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CANCER REGISTRY AND ELECTRONIC MEDICAL RECORD DATA IN HEAD AND NECK CANCER RESEARCH

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- No relevant disclosures

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Head and Neck Cancer

- Complex cancer
  - *Comprised of tumors arising from mucous lining of mouth, pharynx, larynx, nasal cavity, and paranasal sinuses*

- Worldwide
  - *550,000 persons diagnosed annually*
  - *300,000 persons die annually*

- United States (US)
  - *61,000 person diagnosed annually*
  - *13,000 person die annually*

Head and Neck Cancer

- Complex treatment
  - *Chemotherapy*
  - *Radiation Therapy*
  - *Surgery*
  - *Combination of treatments*

- Survival is increasing in US
  - *Nearly 2/3 of head and neck cancer population live 5 years or more*
  - *Treatment toxicity is also increasing*

Head and Neck Cancer

- Unclear whether medically underserved population is experiencing survival benefit
  - *Underrepresented in clinical trials*
  - *Underrepresented in national datasets*

- Limited evidence to guide the care of patients receiving cancer treatments in safety-net health systems for low-income, uninsured, or vulnerable populations

Research Question

Can combined hospital cancer registry and electronic medical record (EMR) data from a northeastern US integrated safety-net system be used to analyze factors associated with receipt of cancer treatment among medically underserved person with head and neck cancer?

Specific Aims

■ 1) To identify demographic and clinical features of the population receiving care for head and neck cancer in an integrated, safety-net health system

■ 2) To determine factors associated with receipt of cancer treatment among persons undergoing care for head and neck cancer in an integrated, safety-net health system

Study Design

- Exploratory, hypothesis generating study

- Retrospective, multi-institution review of combined tumor registry and electronic heath record data

- 372 racially diverse patients with histologic diagnosis of head and neck cancer between January 1rst, 2007 and January 1rst, 2010

- Receiving care for head and neck cancer in a large, northeastern US integrated safety-net health system

Study Procedures

■ Received approval from a regional biomedical internal review board

■ <u>Data Collection</u>

– *Tumor registrars:*

• Identified study population using International Classification of Diseases for Oncology, 3rd edition codes from C00.0 – C32.9

• Provided demographic, tobacco, alcohol, cancer site, cancer stage, date of diagnosis, and dates of chemotherapy and radiation therapy data

– *Researchers:*

■ Abstracted other clinical data

■ All data were stored on encrypted software

Aim 1. Demographic and Clinical Features

Study Population Characteristics (N=372)	
Age: Mean 59.3 $\pm$ 13, range 20 to 100	
Variable	N(%)
Gender	Male
Male	289(78%)
Female	81(22%)
Cancer Site	
Oral Cavity and Pharynx	270(73%)
Laryngeal and other sites	102(27%

Aim 1. Demographic and Clinical Features

Study Population Characteristics (N=372)	
Race/Ethnicity	N(%)
White	65(18%)
Black or African American	153(41%)
Hispanic	76(20%)
Other or Unknown	78(21%)
Cancer Stage	
0/1	37(10%)
Ii	33(9%)
III	49(13%)
IV	212(57%)
Unknown	41(11%)

Aim 1. Demographic and Clinical Features

Study Population Characteristics (N=372)	
Treatment	N(%)
No Treatment	67(18%)
Chemotherapy	16(4%)
Radiation Therapy	28(7%)
Surgery	42(11%)
Radiation Therapy/Chemotherapy	146(39%)
Surgery/Chemotherapy	2(1%)
Surgery/Radiation Therapy	33(9%)
Surgery/Radiation Therapy/Chemotherapy	38(10%)

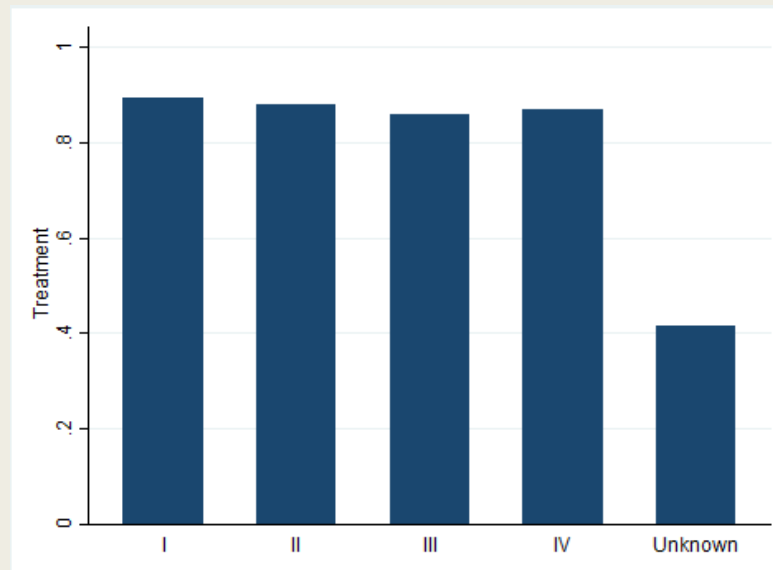# Aim 2. Factors associated with receipt of cancer treatment

The study population age 59 and younger was significantly more likely to receive treatment than the population age 60 and older (Age 59 and younger: OR 2.2, 95% CI: 1.4 – 3.5, Age 60 and older: Reference)*
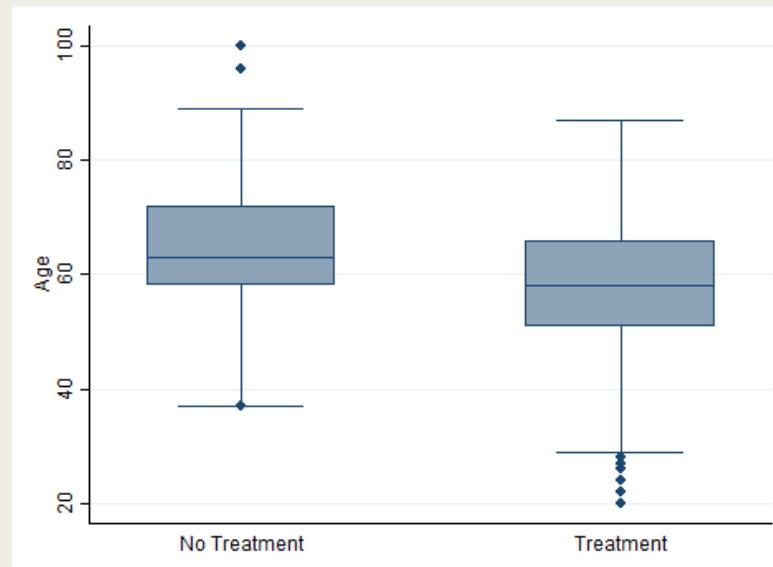
*Controlling for gender, race/ethnicity, cancer stage, and cancer site

Aim 2. Factors associated with receipt of cancer treatment

The study population with an unknown stage was significantly less likely to receive treatment than those with stage I disease (OR .08, 95% CI .03 - .22, Sage I Reference)*

*Controlling for gender, race/ethnicity, cancer stage, and cancer site

Discussion

- Combining hospital cancer registry data and electronic medical record data may be useful in identifying factors associated with receipt of cancer treatment

- Those who receive care for head and neck cancer in a safety-net health system in the US comprise a racially/ethnically diverse population

- A person's cancer stage and age may be associated with receipt of cancer treatment

- Possible explanations of findings include frailty of older adults and provider-patient decision making regarding aggressive cancer treatment in underserved populations

Lessons Learned: Advantages

- Provides opportunities to conduct research in head and neck cancer populations underrepresented in US clinical trials

- Provides important information about the influence of comorbidities and care provided prior to cancer diagnosis on patient outcomes during treatment

Lessons Learned: Challenges

- Can encounter poor data quality

- Lack of information about episodes of care that occur outside the integrated safety-net health system

- Emphasizes the need to accelerate data sharing across health care systems

Conclusion

■ Use of combined hospital cancer registry and electronic medical record data has potential to provide important quality of care and patient outcomes data for underserved, hard-to-reach head and neck cancer populations

■ Age and cancer stage may be associated with receipt of cancer treatment in safety-net institutions

■ More research and policy initiatives are needed to accelerate data sharing across both US and international health care systems

Acknowledgement