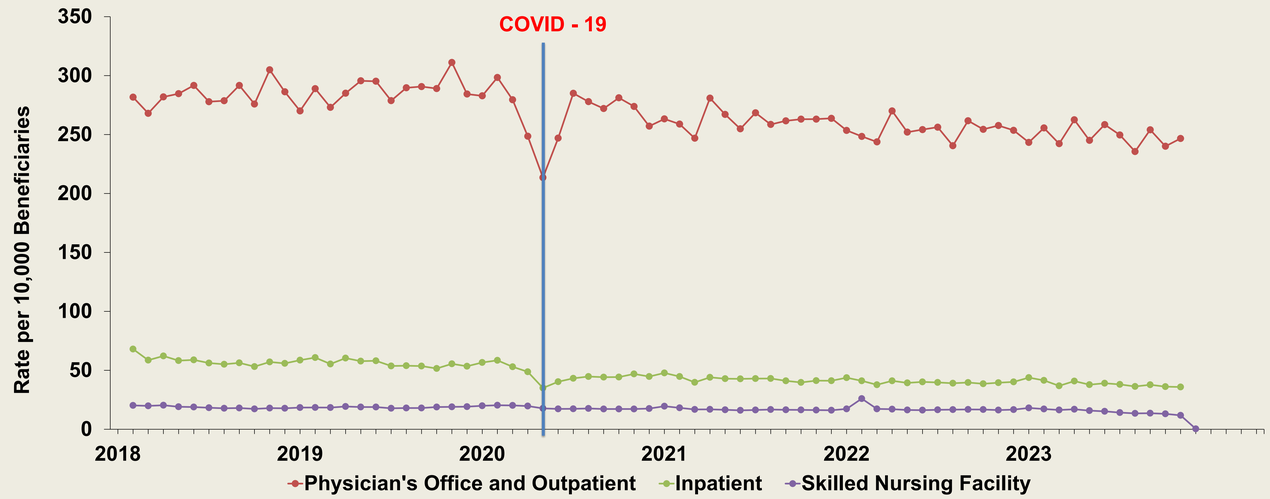
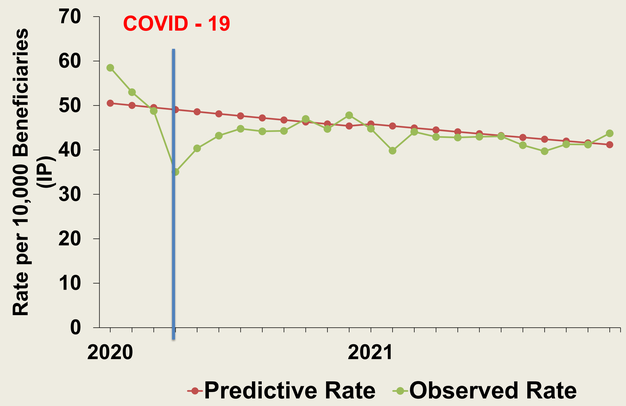


Figure 1: Observed rate of CVD related claims in OP/Physician's office setting, IP and SNF



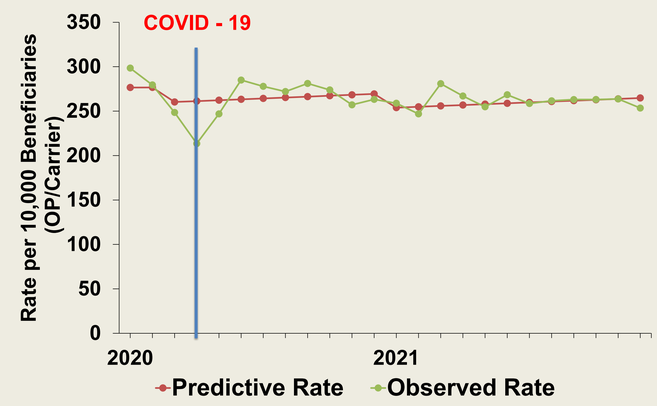


Figure 2 & 3: Observed rate and predictive rate of CVD related claims in IP (Left) and OP/Physician's office (Right) setting

An aggregation of data from 22 million CVD patients under Medicare FFS was analyzed. Our prediction shows that the expected average hospital inpatient rate would have been around 50 per 10,000 Medicare beneficiaries per month (between April – July 2020). However, during the COVID-19 period, the observed average inpatient visit rate was 32 per 10,000 beneficiaries (Fig. 2). Outpatient and physician office services showed a 4.5% decrease in visit rate per 10,000 beneficiaries during the pandemic (IRR = 0.93, 95% CI= 0.85 – 1.01). Inpatient service use saw a minor reduction post-pandemic by 0.7% (IRR = 0.73 95% CI= 0.67 - 0.78). Skilled nursing facility (SNF) services experienced a non-significant drop during the pandemic, yet post-pandemic figures showed a 1.8% decrease (IRR = 0.92 95% CI= 0.72, 0.96).

CONCLUSIONS

Pandemic-induced shifts have resulted in a discernible contraction in healthcare utilization trajectories for CVD patients in the Medicare population, persisting into the post-pandemic landscape. The findings illuminate significant reshaping of healthcare utilization patterns, with telehealth solutions witnessing a surge, yet these results are insufficient to counterbalance the decline in traditional service use. These insights highlight the impact of the COVID-19 pandemic on Medicare beneficiaries and the way in which they received care.