No Legislation? No Problem! Lessons from Building a Voluntary Multi-Payer Claims Database in North Carolina

Brad Hammill, Duke University
Daniel Kurowski, Health Care Cost Institute

NAHDO Annual Conference
August 25, 2020

With generous support from:
Arnold Ventures
The Commonwealth Fund

Presentation Outline

- Project overview
- Data sharing strategy
- Data alignment methodology
- Dissemination strategy
- Benefits & limitations of our approach

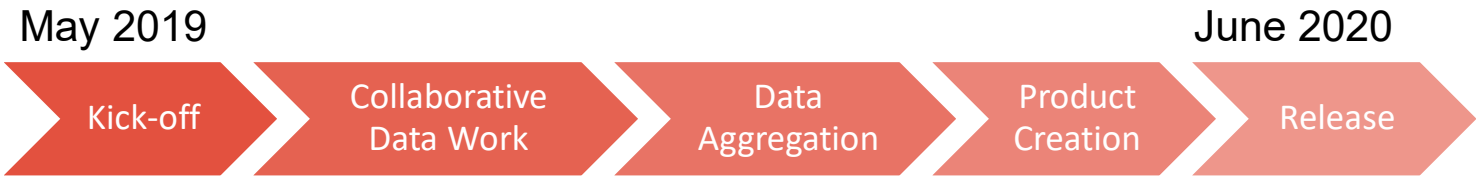
Project Overview

- Background
  - North Carolina does not have an all-payer claims database to inform stakeholders about healthcare costs/utilization
- Objective
  - Create a pseudo-APCD to enable stakeholders to understand key drivers of health care spending in the state
- Collaboration between
  - Blue Cross Blue Shield of North Carolina (BCBCNC)
  - Duke University
  - Health Care Cost Institute (HCCI)

Project Overview

- Main tasks
  - Harmonize methodology across institutions
  - Create aggregate data summaries at each institution (spending by county, age, sex, spending category, etc.)
  - Combine aggregate summaries across institutions
  - Disseminate results and summary data

- Timeline



Data strategy

- Data holdings

Insurance segment	Coverage	Institution
Employer-sponsored insurance	Selected	HCCI
		BCBSNC
Medicare fee-for-service (FFS), 100%	Complete	HCCI
Medicaid	Complete	Duke
Medicare advantage (MA)	Selected	HCCI
		BCBSNC

- Requirements
  - No patient-level data travels between institutions
  - HCCI acts as data aggregator across institutions

Data methodology

- Many decisions to make
  - Selection criteria
  - Claims categorization
    - Broad categories
    - Detailed categories
  - Spending & utilization measures
  - Conditions of interest
  - Episodes of interest
  - Adjustments required prior to dissemination

Selection Criteria Considerations

- Member identification as a resident of North Carolina defined by ZIP code
  - Members were assigned a county for the duration of the study period based on their county of “residence”
- Members were not required to have prescription drug coverage to be included in the study sample
  - Potential for bias in spending from members without prescription drug coverage (e.g. Medicare FFS members with no Part D coverage)
- Each member was assigned to a primary payer group
  - Secondary payer information was not considered

Claims Categorization

- Inpatient
  - Valid revenue center code and at least one of the following:
  - Place of service (POS) code 21, 31, 32, 33, 34, 51, 56, or 61
  - Valid Medicare Severity Diagnosis-Related Group (MS-DRG) code (V32)
  - Room and board revenue code 100-219
  - FFS claims with a National Claims History (NCH) claim type of 20, 30, 50, or 60
- Outpatient
  - Valid revenue center code and not classified as inpatient
  - Includes all ambulance, dialysis, home health, and DME/prosthetics/supplies, regardless of revenue center code presence or absence
  - FFS NCH claim type 10, 40, 81, 82, and ambulance claims from the carrier file (NCH claim type 71)
- Professional
  - No valid revenue code
  - FFS NCH claim type of 71, 72; Method II CAH claim lines (NCH claim type 40)
- Prescription Drug

Claims Categorization, Detailed

- Inpatient
  - Acute: labor & delivery, medical, mental health & substance use, newborns, surgery & transplant,
  - Non-acute: hospice, skilled nursing facility
- Outpatient
  - Administered drugs & immunizations, ambulance, dialysis, durable medical equipment, emergency department, evaluation & management, home health, labs & pathology, observation, procedures, radiology services
- Professional
  - Administered drugs & immunizations, anesthesia, behavioral health & case management, emergency department, evaluation & management, labs & pathology, observation, procedures, radiology services

Measures

- Spending
  - Allowed amount: sum of the insurer payment and the copayment or cost-sharing amount from the insured
  - Out-of-pocket amount: deductible, co-payment, and cost-sharing amount paid by the insured (or a third party, e.g. Medigap or Medicaid)
  - Excludes premiums

- Utilization wish list
  - Acute care inpatient admissions
  - “Post-Acute Care” days
  - Outpatient
  - Number of professional services delivered (“visits”)

Chronic Condition Classification

- Chronic conditions
  - Based on International Classification of Diseases, Tenth Edition, Clinical Modification (ICD-10-CM) codes on the claim
  - How many diagnostic slots are available in each payer's claims system?
  - Are providers/payers incentivized to include more codes than just the primary?

Condition	Type	ICD-10-CM
Depression	Chronic	F32, F33
Diabetes	Chronic	E10, E11, E13, Z96.41, Z46.81, T85.614A, T85.624A, T85.633A, and T85.694A
Lung Cancer	Acute Onset	C34
Opioid Use Disorder	Chronic	F11

Episode Classification

- Inpatient episodes defined by MS-DRG
- Utilization metric defined as episodes per 1,000
- Considerations
  - Spectrum of total FFS to capitated payments, global period rules

Episode	MS-DRG or CPT	Days Prior	Days After
Caesarian Section (C-Section)	765, 766	1	60
Vaginal Delivery	767, 768, 774, 775	1	60
Lower Joint Replacement	469, 470	3	30
Stroke	061, 062, 063, 064, 065, 066	1	90

Adjustments

- Age-gender Adjustment
  - Adjusted for age and gender to facilitate comparison across geographic areas, within payer group

- Masking and Suppression

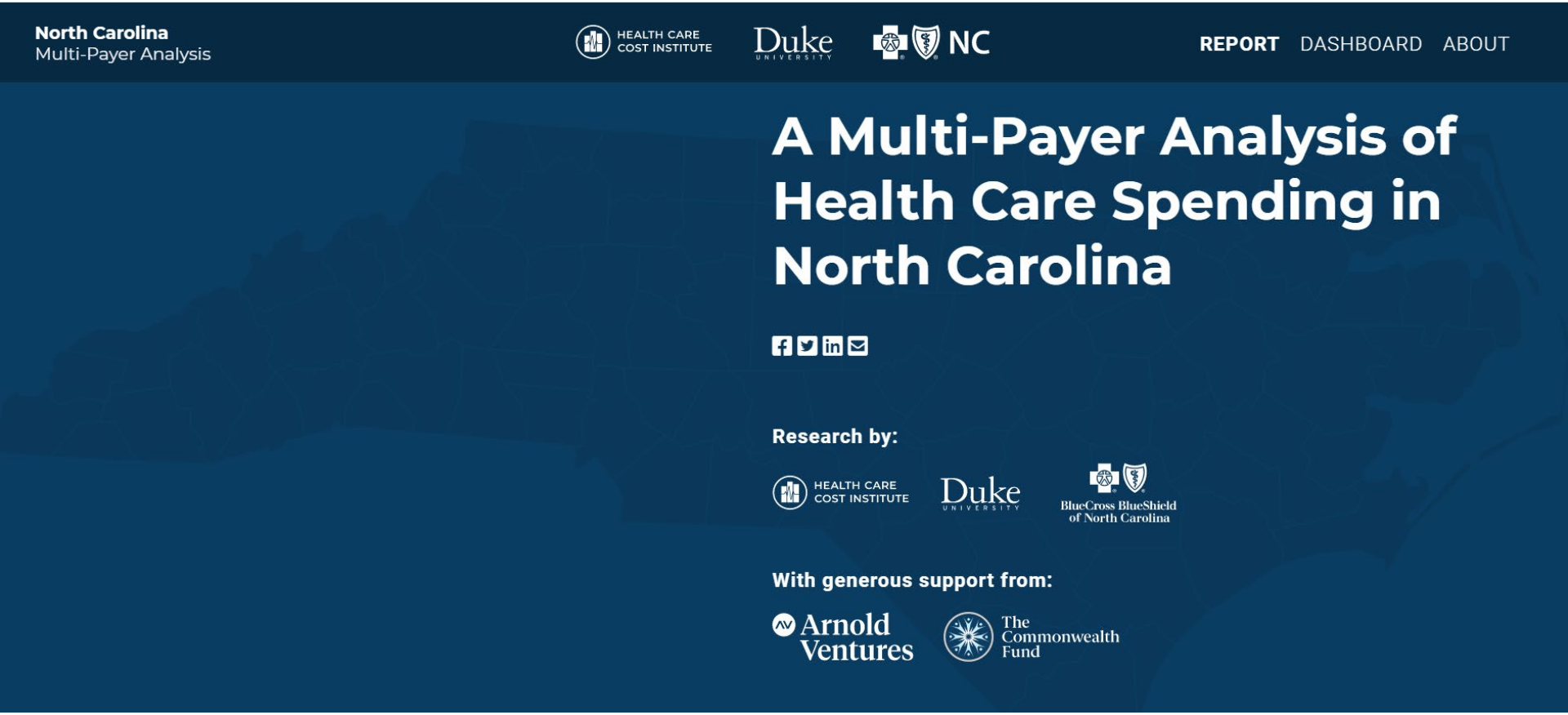
  To ensure that individuals, providers, and payers were not identifiable in the public analytic data set, we do not report data where:
  - fewer than 11 unique individuals in the age-gender-payer group in the county or state had a claim for a service in the category,
  - fewer than 5 unique providers delivered a service in the category to patients in the age-gender-payer group in the county or state, or
  - There was not a sufficient mix of payers in the county (for the employer-sponsored insurance and Medicare Advantage populations)

Dissemination strategy

- The following products were made publically available:
  - Interactive web site
  - Detailed summary data
  - Project methodology document (includes code lists & algorithms)
  - Project FAQ document

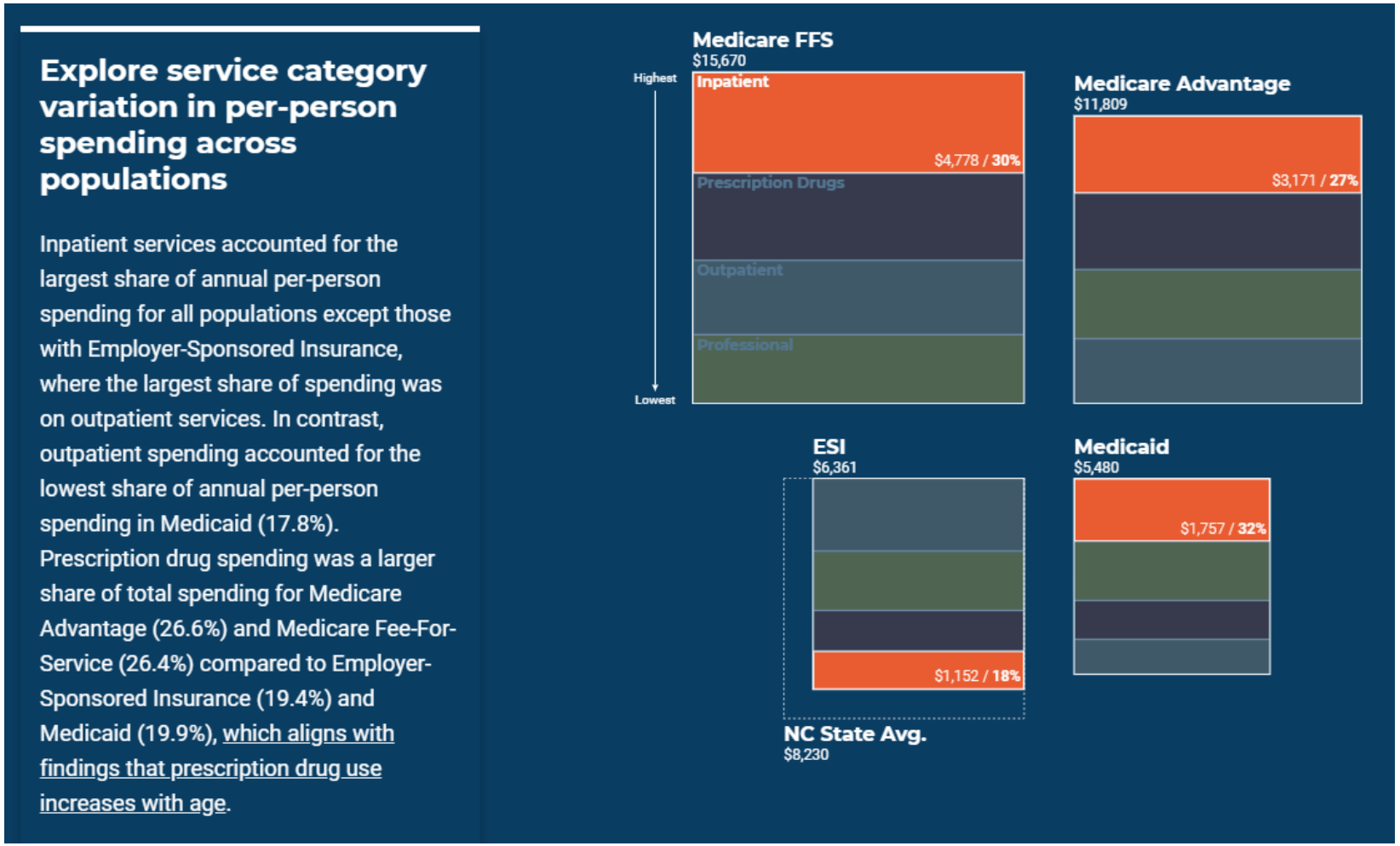
Dissemination strategy

- Interactive web site
  - https://healthcostinstitute.org/hcci-originals/ north-carolina-health-care-spending-analysis



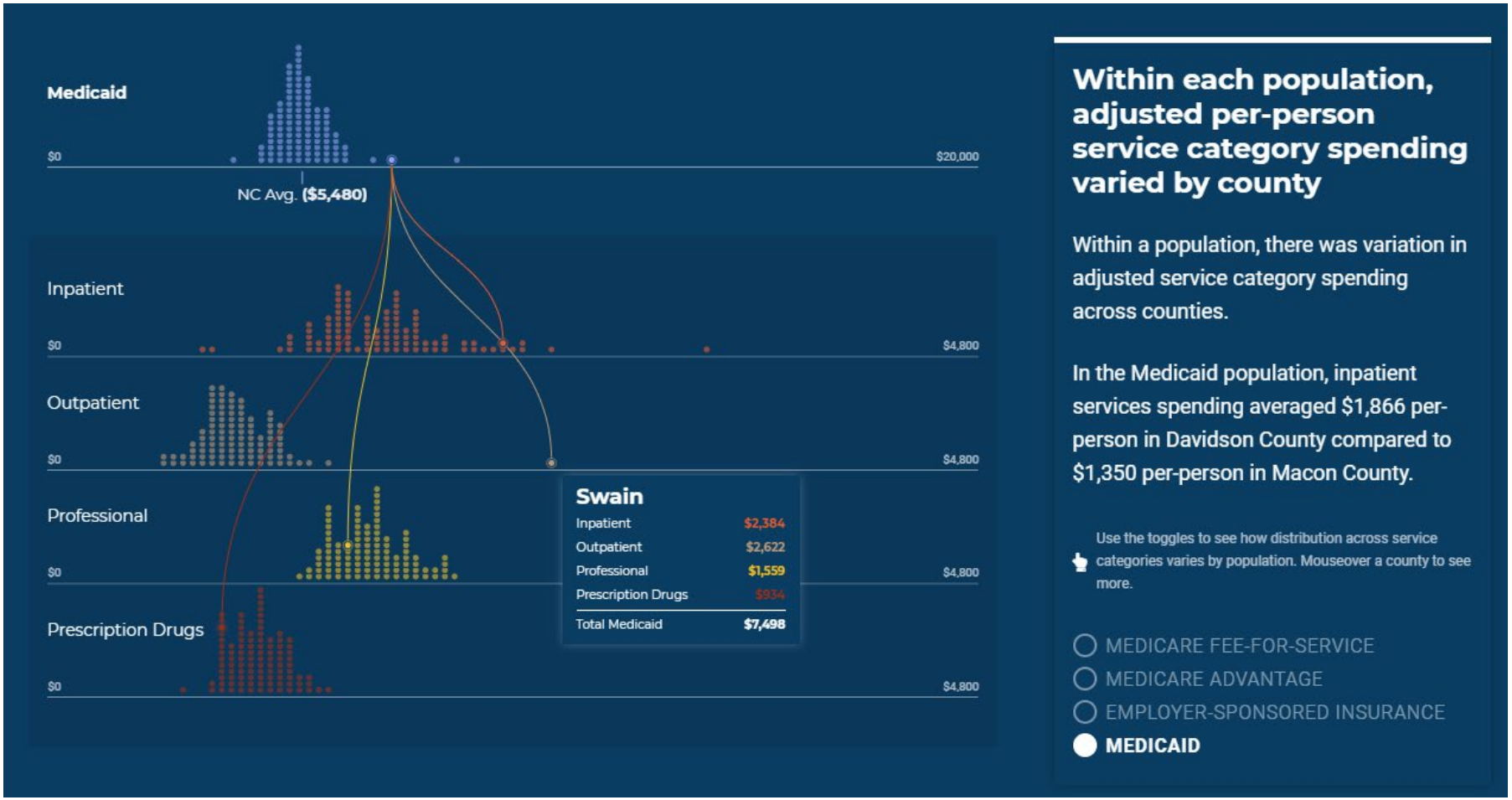
Dissemination strategy

- Interactive web site



Dissemination strategy

- Interactive web site



Dissemination strategy

- Detailed statewide and county-level summary data (32 tables), including…

Enrollment

Total spending, overall + by age/gender

Out-of-pocket spending

Spending by category, overall + detail

- Inpatient
- Outpatient
- Professional
- Prescription

Spending, specified healthcare episodes

- Stroke
- Lower Joint Replacement
- C-Section Delivery
- Vaginal Delivery

Spending, people w/specified conditions

- Diabetes
- Opioid Use Disorder
- Depression
- Lung Cancer

Spending for Medicare/Medicaid Dual-Eligibles

Dissemination strategy

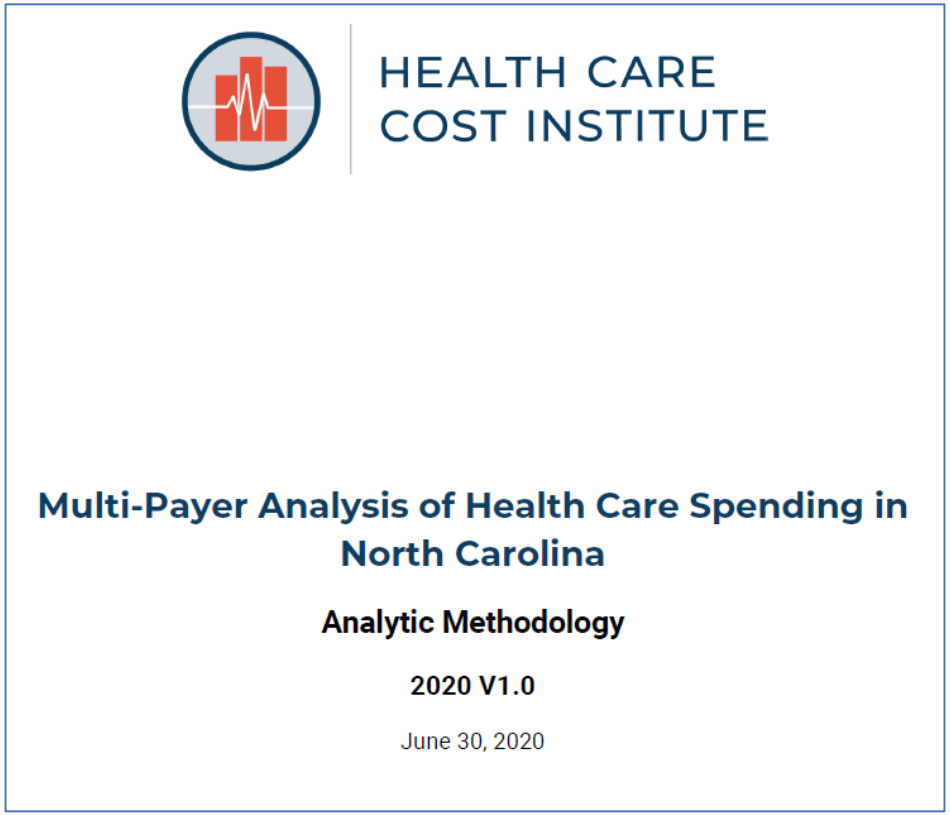
- Detailed summary data, example

Table 16. Detailed Outpatient Spending, by County
Back to List of Public Tables

County	Detail Category	Employer-Sponsored Insurance	Medicaid	Medicare Fee-For-Service	Medicare Advantage
Alamance	Administered Drugs & Immunizations	$920	$114	$700	$504
Alamance	Ambulance	$13	$17	$127	$120
Alamance	Dialysis	$72	$5	$535	$163
Alamance	Durable Medical Equipment	$25	$23	$189	$120
Alamance	Emergency Department	$287	$360	$341	$295
Alamance	Evaluation & Management	$63	$14	$149	$56
Alamance	Home Health	$1	$245	$434	$239
Alamance	Labs & Pathology	$110	$30	$61	$57
Alamance	Observation	$37	$11	$18	$48
Alamance	Other	$87	$6	$148	$70
Alamance	Procedures	$518	$233	$901	$693
Alamance	Radiology & Imaging	$341	$88	$307	$290
Alexander	Administered Drugs & Immunizations	$1,147	$106	$498	$513
Alexander	Ambulance	$22	$14	$163	$98
Alexander	Dialysis	-	$4	$220	$123
Alexander	Durable Medical Equipment	$16	$34	$229	$160
Alexander	Emergency Department	$210	$222	$250	$223
Alexander	Evaluation & Management	$30	$5	$124	$54
Alexander	Home Health	$1	$173	$381	$203
Alexander	Labs & Pathology	$91	$20	$62	$48
Alexander	Observation	$23	$8	$19	$14
Alexander	Other	$76	$18	$172	$109
Alexander	Procedures	$429	$263	$876	$714

Dissemination strategy

- Project methodology document (incl. code lists/algorithms)
- Project FAQ document

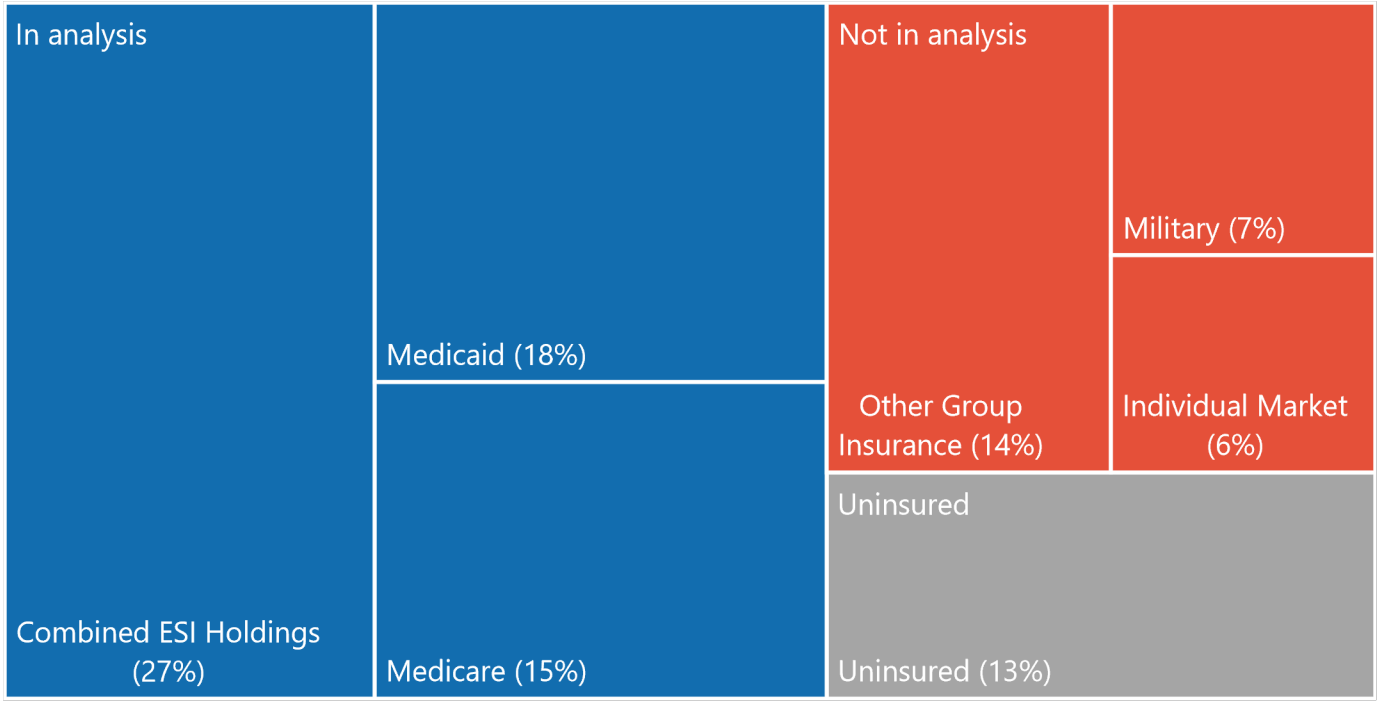


Limitations of our approach

- Person matching across data holdings is impossible
  - Potentially a limitation in a traditional APCD
- Complex risk-adjustment not possible
- Ensuring data consistency is challenging
  - Structure of each contributors' data holdings differs with inherent differences in the claims
  - Where possible, service categories were re-arranged
  - Categories differ from the native source reporting
  - Must consider benefit design
- Multiple teams needed to execute analysis

Limitations of our approach

- Incomplete coverage
  - ~60% of NC residents in analysis



* Estimates based on data from the American Community Survey, Tricare, the VA, and the Center for Consumer Information and Insurance Oversight (CMS)

Benefits of our approach

- No need to set up a new data warehousing system
- Potential for faster time to development of insights
- Potentially less expensive approach to an APCD
- Does not require legislation, just eager and curious organizations

Thank you!


HEALTH CARE
COST INSTITUTE
Duke
UNIVERSITY
BlueCross BlueShield
of North Carolina