



Cancer Information & Population Health Resource

Chris Baggett, PhD



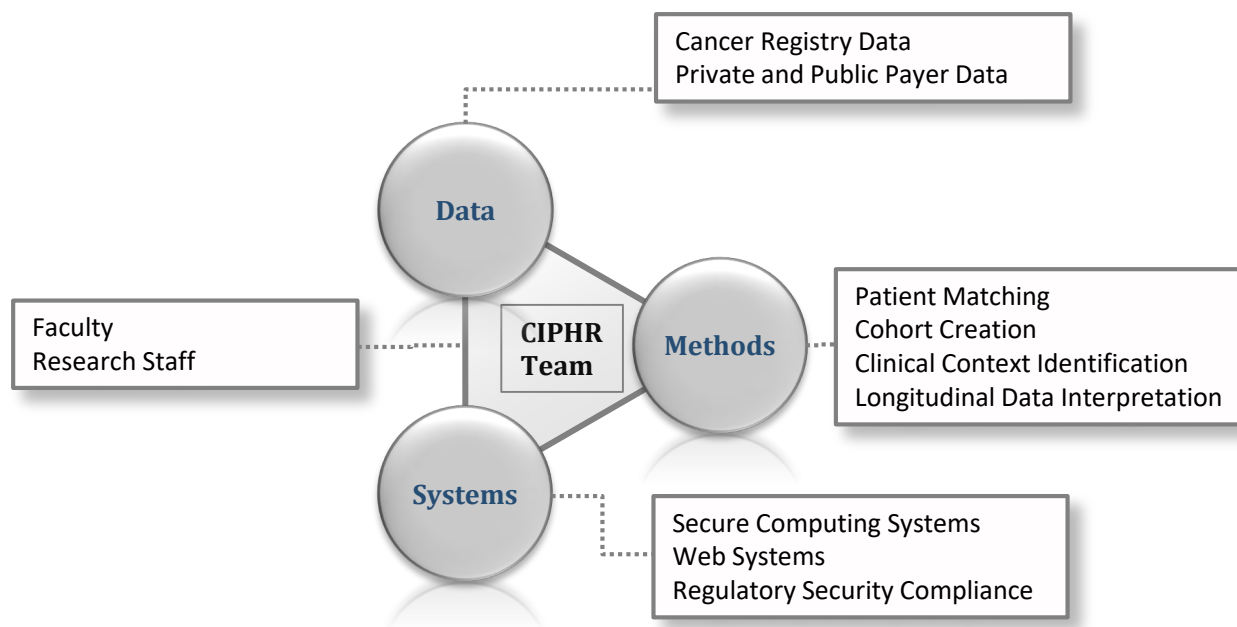
UNC
LINEBERGER COMPREHENSIVE
CANCER CENTER
N.C. CANCER HOSPITAL



What is CIPHR?

Lineberger Shared Resource

- provide researchers access to services that promote scientific productivity
- CIPHR provides a data linkage between metrics of cancer incidence, mortality, and burden in North Carolina



CIPHR Team

Directors



Chris
Baggett



Jenny
Lund



Katie
Reeder-
Hayes

Management



Laura
Green



Ciarro
Faulk

Analysts



May
Kuo



Josy
Zhou



KyungSu
Kim



Bradford
Jackson

Systems



Jabari
Jenkins



Jon
Tweedy



David
Barkhurst



NC Central Cancer Registry

- All newly diagnosed cancer cases in NC are reported to NCCCR
 - NC Department of Health & Human Services
- Data Captured
 - Tumor characteristics
 - Date of diagnosis
 - First course of treatment
 - Vital Status
 - Patient demographics & identifiers



Administrative “Claims” Data

Compliments NCCCR data

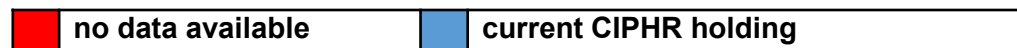
- Health care services received
- Medications
- Comorbidities
- Cost/charge/payment data
- Provider and facility info



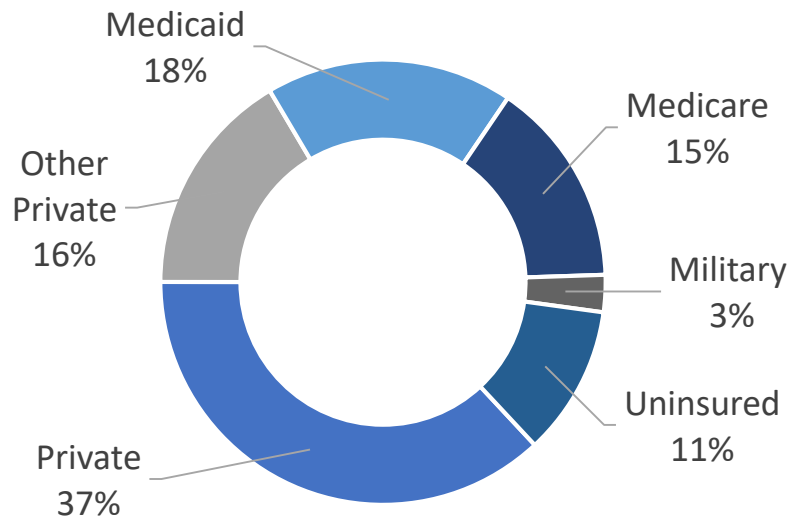
CIPHR Data

CIPHR develops and maintains an innovative, comprehensive, and linked data resource of large, population-based datasets.

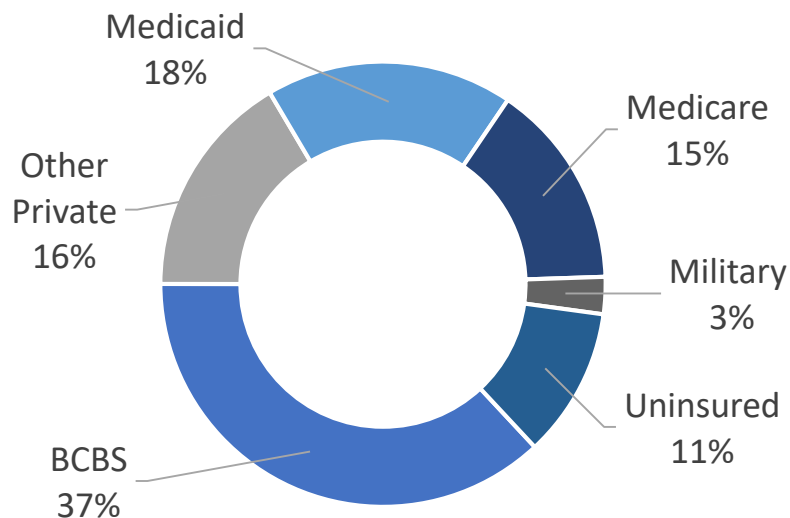
Data Source	2003	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
NCCCR																
Medicaid																
Medicare FFS																
Medicare Part D																
Medicare Advantage																
Private Plans																



NC Health Insurance Enrollment, 2018



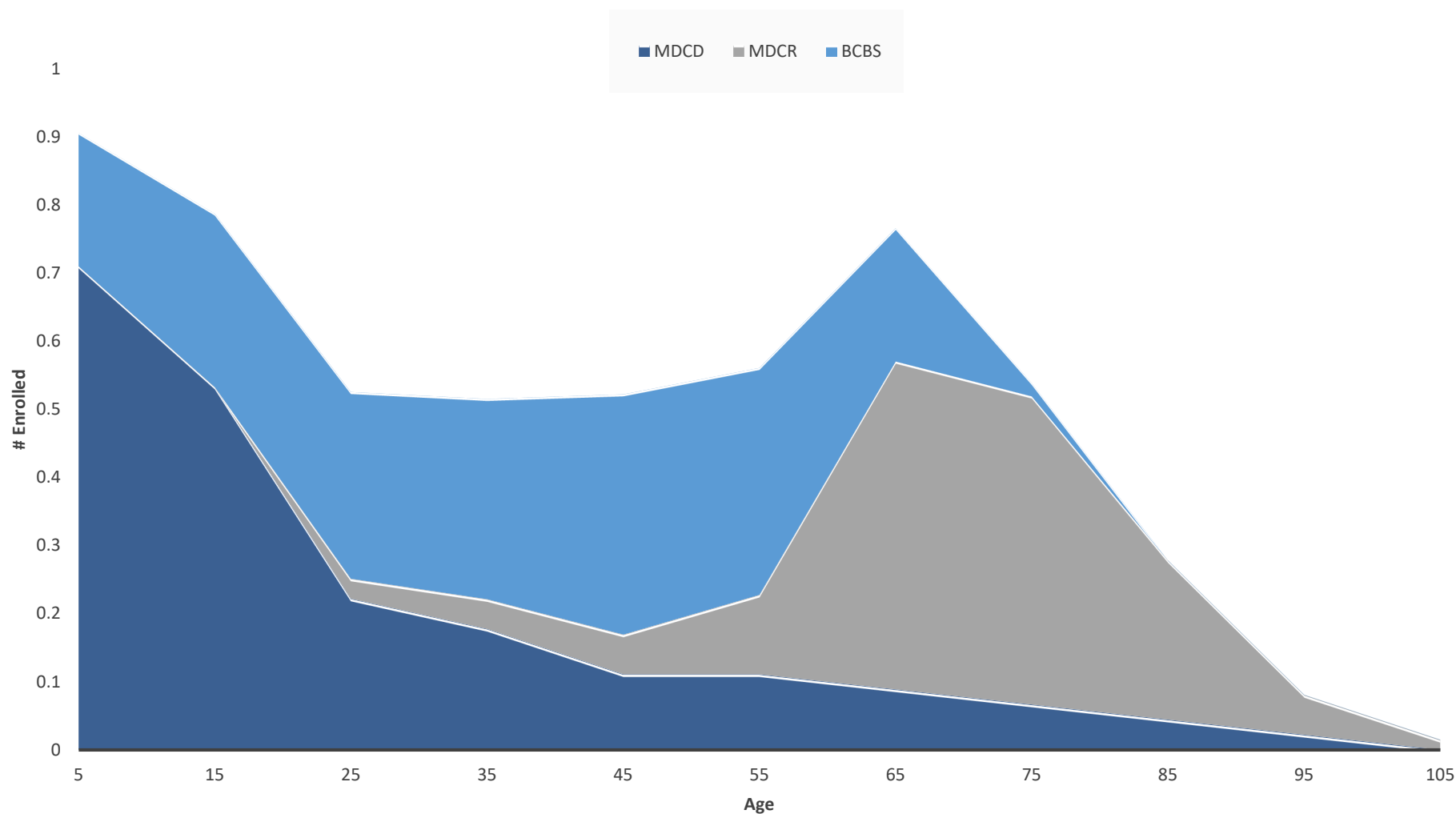
NC Health Insurance Enrollment, 2018



Insurance Claims	100% of Medicare 100% of Medicaid 70% of private health plans 65% of N.C. population
Cancer Cases	N.C. Central Cancer Registry- 850,000 cases
Cancer Cases linked to claims	85% of N.C. cases (~720,000 cases)

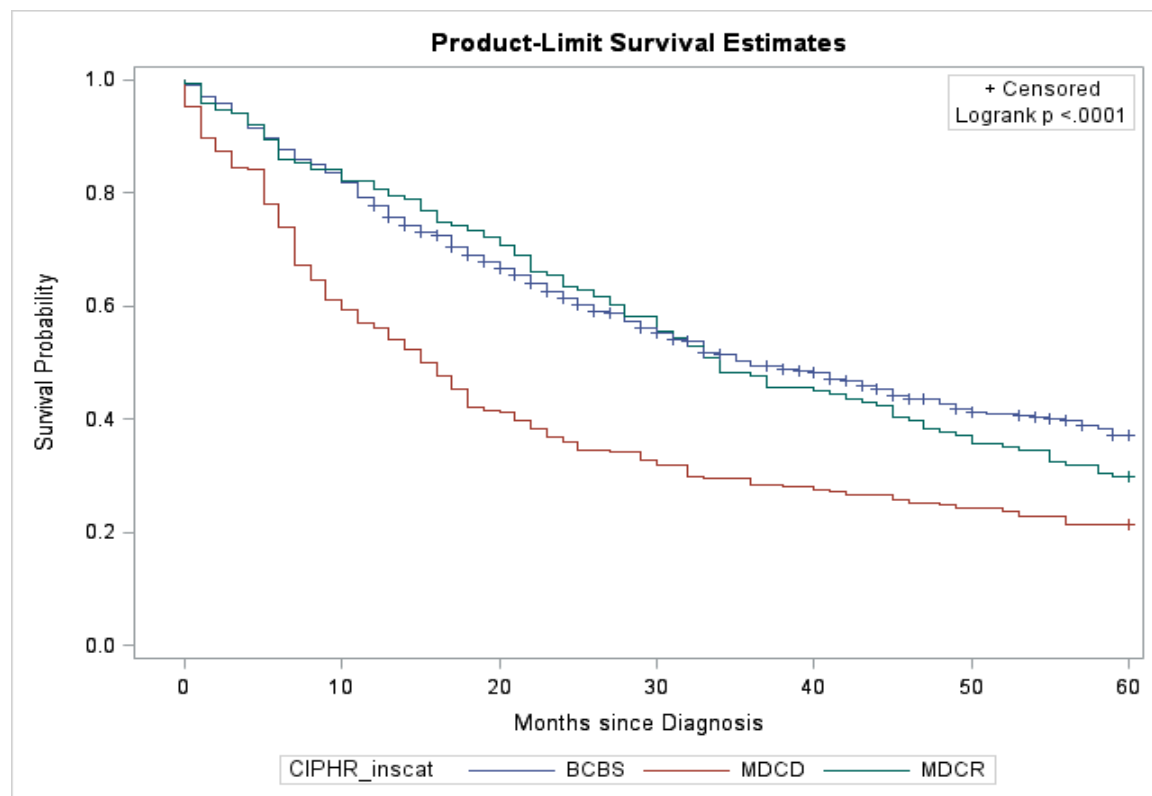


CIPHR Insurance Age Distribution



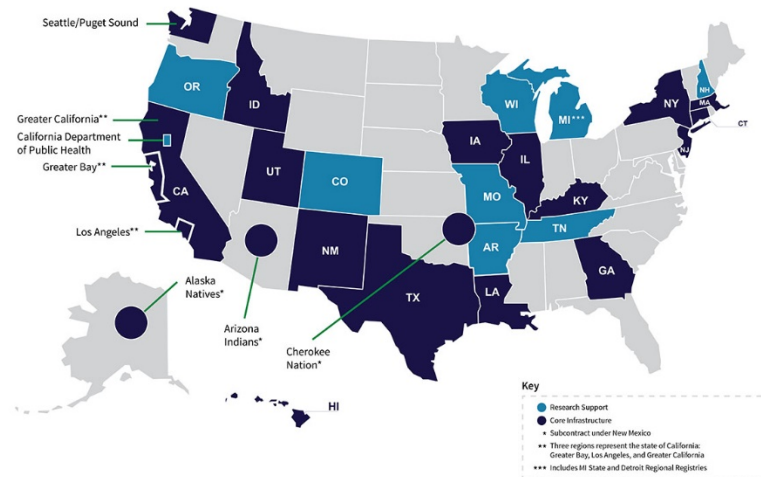
Enrollment Pattern Differs by Insurer

- Median time to loss of coverage
 - BCBS = 36 months
 - Medicare = 34 months
 - Medicaid = 16 months



SEER-Medicare

- Registry data 2004-17;
FFS Claims 2003-2019
- 25 Cancer Sites
- No data fee
- Storage & programming fees
- jennifer.lund@unc.edu



Cancer Sites (SEER site recode)

Oral cavity and pharynx	Soft tissue	Kidney and renal pelvis
Esophagus	Skin (excluding basal and squamous)	Brain and other nervous system
Stomach	Breast	Endocrine system
Small intestine	Cervix	Lymphomas
Colorectal	Uterus	Multiple myeloma
Liver and bile duct	Ovary	Leukemias
Pancreas	Other female genital system	Kaposi's sarcoma
Other digestive system	Prostate	
Lung and bronchus	Bladder	



What types of questions can be asked?

Adoption and effectiveness of de-escalated radiation and endocrine therapy strategies for older women with low-risk breast cancer

Katherine E. Reeder-Hayes^{a, b, ✉}, Stephanie B. Wheeler^{b, c}, Anne Marie Meyer^{b, 1}, Christopher D. Baggett^b, Ke Meng^{b, 2}, Jason Rotter^{c, 3}, Timothy Zagar^{e, 4}

EPIDEMIOLOGY

Medical costs associated with metastatic breast cancer in younger, midlife, and older women

Justin G. Trogon^{1,2,3} · Christopher D. Baggett^{2,4} · Anagha Gogate¹ · Katherine E. Reeder-Hayes^{2,5} · Jason Rotter¹ · Xi Zhou² · Donatus U. Ekwueme⁶ · Temeika L. Fairley⁶ · Stephanie B. Wheeler^{1,2,3}

JAMA Dermatology | Original Investigation

Association of Delays in Surgery for Melanoma With Insurance Type

Adewole S. Adamson, MD, MPP; Lei Zhou, MSPH; Christopher D. Baggett, PhD; Nancy E. Thomas, MD, PhD; Anne-Marie Meyer, PhD

Influence of Provider Factors and Race on Uptake of Breast Cancer Gene Expression Profiling

Katherine E. Reeder-Hayes, MD, MBA^{1,2}; Stephanie B. Wheeler, PhD^{1,3}; Christopher D. Baggett, PhD^{1,4}; Xi Zhou, MS¹; Ke Meng, PhD¹; Megan C. Roberts, PhD⁵; Lisa A. Carey, MD^{1,2}; and Anne-Marie Meyer, PhD^{1,4}

Is Medical Home Enrollment Associated With Receipt of Guideline-Concordant Follow-up Care Among Low-Income Breast Cancer Survivors?

Stephanie B. Wheeler, PhD, MPH,*†‡§ Racquel E. Kohler, MSPH,* Ravi K. Goyal, MS,†
Kristen H. Lich, PhD, MHSA,* Ching-Ching Lin, MHS,* Alexis Moore, MPH,†
Timothy W. Smith, MPA,§ Cathy L. Melvin, PhD, MPH,|| Katherine Reeder-Hayes, MD, MBA,‡
and Marisa E. Domino, PhD*†§

RESEARCH ARTICLE

Cancer Medicine WILEY

Provider- and patient-level predictors of oral anticancer agent initiation and adherence in patients with metastatic renal cell carcinoma

Lisa P. Spees^{1,2} | Stephanie B. Wheeler^{1,2} | Bradford E. Jackson² |
Christopher D. Baggett^{2,3} | Lauren E. Wilson⁴ | Melissa A. Greiner⁴ | Deborah R. Kaye^{5,6} |
Tian Zhang^{5,6,7} | Daniel George^{5,6} | Charles D. Scales Jr^{4,7} | Jessica E. Pritchard⁴ |
Michael Leapman^{8,9} | Cary P. Gross^{9,10} | Michaela A. Dinan^{9,11}

CIPHR Linkages

- EMRs: Carolina Data Warehouse for Health
- National Clinical Trials Network
- Society for Assisted Reproductive Technology
- Cohorts: PCaP, UNC Health Registry, CBCS3, Senior Registry
- NC State Center for Health Statistics death certificates



Data Use Approvals and Costs

- All proposed research uses of CIPHR data are subject to the CIPHR Governance Process
 - Each data partner must approve project
 - Approval can take ~6 months
- Student Costs
 - For students most fees waived
 - \$2,000 for computing environment
 - Bulk of programming work to be done by student



Project Cost Breakdown

Type		Units	Cost	Total
Required				
	CMS Reuse Fee	1	\$2,000	\$2,000
	CIPHR Data Fee	1	\$5,019	\$5,019
Total Required				\$7,019
Optional				
	Governance Mgmt	52 hours	\$71/hr	\$3,692
	SeDAP	1 user	\$2,029	\$2,029
	Analyst	400 hours	\$71/hr	\$28,400
Total Optional				\$34,121
All-Inclusive Total				\$41,140



New Investigator Program

- Eligibility
 - Post-docs, clinical fellows, junior faculty
- Submission Deadline:- April 15
- What you get:
 - Mentoring and analytic support
- Format
 - ~ Biweekly meetings
 - Discussion covers Aims/hypotheses, study design, variable creation, Statistical Analysis Plan development



New Investigator Program

Investigator	Affiliation	Project
Ben Wu	Pharmacy	Treatments in non-transplant myeloma
Vab Kumar	Hem/Onc	CVD and Brain Metastases
Josh Herb	Surgery	Disparities in Lung Cancer treatment
Daniel Richardson	Hem/Onc	Patterns of care in Acute Myeloid Leukemia
Jessica Islam	Epidemiology	Drug Interactions in HIV and Cancer
Matt LeBlanc	Lineberger	Treatment Patterns in Myeloma
Chris Jensen	Hem/Onc	Functional Status and therapy in Myeloma



New Investigator Program

“CIPHR is cool!”

-Matt LeBlanc



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New Investigator Program

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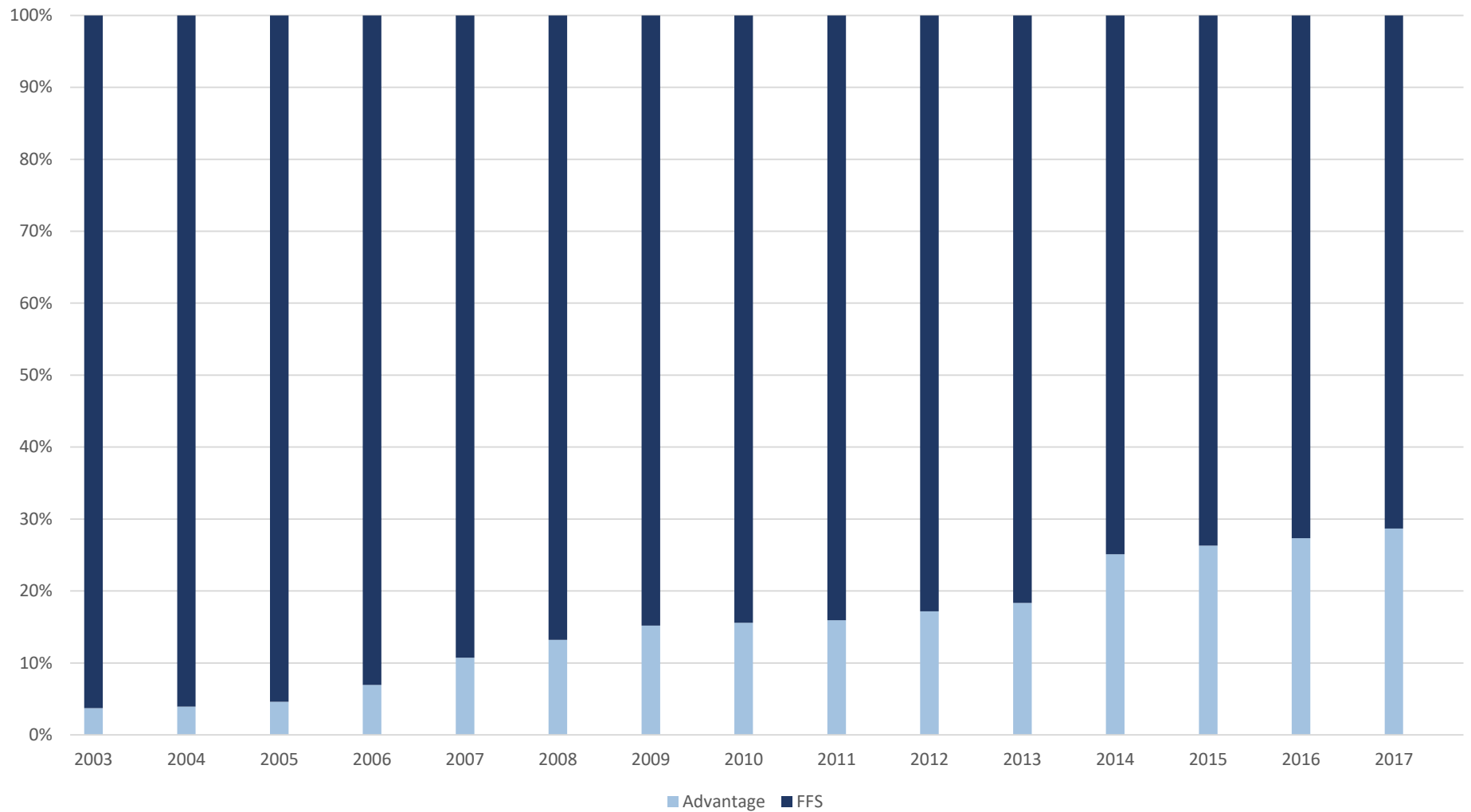


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CIPHR

NC Medicare Fee-For-Service & Advantage Enrollment

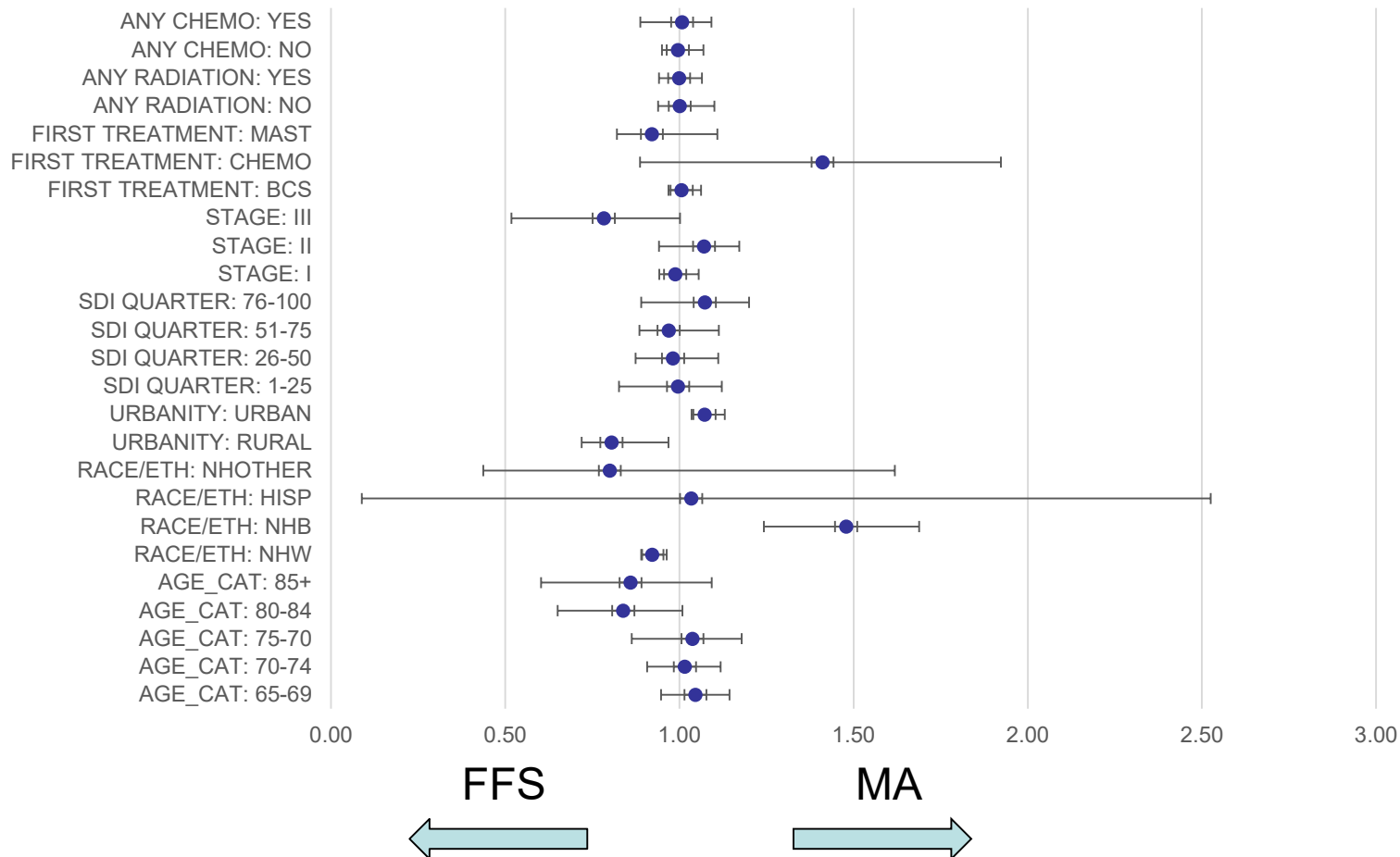


Medicare FFS versus Advantage

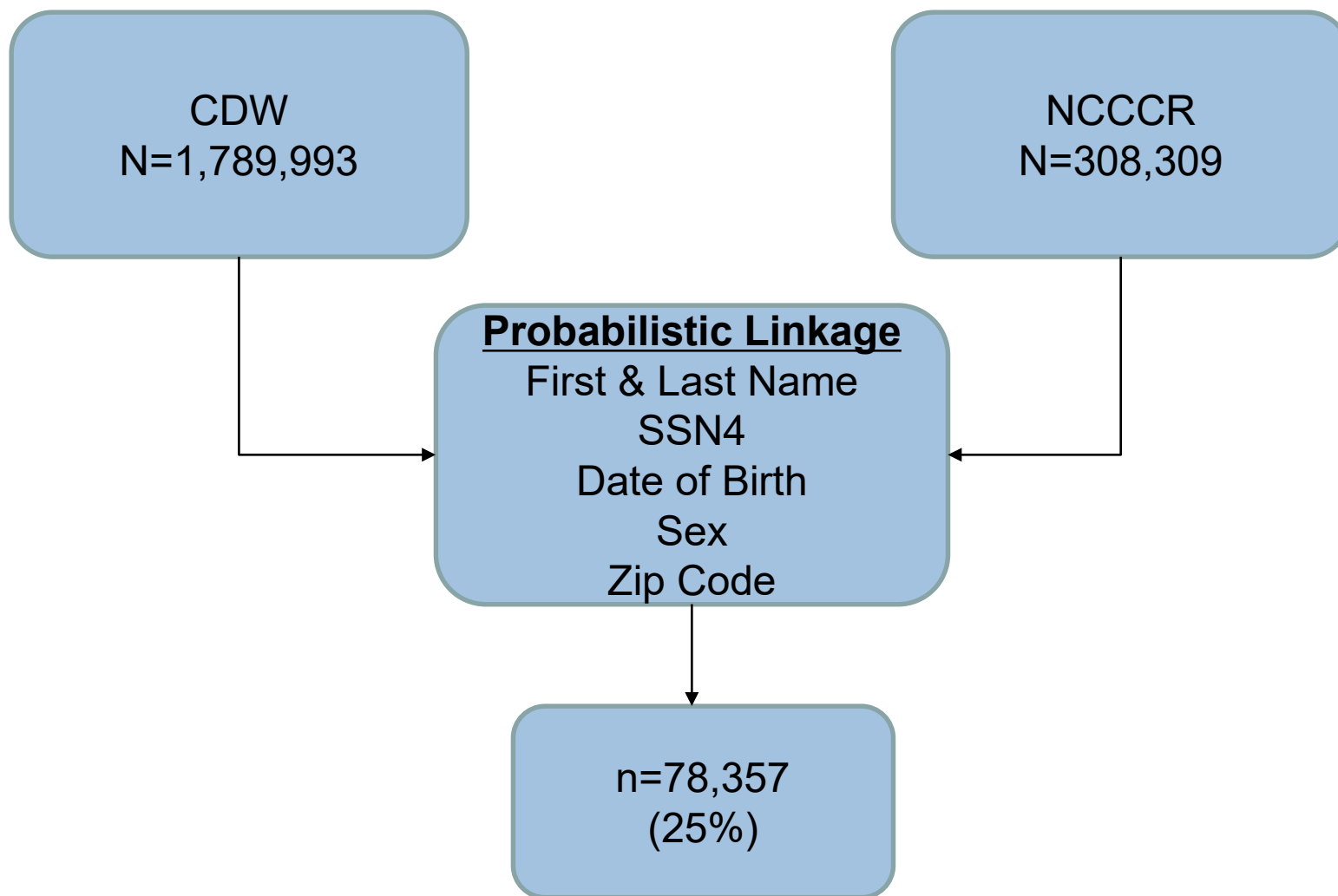
- Stage I-III breast cancer
- Diagnosed July 1, 2015 – June 30, 2017
- Enrollment for 6 months pre- and post- DX
- Total N=4,160
 - FFF n=2,593 (62%)
 - Advantage n= 1,567 (38%)



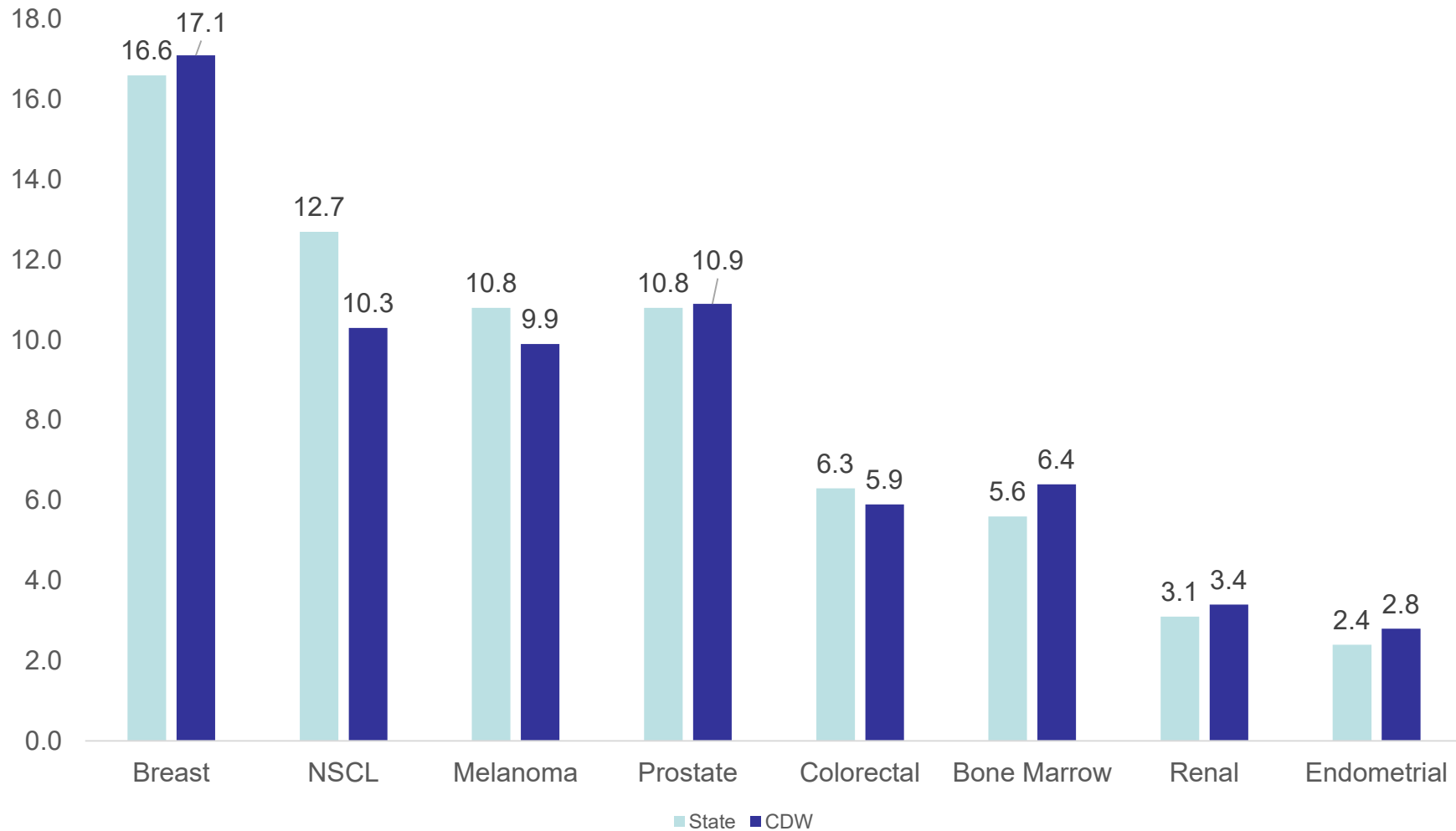
Prevalence Ratio FFS vs Advantage



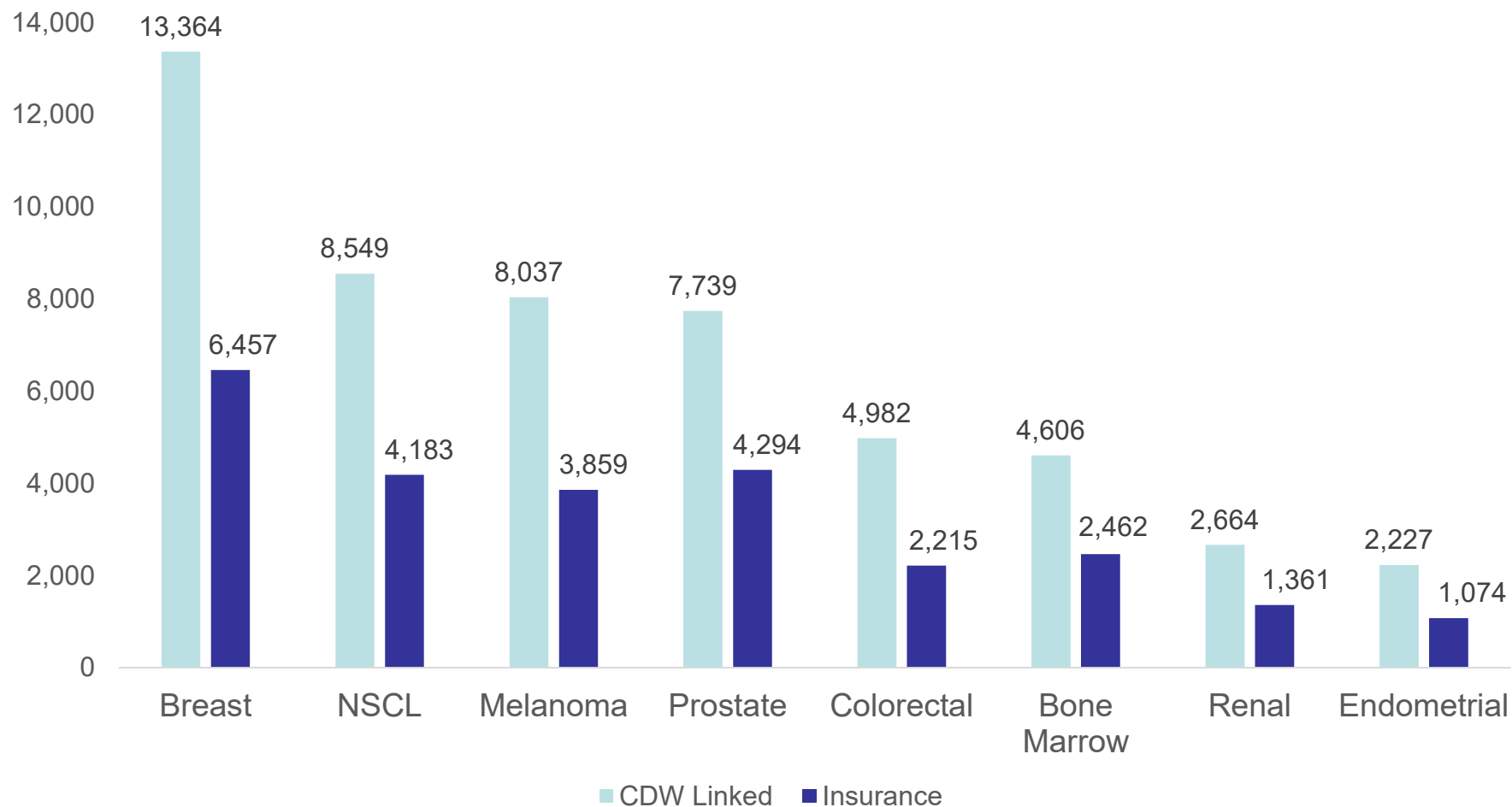
CIPHR – CDW Linkage: 2014-2018



Primary Site: NCCCR vs. CDW



Linked to CDW and with insurance (-3, 3 months)



Summary

- CIPHR has lots of data



Summary

- CIPHR has lots of data
- We are here to help



Summary

- CIPHR has lots of data
- We are here to help
- “CIPHR is Cool!”



Questions

Chris Baggett – cbaggett@unc.edu
ciphr.unc.edu

NC Central Cancer Registry
schs.dph.ncdhhs.gov/units/ccr/

U.S. Cancer Statistics Data Visualization
gis.cdc.gov/Cancer/USCS/

Kaiser Family Foundation
www.kff.org

