19504 Is Cancer Diagnosis in the US Timely? An Assessment of the Time to Diagnosis Among Patients Diagnosed with Cancer

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INTRODUCTION

- Prior to cancer diagnosis, patients may present to a healthcare provider with signs and symptoms that do not have a clear diagnosis pathway, which often leads to a lengthy diagnosis process, delays in treatment, poorer outcomes, and higher costs.[1-3]
- Many cancers are identified in a primary care setting, underscoring the important role these healthcare providers play in timely cancer diagnoses.[4]
- Limited real-world evidence exists for cancer diagnosis durations in the United States.

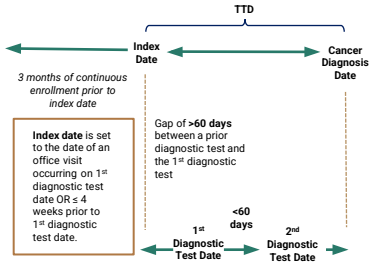
OBJECTIVES/PURPOSE

- To quantify the time to diagnosis (TTD) among patients newly diagnosed with cancer in the United States

METHODOLOGY

- A retrospective claims analysis of patients newly diagnosed with cancer in 2018-2019 was conducted using Optum's de-identified Clinformatics® Data Mart Database including Medicare Advantage and commercially insured members.
- Patients were identified using ICD-10 codes requiring ≥2 outpatient visits ≥30 days apart or 1 inpatient visit without prior cancer claims.
- The first diagnostic test was identified by searching for diagnostic tests prior to the cancer diagnosis until a gap of >60 days was observed (Figure 1).
- The index date was defined as the first diagnostic test date or the office visit date <4 weeks prior to the first diagnostic test.
- The TTD (time from index to cancer diagnosis date) was summarized descriptively for all patients and by tumor type.

Figure 1. Study Design



RESULTS

- A total of 458,818 patients from 20 different cancer types were identified (mean age of 71 years, mean Charlson comorbidity index of 2.1, and 50% male) (Fig. 2; Table 1).
- Breast (26%), prostate (19%), lung (13%), bladder, including urothelial (9%), and kidney (8%) cancers were the most prevalent.

Figure 2. Study Attrition Flow Diagram

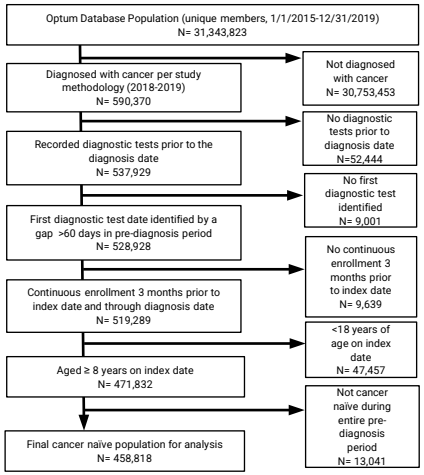


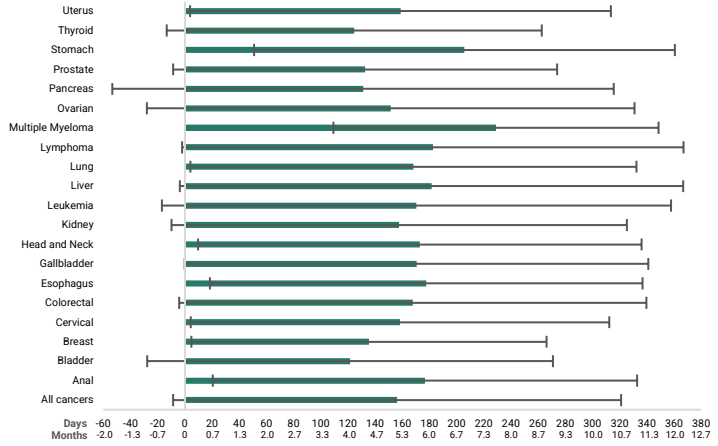
Table 1. Patient Characteristics, 3 Months Prior to 1st Diagnostic Test

Characteristics	All Cancers[a] N= 458,818
Age, years	
mean (SD)	70.6 (1.1)
Sex, %	
Males	50.4%
Females	49.6%
Race, %	
White	65.0%
Black	11.1%
Hispanic	8.3%
Asian	2.5%
Missing	13.2%
Primary Insurance, %	
Medicare Advantage	74.0%
Commercial	24.0%
Both	2.0%
Charlson Comorbidity Index (CCI)[d]	
mean (SD)	2.1 (1.4)

[a]All cancers" includes 20 cancer types; CCI, Charlson Comorbidity Index

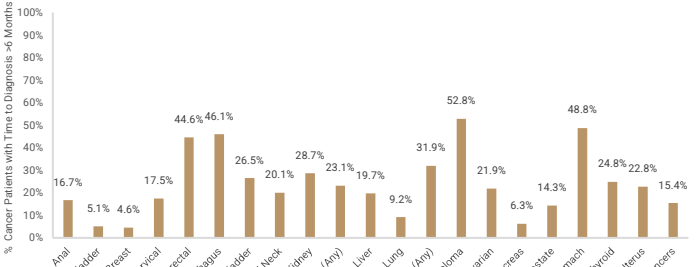
- Mean (SD) TTD was 156.2 (164.9) days or 5.2 (5.5) months and median TTD was 118.0 days or 3.9 months (assuming 30 days=1 month) and varied across cancer types and among patients with the same cancer type (Fig. 3)
- 15.4% of patients had a TTD of >180 days or 6 months (Fig. 4).
- Kidney (28.7%), colorectal (44.6%), gallbladder (26.5%), esophagus (46.1%), lymphoma (31.9%), stomach (48.8%), and multiple myeloma (52.8%) cancers had more than one quarter of patients with more than 6 months of TTD.

Figure 3. Mean Time to Diagnosis



"All cancers" includes 20 cancer types; Bladder includes urothelial; Lung includes bronchus; Month=30 days; SD in days shown in error bars

Figure 4. Percent of Cancer Patients with Time to Diagnosis >180 Days or 6 Months



"All cancers" includes 20 cancer types; Bladder includes urothelial; Lung includes bronchus

CONCLUSIONS

- A notable proportion of patients newly diagnosed with cancer experienced a lengthy diagnosis process of > 6 months, highlighting the inefficiency of cancer diagnosis in the United States.
- Large heterogeneity exists across cancer types and across different patients within the same cancer type.
- Policy changes, guidelines, and medical interventions that streamline cancer diagnosis pathways are needed to optimize patient outcomes.

Authors Role in Project

All authors supported study design, analysis, and interpretation

References

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Disclosures

This study was funded by GRAIL, LLC, a subsidiary of Illumina Inc. *GRAIL, LLC is currently held separate from Illumina Inc. under the terms of the Interim Measures Order of the European Commission dated 20 October 2021. ZC is an employee of GRAIL, LLC, with equity in the company. MG and NM, are employees and NS was an employee at the time of the study completion of BluePath Solutions. BluePath Solutions received funding to conduct analyses for this study.

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