

BACKGROUND

- U.S. Cancer screening estimates rely on surveys, which are costly and limited in sample size and geographic area
- Lack of local data creates a gap that hampers identifying disparities and planning targeted interventions
- Multi-payer health insurance claims could help fill gap by providing inexpensive, small area screening information

Objective: To describe the development of a multi-payer dataset linking 12 million individuals in North Carolina observed between 2003-2020

- We used up-to-date (UTD) on screening for colorectal cancer (CRC) following the 2016 USPSTF guidelines as an illustrative example of the data's utility

DATA METHODS

- Data were obtained from the UNC Cancer Information and Population Health Resource (CIPHR) which includes public and private health insurance claims
- **MULTI-PAYER COHORT**
- Aggregated, and de-duplicated uniquely identified individuals across payer sources including:
 - Medicare (fee-for-service and Advantage)
 - Medicaid
 - Private insurers
- Individuals were uniquely identified through SSN, DOB, and Sex across payers
- Individuals could be followed over time as they transitioned from one insurance provider to another
- Location of residence used to identify small areas defined as the intersection of county FIPS and ZIP Code Tabulation Area (ZCTA)
- We linked to the NC Central Cancer Registry to identify and remove individuals once diagnosed with CRC
- **CRC SCREENING**
- At risk individuals were those between the ages of 50-74 and had 10 years of continuous insurance enrollment to assess screening via:
 - Colonoscopies
 - Flexible Sigmoidoscopy
 - CT Colonography
 - FIT DNA
 - FOBT/FIT testing

Figure 1. Generalized Flow diagram for the identification of unique individuals over time in CIPHRs multi-payer data

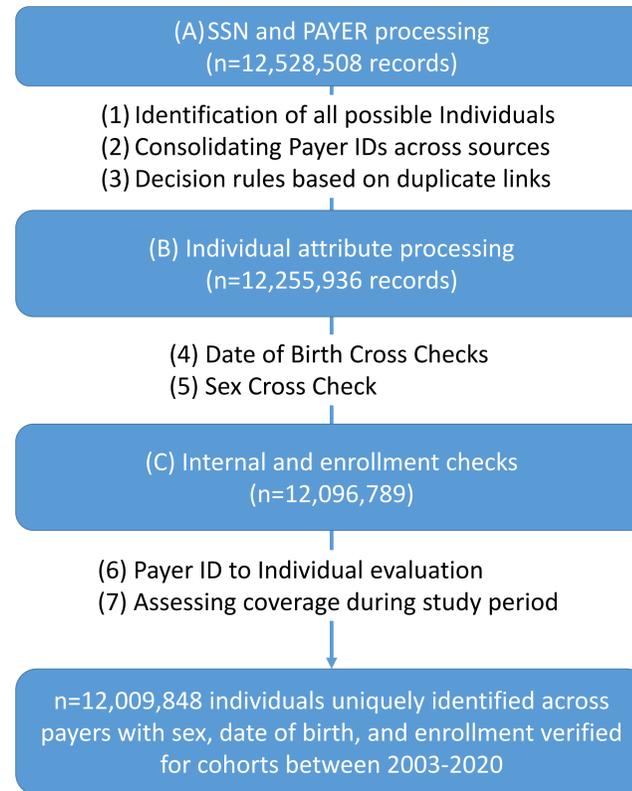


Table 1. Characteristics of the linked multi-payer cohort

Characteristic	N=12,009,848
Person years of enrolled follow-up	74,779,932 person years
Median duration of follow-up	64 months (IQR: 22, 132)
Percentage of cohort with ≥1Yr of continuous enrollment	82.33%
Percentage of cohort with ≥2Yrs of continuous enrollment	68.61%
Percentage of cohort with ≥5Yrs of continuous enrollment	41.68%
Percentage of cohort with ≥10Yrs of continuous enrollment	16.30%
Percentage that linked to ≥2 payers at some point between 2003 and 2020	24.57%

RESULTS

Figure 2. Lookback assessment used for Colorectal Cancer Screening

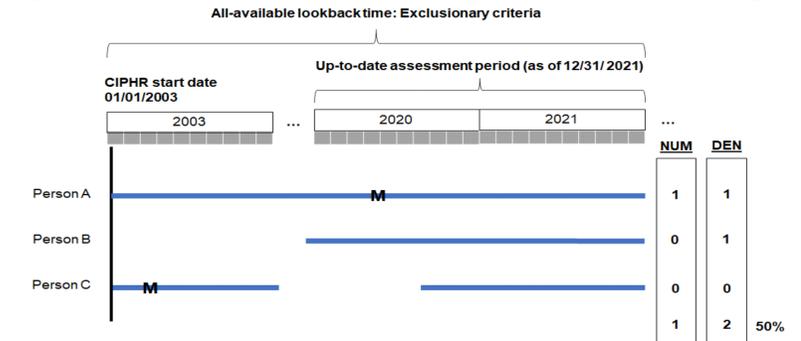
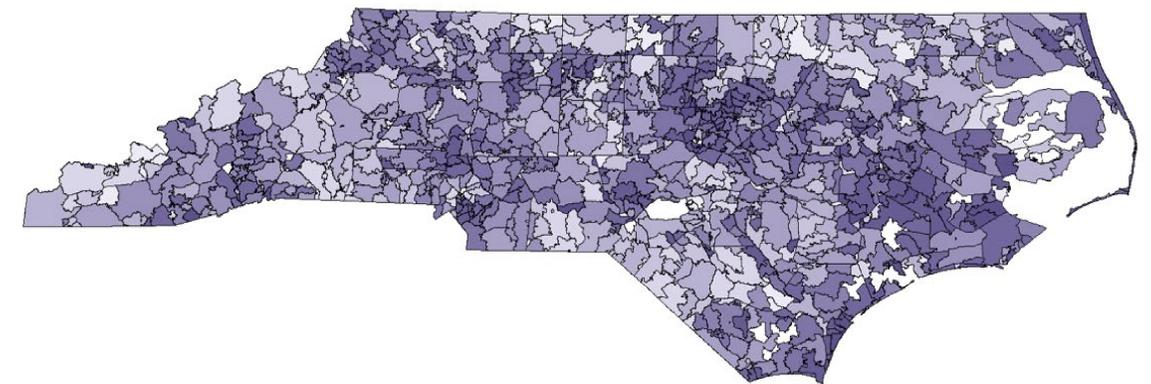


Table 2. Characteristics of the 2020 Colorectal Cancer Screening Cohort

Characteristic		N=330,454	%
Sex	Female	180,752	54.7
	Male	149,702	45.3
Age as of 12/01/2020	Median, IQR	63	58, 70
Payer at Index	Medicaid Only	27,814	8.42
	Medicare only	118,749	35.94
	Medicaid/Medicare	77,763	23.53
	Private Only	105,128	32.12
Up-To-Date by any modality		265,361	80.3
Colonoscopy (within past 10 years)		259,040	78.39
Flex Sig (within past 10 years)		6,056	1.83
Colonography (within past 5 years)		452	0.14
FITDNA (past 3 years)		12,975	3.93
FOBT or FIT (within past year)		18,109	5.48

Figure 3. Choropleth map of percent up-to-date for Colorectal cancer screening (2020)



CONCLUSIONS

Our multi-payer data provides a unique platform for cancer screening surveillance across various geographic areas within North Carolina. This work will create tools reproducible in other states and may help a broad range of communities use their local cancer screening resources most effectively and equitably

ACKNOWLEDGEMENTS

Work on this study was supported by the Cancer Information and Population Health Resource, UNC Lineberger Comprehensive Cancer Center, with funding provided by the University Cancer Research Fund via the state of North Carolina. CIPHR is supported by a National Cancer Institute Cancer Center Core Support Grant P30 CA016086 to the UNC Lineberger Comprehensive Cancer Center. This work was also supported by the American Cancer Society through a Team Science Grant, Award # PASD-TEAM-23-1076363-01, PI Reeder-Hayes. Special thanks are extended to Laurie Green and Erin Luarie-Zehr.