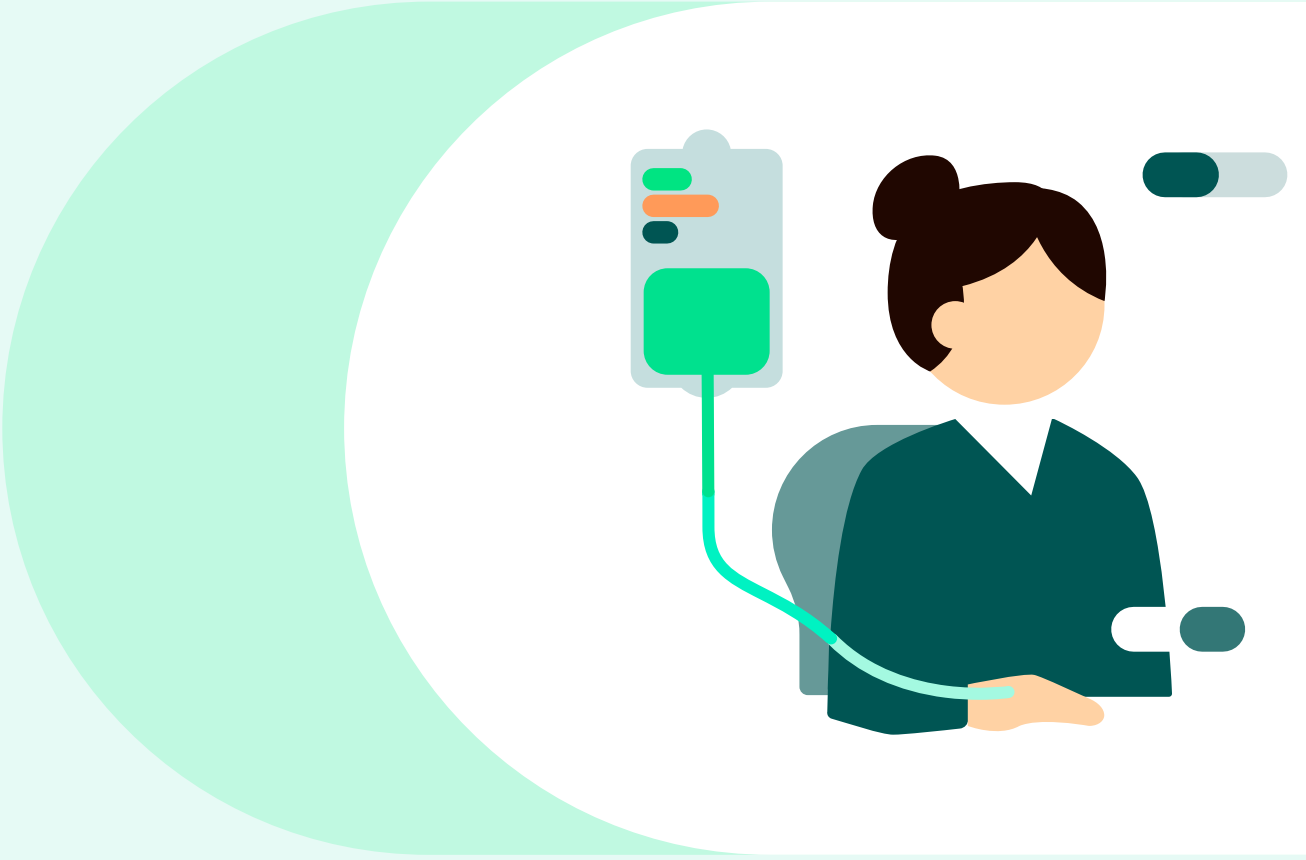
FinThrive

White Paper

FinThrive Chargemaster and Claims Data Study

Colorectal Cancer Staging at Time of Treatment Initiation



Problem Statement

Colon cancer is the second most common cause of cancer death in the United States.[1]

The 2019 Novel Coronavirus ("COVID-19") pandemic resulted in both elimination of non-emergent healthcare services and reallocation of key healthcare resources. While studies have validated and described the decrease in colorectal cancer screening and diagnosis because of the COVID-19 pandemic, the impact of missed or delayed screenings has not been as extensively explored. This is largely due to the timeliness of available data from the National Cancer Institute's (NCI's) Surveillance Epidemiology and End Results program which requires extensive medical record evaluation and data abstraction. Diagnosis codes do not provide insight into the stage of cancer other than to indicate if the disease is metastatic. However, with certain cancers, the high-level identification of stage can be determined through evaluation of treatment modalities and timing of those treatments using hospital chargemaster and medical claims data. The claim represents what is needed for reimbursement purposes while the chargemaster demonstrates allocation of drugs, biologics, devices and supplies.

In this study, FinThrive Data Insights team utilized chargemaster and claims data

from 2023 and 2024 to identify if the decline in colon cancer screening during the COVID-19 pandemic resulted in higher incidence of systemic treatments for colorectal cancer as part of initial disease treatment; thus demonstrating diagnosis at a later stage. The most comprehensive depiction of the services received during an episode of care, absent the electronic health record, is the chargemaster dataset. The chargemaster is internal to the hospital and the data from this system lists each item including supplies, drugs and biologics regardless of whether they are separately billable or reimbursement. For this reason, the patients included in this study are patients that appeared in both datasets and providers for whom chargemaster and claims data appeared throughout the study period.

Description

On March 18, 2020, the Centers for Medicare and Medicaid Services (CMS) recommended all elective and non-essential medical procedures be delayed during the COVID-19 outbreak.[2] This included screening colonoscopies. As the COVID-19 pandemic continued, individuals had to decide whether to seek medical care for symptoms of colorectal cancer or postpone care due to risk of exposure to COVID-19. It is estimated that colorectal cancer screening (CRC) decreased by 85% in the United States from March through April 2020 alone.[3]

Early detection of colorectal cancer through regular screenings, such as colonoscopies, is crucial for improving outcomes and reducing mortality.

When screenings are delayed or missed, the risk that cancer will be diagnosed at a more advanced stage increases, which also affects the prognosis and treatment options.

The timely calculation of cancer incidence rates is hampered by reporting delays to cancer registries. The National Cancer Institute's (NCI's) Surveillance Epidemiology and End Results program (SEER) allows a standard delay of 22 months between the end of the diagnosis year and the time the cancers are first reported to the NCI in November, almost two years later. While hospital chargemaster and medical claims data cannot replace the need for the intricate medical record abstraction performed by Certified Cancer Registrars utilizing SEER guidelines, this study aimed to determine if this data could provide earlier insight into high-level colon cancer stage trends.

Study Details

Using the FinThrive hospital chargemaster and medical claims datasets, the FinThrive Data Insights team identified cases of patients with a principal diagnosis of Malignant Neoplasm of Colon, ICD-10 C18.X ("Colon Cancer") during two study periods. The first study period was January 1, 2018 – December 31, 2019 ("Pre-COVID Study Period"). The second study-period was January 1, 2022 – December 31, 2024 ("Post-COVID Study Period"). The study cohort included 34,774 patients; 10,668 patients in the Pre-COVID Study Period and 24,106 patients in the Post-COVID Study Period. While peer-reviewed research has documented an increase in instances of colorectal cancer, this increase in patients between the two study-periods is not indicative of an increase in colon cancer diagnosis. Further analysis is needed to evaluate the number of providers represented in each study-period as well as geographic representation. These data elements are available in the dataset and will be part of the continued data evaluation.

After identifying patients who qualified for the study by principal diagnosis, the FinThrive Data Insights team analyzed the data to determine if the cancer stage at the time of initiation of treatment could be determined through the hospital chargemaster and medical claims data. Below are the definitions and treatment considerations utilized as part of the staging analysis.

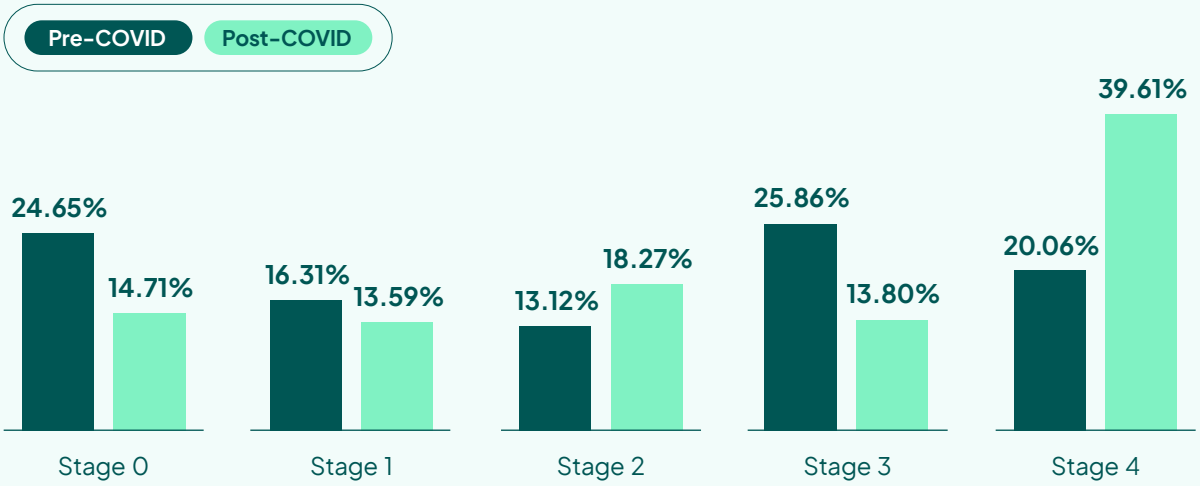
Colon Cancer Stage Defining Factors and Treatment Considerations

Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
Defining Factors				
Contained inside the inner lining of the colon	Grown deeper into the layers inside the colon wall but not the lymph nodes	Grown through the colon wall and may have invaded nearby tissue, but not the lymph nodes	Spread to nearby lymph nodes, but not to other parts of the body	Spread from the colon to distant organs and tissues
Treatment Considerations				
Surgery to remove the cancer	Surgery to remove the cancer	Surgery to remove the cancer and nearby lymph nodes	Surgery to remove the cancer and nearby lymph nodes followed by adjuvant chemotherapy	Surgery to remove the cancer and nearby lymph nodes plus surgery to remove the areas of cancer spread
Removing the polyp Local excision Partial colectomy	Removing the polyp with clean margins Follow-up surgery for partial colectomy and lymph node removal	Partial colectomy and lymph node removal Neoadjuvant therapy or adjuvant chemotherapy	Partial colectomy and lymph node removal FOLFOX or CAPEOX regime	Partial or total colectomy with diverting colostomy Chemo and/or targeted therapies Radiation

Study Findings

There was a considerable increase in Stage IV cancer (39.61% vs. 20.06%) in the Post-COVID cohort. During these same periods, Stage 0 early-stage diagnosis and treatment declined (24.65% Pre-COVID vs. 14.71% Post-COVID).

Pre and Post COVID Stage at Treatment Initiation

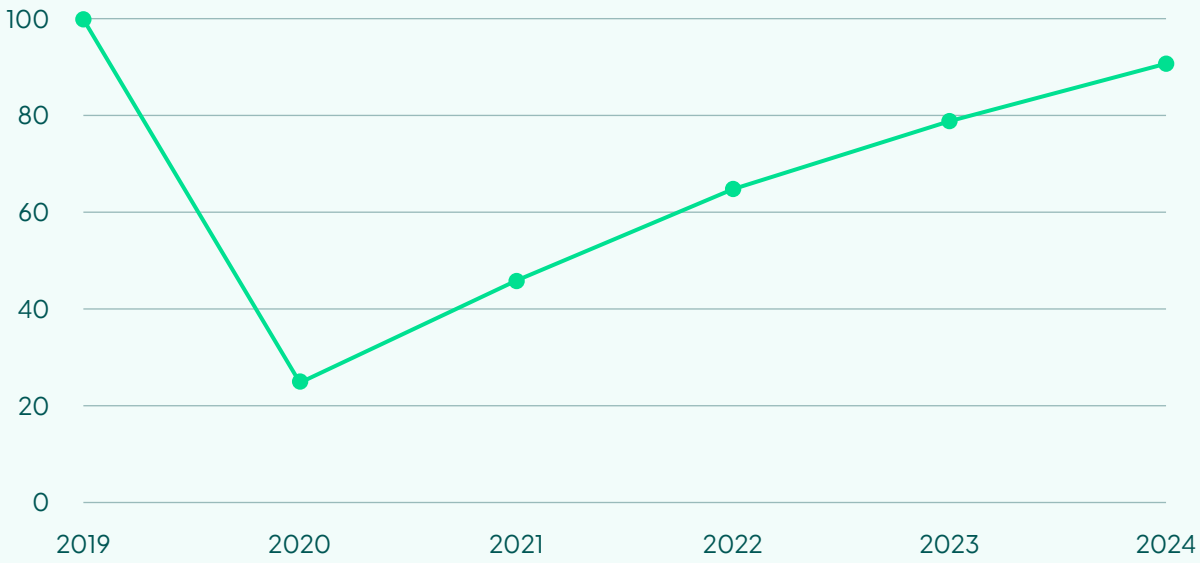


The initial findings provide a compelling reason for further investigation into the Colon Cancer data. The FinThrive data includes data elements that allow for identification of trends that can highlight significant gaps and disparities across the patient population. This deeper exploration into the data will serve to refine the hypothesis and promote additional methodologies related to patient factors including: age, gender, geographic area, state and insurance.

Lessons Learned

In the Post-COVID cohort, patients with Colon Cancer had a significantly higher prevalence of Stage IV disease at the initiation of treatment, accompanied by an increased incidence of metastatic disease. FinThrive medical claims data for the period March – May 2020 demonstrated periods with as much as a 100% decline in screening colonoscopies as healthcare staff were reallocated to address COVID-19. The marked decrease in screening colonoscopies continued through May 2021 with rates still remaining 9% on average below pre-pandemic rates in FinThrive's 2024 medical claims data.

Screening Colonoscopy Percentage Decline From Pre-Pandemic Rates



Stakeholder Perspective

The impact of COVID-19 has led to an increase in advanced-stage Colon Cancer diagnosis.

Further data investigation is necessary to identify impacting factors.

Factors to be evaluated include: delayed and missed screenings, patient delay in seeking medical treatment, unavailable healthcare resources to timely address backlog, reduced capacity in healthcare system and inability to obtain prior authorization from third-party payers.

Learn more about FinThrive's Chargemaster and Claims data and the clinical and financial questions it can answer.

Visit finthrive.com/markets/life-sciences or contact Stephen Harrop at stephen.harrop@finthrive.com.

SOURCES

1. Cotler J, Chan K, Zhu X. Colorectal cancer statistics, National Cancer Database, 2024
2. https://www.cms.gov/newsroom/press-releases/cms-releases-recommendations-adult-elective-surgeries-non-essential-medical-surgical-and-dental
3. https://pmc.ncbi.nlm.nih.gov/articles/PMC7444638/

FinThrive

© FinThrive, Inc. and its affiliates and subsidiaries (collectively, "FinThrive"). All Rights Reserved. R050125TLM