



# Assessing the Reliability and Validity of Primary Payer Information in Central Cancer Registry Data

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- Background
- Study Purpose
- Design/Methodology
- Preliminary Results
- Anticipated Outcomes

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# Study Background

- Relationship Between Insurance Coverage and Stage/Outcomes
- Definition of Primary Payer
- Data Collection and Processing
- Current Data Use Limitations

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# Study Purpose

- Evaluate the Validity and Reliability of Primary Payer at Diagnosis (DX)
- Assess Changes in Primary Payer
- Test the Feasibility and Value of Collecting Additional Primary Payer Information
- Gather Information on Central Registry Processing of Primary Payer

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# Design & Methodology



- Contract with Westat for Technical Administration, Oversight, and Analysis
- Four Participating Central Registries
  - ◆ Florida
  - ◆ Georgia
  - ◆ Massachusetts
  - ◆ Oklahoma

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# Design & Methodology



- Re-abstraction from Source Records
- Data Items to Re-Abstract: Primary Payer at DX, Marital Status
- New Data Items to Abstract: Primary Payer at Various Event Dates (e.g. Date 1<sup>st</sup> Course, Date of Chemo)
- Record PP for an event from the facility where the event occurred, on the date it occurred
- Linkage with Hospital Discharge Data

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# Final Sample Size

- Prostate & Ovarian Cases Diagnosed in 2006

State	Prostate Cases	Ovarian Cases	Oversample
FL	674	487	Hispanic, African American
OK	806	213	Native American
MA	815	274	Asian
GA	294	289	African American
<b>Total</b>	<b>2589</b>	<b>1263</b>	



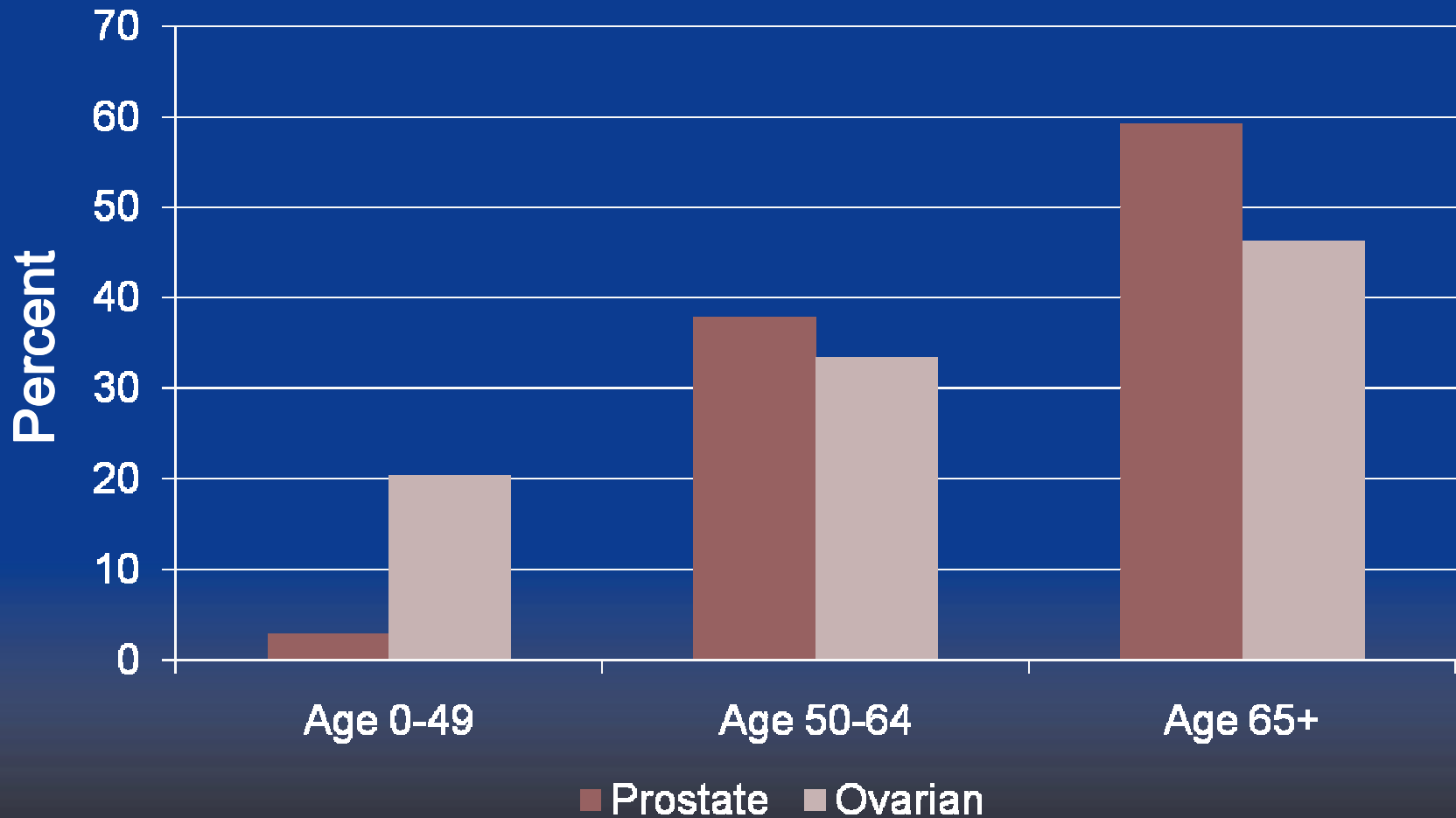
# Study Questions

- Determine proportion of registry data that accurately reflects Primary Payer at DX or RX
- Describe type of mis-codings in registry data
- Characterize groups (age, race, sex) for which agreement is low
- Determine proportion of re-abstracted data that accurately reflects hospital discharge data
- Determine proportion of cases for which Primary Payer changed after diagnosis and at what interval
- Examine associations between re-abstracted Primary Payer at DX and Stage at DX

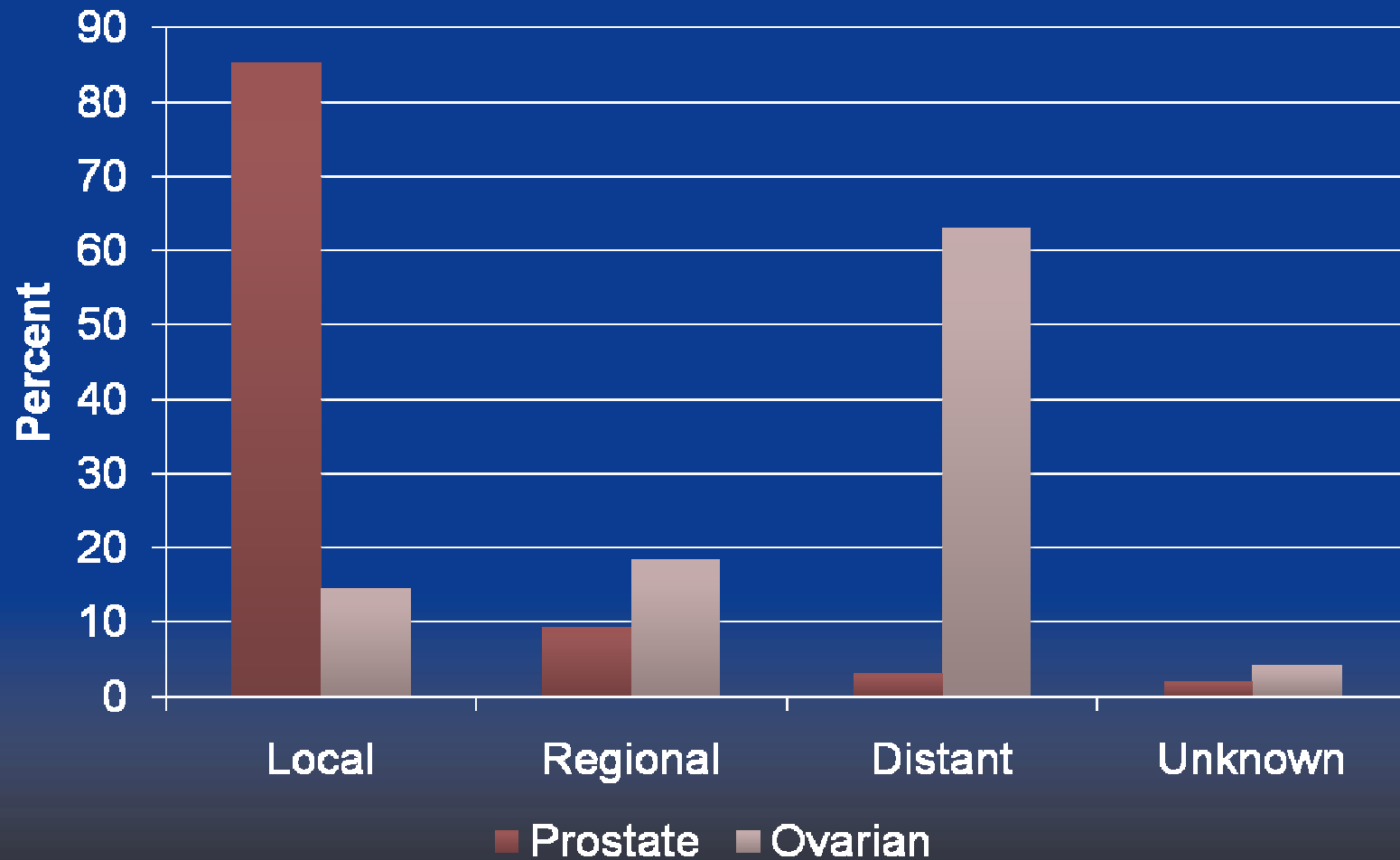
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# Age Distribution of Study Cases



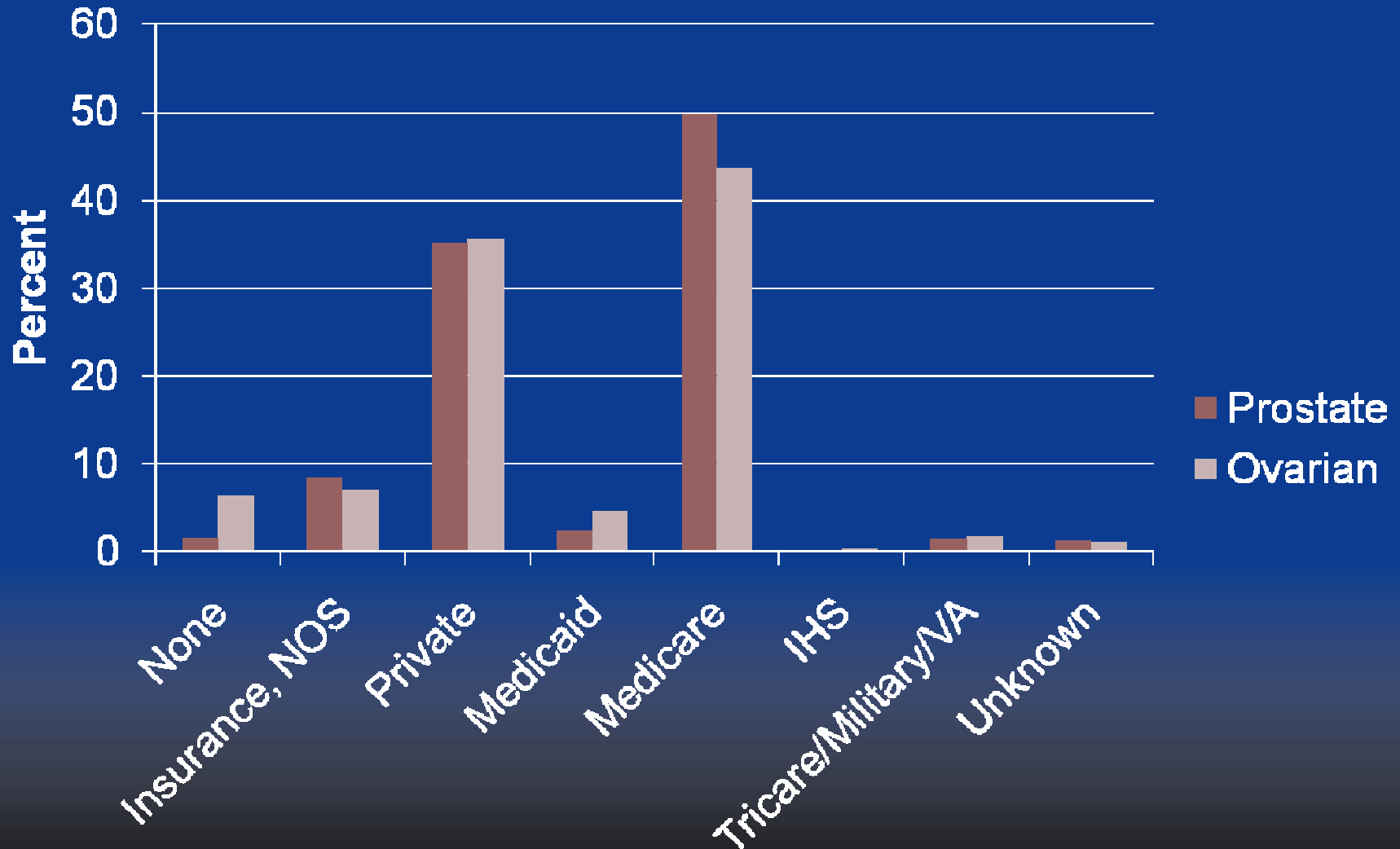
# Stage Distribution of Study Cases



# Insurance Categories for Analysis

- None: Not Insured + Self Pay
- Private: Managed Care, HMO, PPO + Fee-for Service
- Medicaid: Medicaid + Medicaid Administered through Managed Care
- Medicare: Combines any code with Medicare, including Medicare with Medicaid Eligibility

# Distribution of Primary Payer, by Site



# Proportion of data that accurately reflects Primary Payer at DX and RX, all cases

Original PP at Diagnosis	Re-abstracted PP at Diagnosis	Re-abstracted PP at 1 <sup>st</sup> Course RX
None	60.7%	51.3%
Insurance, NOS	7.5%	6.6%
Private/Managed Care/FFS	62.1%	77.2%
Medicaid	52.9%	52.9%
Any Medicare	75.3%	76.4%
Indian Health Service	14.3%	14.3%
Tricare/Military/VA	75.0%	73.3%
Unknown	25.0%	6.8%
Total	63.5%	68.7%

# Reason for low agreement with re-abstracted PP at DX

- Cases originally coded as Insurance, NOS (305)
  - ◆ 50.8% recoded to Private, Managed Care/FFS
  - ◆ 25% recoded to Unknown
- Cases originally coded as Medicaid (99).
  - ◆ 19% recoded to Unknown
  - ◆ 13% recoded to Medicare
- Cases originally coded as Unknown (44)
  - ◆ 40.9% recoded to Medicare
  - ◆ 20.5% recoded to Private, Managed Care/FFS

# Unknown Re-abstracted PP at DX

- 858 (22.3%) of the cases were changed from known to unknown PP at DX upon re-abstractation [30.6% prostate/5.2% ovarian]
- 621 (72.4%) of these cases had a known PP at RX
- 490 (57.1%) matched the PP at RX category
- This may describe the extent to which the archived PP at DX is actually PP at RX, rather than PP at DX

## Proportion of data that accurately reflects Primary Payer at Date of DX, by Site

<b>Archived PP at Diagnosis</b>	<b>Prostate</b>	<b>Ovarian</b>
None	47.4%	67.1%
Insurance, NOS	5.5%	12.5%
Private/Managed Care/FFS	51.5%	83.7%
Medicaid	41.3%	65.5%
Any Medicare	68.6%	91.1%
Indian Health Service	0.0%	20.0%
Tricare/Military/VA	78.4%	69.6%
Unknown	28.1%	16.7%
Total	55.9%	78.9%



# Proportion of data that accurately reflects Primary Payer at Date of 1<sup>st</sup> Course RX, by Site

<b>Original PP at Diagnosis</b>	<b>Prostate</b>	<b>Ovarian</b>
None	39.5%	60.0%
Insurance, NOS	5.5%	9.1%
Private/Managed Care/FFS	74.5%	82.8%
Medicaid	50.8%	55.2%
Any Medicare	76.2%	76.7%
Indian Health Service	0.0%	20.0%
Tricare/Military/VA	78.4%	65.2%
Unknown	6.3%	8.3%
Total	67.7%	70.9%

# Agreement between re-abstracted Primary Payer at Date of Diagnosis and Date 1<sup>st</sup> Course

- 92.8% overall
  - ◆ Most insurance does not change between diagnosis and treatment
  - ◆ Fact that archived data reflects one or the other may not be problematic

# Agreement by Age, Race, Ethnicity, and Site

	Prostate Cancer		Ovarian Cancer	
AGE	PP at DX	PP at RX	PP at DX	PP at RX
0-49	48.0%	76%	75.8%	71.9%
50-64	48.6%	66.3%	73.0%	69.9%
65+	60.9%	68.1%	84.6%	71.1%
RACE				
White	56.2%	68.8%	78.9%	72.1%
Black	54.2%	64.8%	78.4%	57.7%
Asian/Pacific Isl.	54.4%	59.4%	85.7%	81.0%
AI/AN	63.6%	69.7%	70.0%	70.0%
ETHNICITY				
Hispanic	57.7%	65.5%	77.8%	74.1%
Non-Hispanic	55.8%	67.9%	79.1%	70.6%
TOTAL	55.9%	67.7%	78.9%	70.9%

# Other Findings

- Prostate: Original PP at DX agrees more with re-abstracted PP at RX
- Ovarian: Original PP at DX agrees more with re-abstracted PP at DX
- 27.8% of Medicare, NOS is recoded to Medicare with Private Supplement
- 43.6% of Medicare with Supplement, NOS is recoded to Medicare with Private Supplement

# Proportion of Re-Abstracted Data that Accurately Reflect Discharge Data

- Calculated for Florida and Georgia
- Assumes that re-abstracted data is “gold standard”
- Results based on cases where patient has a record in the discharge database
- Much smaller sample size

	Cases linked on Date of DX	Cases linked on Date 1 <sup>st</sup> Course	Total Cases
Prostate	119 (12.3%)	326 (33.7%)	968
Ovarian	402 (51.8%)	385 (49.6%)	776

# Proportion of Re-Abstracted Data that Accurately Reflect Discharge Data

Insurance in Discharge Database	Re-abstracted PP at Diagnosis	Re-abstracted PP at 1 <sup>st</sup> Course RX
None	52.0%	48.5%
Insurance, NOS	N/A	N/A
Private/Managed Care/FFS	85.1%	86.5%
Medicaid	59.3%	57.1%
Any Medicare	94.7%	92.0%
Indian Health Service	N/A	N/A
Tricare/Military/VA	85.7%	72.7%
Unknown	N/A	N/A
Total	86.6%	85.8%

# In Summary.....

- Agreement varies by Primary Payer category and cancer site
- The overall agreement between original and re-abstracted PP at DX is 63.5%
  - ◆ Re-abstracted PP at DX being unknown for prostate
  - ◆ More specific code is available in medical record

# In Summary.....

- Both PP at DX and PP at Date 1<sup>st</sup> Course are being captured in the data field
- Most insurance (92.8%) does not change between diagnosis and treatment
- Hospital discharge data is a reliable source of information on primary payer





# Anticipated Outcomes



- Improved understanding of current data collection processes and issues
- Comprehensive evaluation of data quality and changes in Primary Payer
- Assess need for new data items or codes
- Recommendations for collection, coding, and consolidation of Primary Payer
- Development of education and training programs

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# Thank You!

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The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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