Comparison of Care in Hospital Outpatient Departments and Independent Physician Offices among Cancer Patients

Prepared for:
American Hospital Association
September 25, 2018

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answering today's health policy questions

Report Overview

- Study Background and Purpose
- Key Findings
- Overview of Study Approach
- Comparison of Patient Characteristics
- Conclusions
- Appendix: Data and Methodology

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STUDY BACKGROUND AND PURPOSE

Study Background and Purpose

- Patients receiving cancer treatment may receive care in an independent physician's office (IPO) or a hospital outpatient department (HOPD).
- Currently, Medicare pays different rates for the same service depending on the site of care.
- Congress is considering policy recommendations to reduce differential payments for services delivered in the two settings.

Study Background and Purpose

- Whether a payment differential is appropriate depends on differences between IPOs and HOPDs.
- It has been documented that HOPDs face greater regulatory requirements,[1] but less is known about the differences between the patients served in the two settings.
- This study aims to fill that gap by examining characteristics of Medicare cancer patients seen in HOPDs and IPOs.

1. American Hospital Association (2014). "Hospital Outpatient Department (HOPD) Costs Higher Than Physician Offices Due to Additional Capabilities, Regulations."

Research Question

How do Medicare patients with cancer cared for in HOPDs and IPOs differ?

- Demographics and socioeconomic status
- Severity and complexity of comorbid conditions
- Prior healthcare utilization

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KEY FINDINGS

Key Findings

- Compared to Medicare beneficiaries with cancer treated in IPOs, beneficiaries with cancer receiving care in HOPDs are more likely to be:
  - Under 65[1]
  - Non-white
  - Dual eligible
  - From lower-income areas
  - Burdened with more severe chronic conditions
  - Previously hospitalized
  - Cared for in an emergency department and have higher Medicare spending prior to receiving ambulatory care

1. Medicare Beneficiaries under 65 are individuals with certain disabilities, end-stage renal disease, or amyotrophic lateral sclerosis (ALS). (https://www.cms.gov/Medicare/Eligibility-and-Enrollment/OrigMedicarePartABEligEnrol/index.html)

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OVERVIEW OF STUDY APPROACH

Study Overview

- **Data Source**: 2010-2016 Medicare Inpatient, Outpatient, and Carrier Standard Analytical Files and Denominator files.
- **Identifying HOPD and IPO Patients:** A patient is considered an HOPD (IPO) patient in a given year if more than 50% of ambulatory care in that year is provided in HOPDs (IPOs).
- **Identifying Cancer Patients:** Patients with a principal diagnosis of cancer (Clinical Classification Software Codes: 11-45) in an HOPD or IPO visit claim are identified as cancer patients.

Study Question	Characteristics	Level of Analysis
How do Medicare patients cared for in HOPDs and IPOs differ?	• Demographics • Socioeconomic Status • Clinical Characteristics	• Patient Level
	• Prior Healthcare Utilization	• Claim Level

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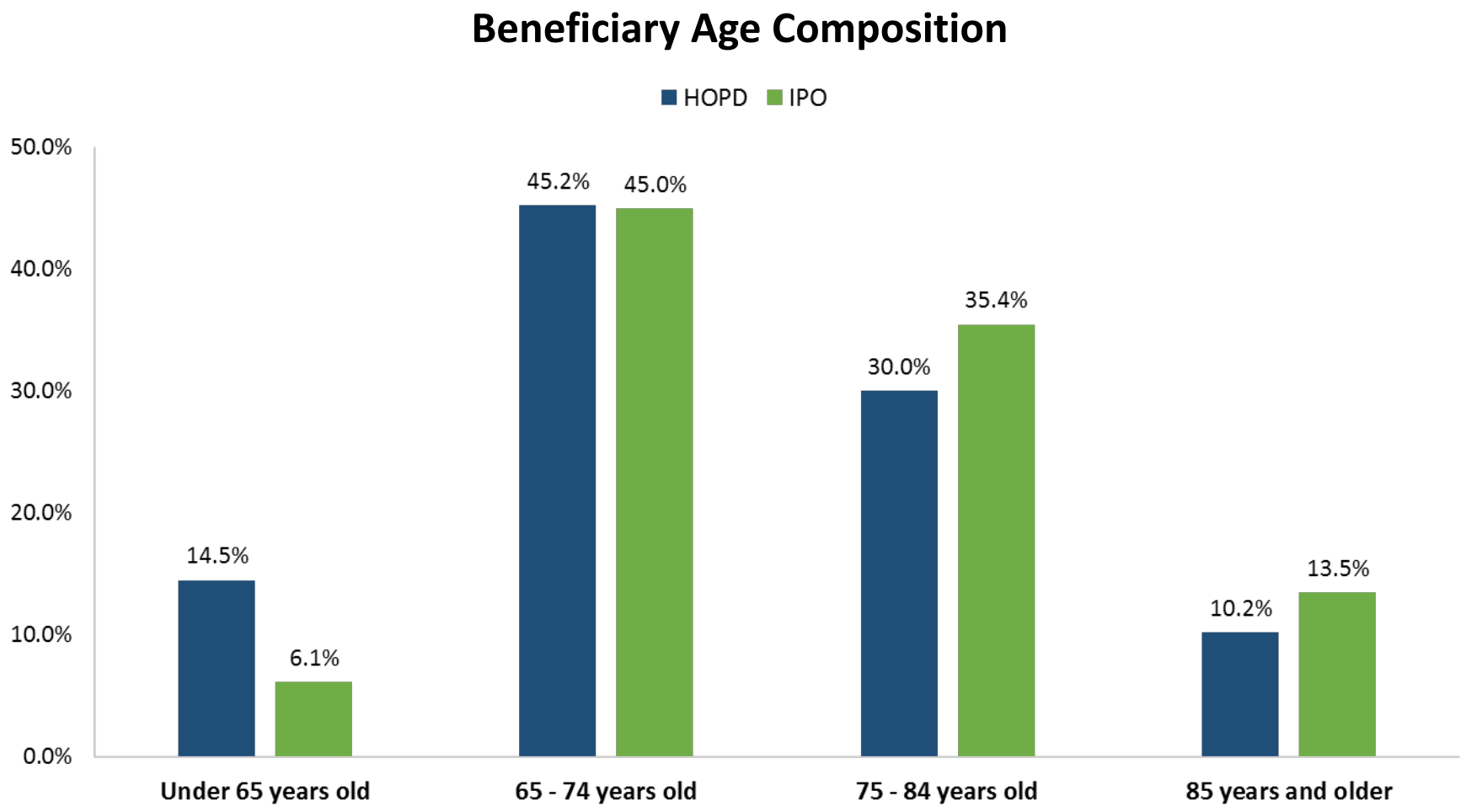
HOW DO MEDICARE CANCER PATIENTS CARED FOR IN HOPDS AND IPOS DIFFER?

Relative to beneficiaries with cancer seen in IPOs, beneficiaries with cancer seen in HOPDs are…

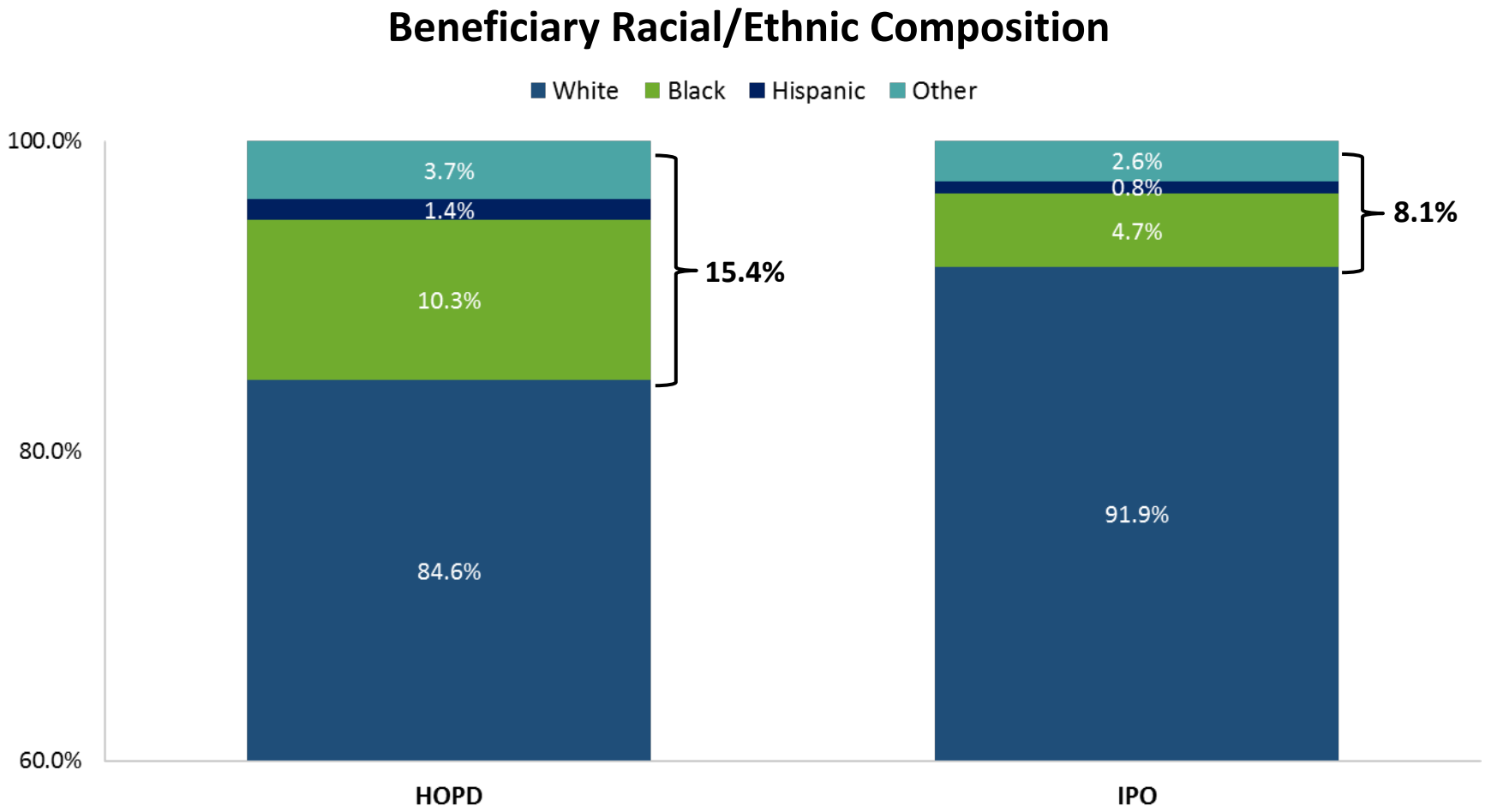
2.4x More Likely to be Under 65 Years Old[1] (14.5%/6.1%)



Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

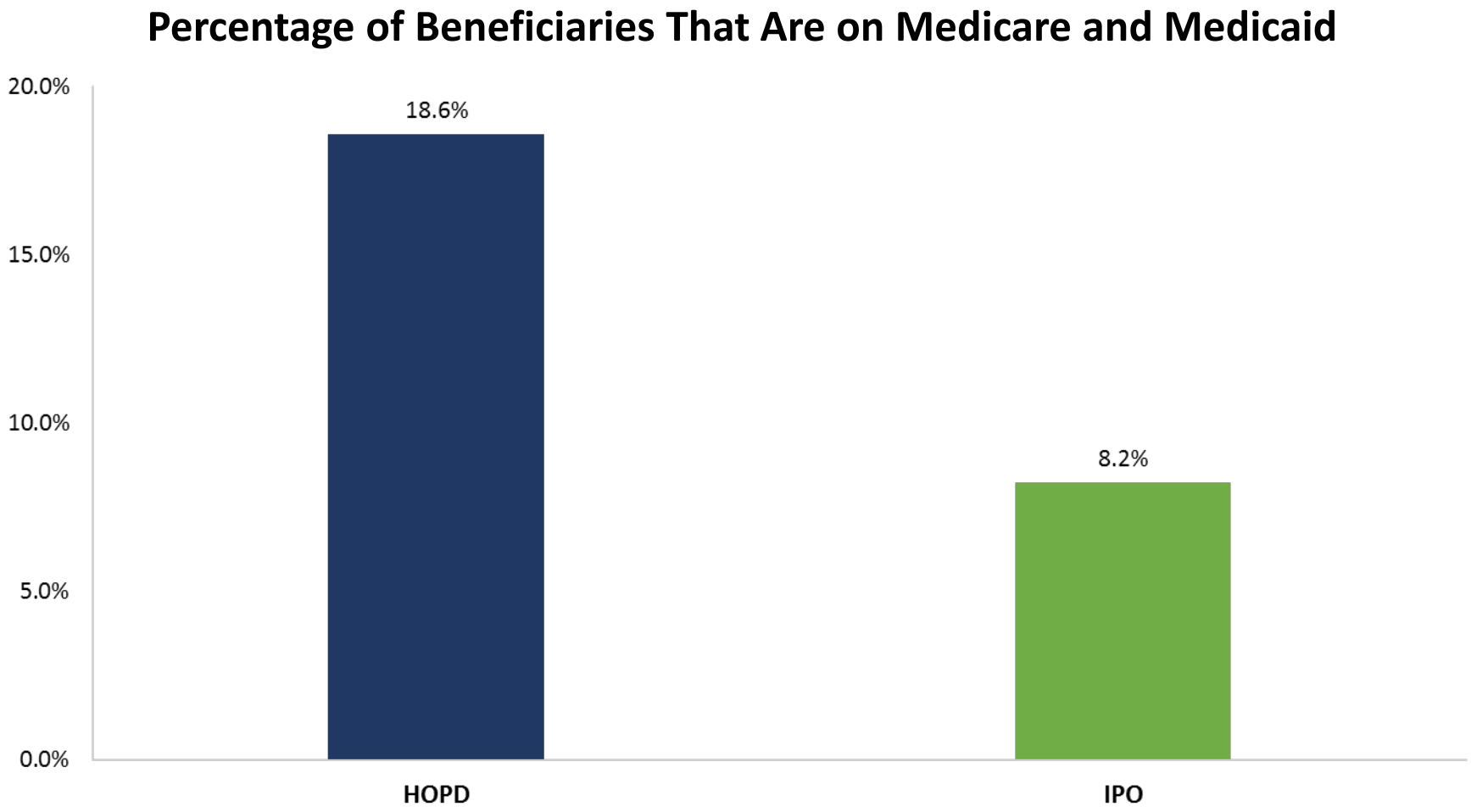
1. Medicare Beneficiaries under 65 are individuals with certain disabilities, end-stage renal disease, or amyotrophic lateral sclerosis (ALS). (https://www.cms.gov/Medicare/Eligibility-and-Enrollment/OrigMedicarePartABEligEnrol/index.html)

1.9x More Likely to be Non-White (15.4%/8.1%)



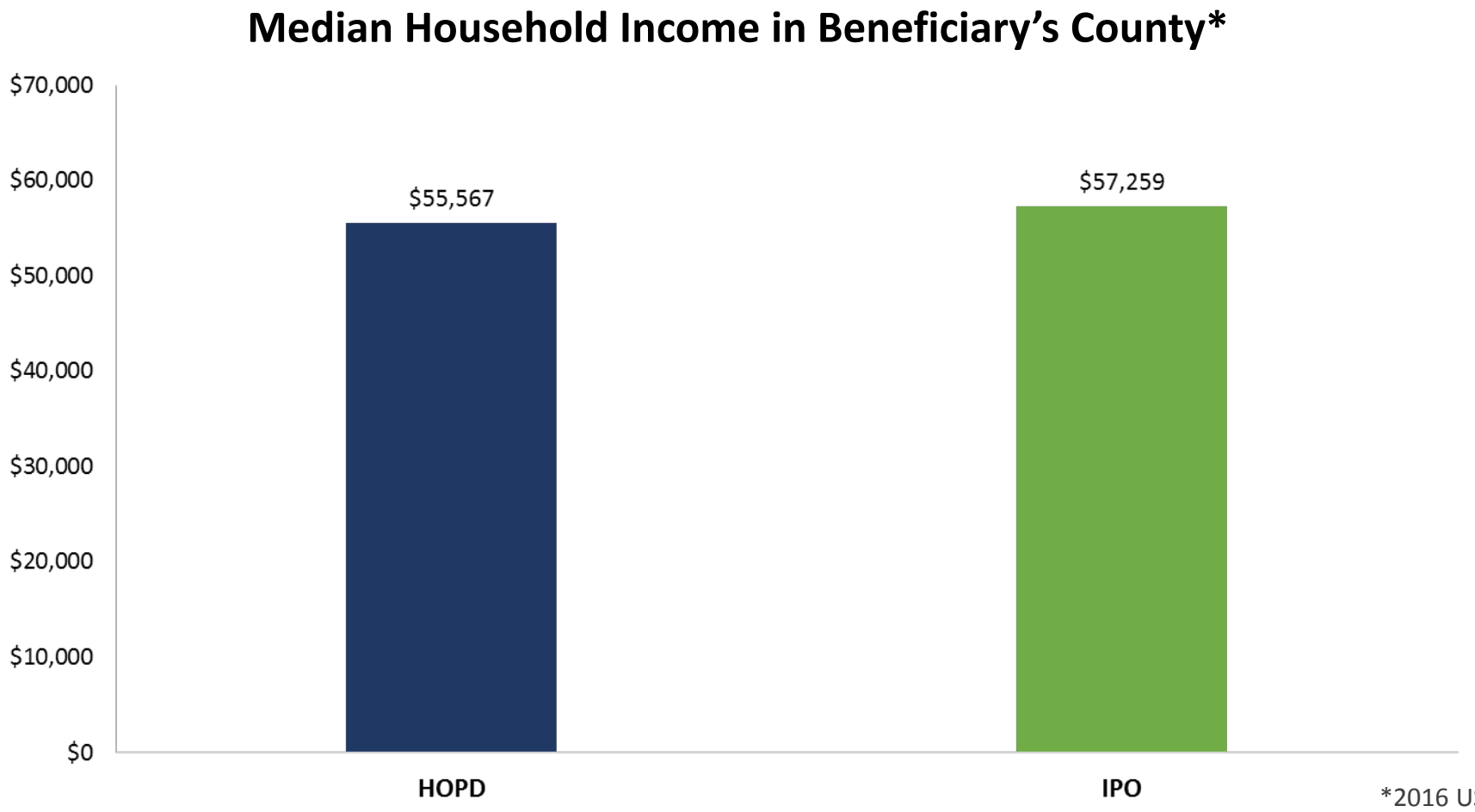
Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

2.3x More Likely to be Dual Eligible (18.6%/8.2%)



Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

On Average, From Lower Income Areas



Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

Severity and Complexity Measures

- We measured patient severity and complexity using three types of indicators: Charlson Comorbidity Index, number of complications/comorbidities (CCs) and major CCs (MCCs), and prior utilization of care.
- The Charlson Comorbidity Index is a measure of patient severity computed by assigning higher weights to more severe conditions in terms of their effect on mortality.
  - The Charlson Comorbidity Index includes 17 medical conditions that are found to be associated with 1-year mortality. A weight of 1 to 6 is assigned to each condition based on mortality risk, and weights are added across conditions to calculate total score.[1, 2]
  - The score is predictive of mortality, with 1-year and 10-year mortality rates greater than 50% for those with scores above 2. [1, 3]
- Prior utilization of care captures short term acute care hospital stays and emergency department visits in the 90 days preceding a HOPD or IPO visit.

[1]Charlson, M. E., Pompei, P., Ales, K. L., & MacKenzie, C. R. (1987). A new method of classifying prognostic comorbidity in longitudinal studies: development and validation. *Journal of Chronic Diseases*, *40*(5), 373-383.

[2]Quan, H., Sundararajan, V., Halfon, P. et al. (2005). Coding algorithms for defining comorbidities in ICD-9-CM and ICD-10 administrative data. Med Care. 2005 Nov;43(11):1130-9.

[3]Hall, W. H., Ramachandran, R., Narayan, S., Jani, A. B., & Vijayakumar, S. (2004). An electronic application for rapidly calculating Charlson comorbidity score. *BMC Cancer*, *4*(1), 94.

Medicare Patients with Cancer Seen in HOPDs Are Sicker

- The severity of chronic conditions as measured by the Charlson Comorbidity Score is higher for beneficiaries seen in HOPDs.
- A greater percentage of HOPD patients have CCs and MCCs.

Indicator	HOPD	IPO
Average Charlson Comorbidity Score	4.68	2.97
% with at least one CC	70%	54%
% with at least one MCC	24%	14%

Medical conditions captured in Charlson Score: myocardial infarction, congestive heart failure, peripheral vascular disorders, cerebrovascular disease, dementia, chronic pulmonary disease, rheumatic disease, peptic ulcer disease, mild liver disease, diabetes without chronic complication, diabetes with chronic complication, hemiplegia or paraplegia, renal disease, any malignancy (including lymphoma and leukemia, except malignant neoplasm of skin), moderate or severe liver disease, metastatic solid tumor, AIDS/HIV.

Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

Medicare Patients with Cancer Seen in HOPDs Have Higher Prior Emergency Department Use

Emergency Department Utilization 90 Days Prior to Visit by Setting

Emergency Department (ED) Use Prior to Visit	HOPD	IPO
Percent of HOPD/IPO Visits with a Prior ED Visit	26%	16%
Mean Number of ED Visits	0.40	0.22
Mean Number of ED Visits (Conditional on Having At Least 1 ED Visit)	1.55	1.37

Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

Medicare Patients with Cancer Seen in HOPDs Have Higher Prior Acute Care Hospital Use

Short Term Acute Care Hospital Utilization 90 Days Prior to Visit by Setting

Short-Term Acute Care Hospital (STCH) Use Prior to Visit	HOPD	IPO
Percent of HOPD/IPO Visits with a Prior STCH Stay	19%	10%
Mean Number of STCH Stays	0.25	0.12
Mean Number of STCH Stays (Conditional on Having At Least 1 STCH Stay)	1.37	1.22
Total STCH Days (Conditional on Having At Least 1 STCH Stay)	7.29	5.42
Total STCH payments (Conditional on Having At Least 1 STCH Stay)	$21,397	$14,964

* 2017 USD

Source: KNG Health Consulting, LLC analysis of 2010 -2016 Medicare claims data.

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CONCLUSIONS

Conclusions

- Our findings suggest key differences between Medicare beneficiaries with cancer treated in HOPDs and IPOs.
- Medicare beneficiaries with cancer primarily treated in HOPDs as compared to IPOs are more likely to
  - be under 65[1], non-white, and dual eligible.
  - come from communities with lower income.
  - have more severe chronic conditions and higher prior utilization of hospitals and emergency departments.

1. Medicare Beneficiaries under 65 are individuals with certain disabilities, end-stage renal disease, or amyotrophic lateral sclerosis (ALS). (https://www.cms.gov/Medicare/Eligibility-and-Enrollment/OrigMedicarePartABEligEnrol/index.html)

Conclusions

- Patients of higher complexity may require a greater level of care than patients of lower complexity.
- To the extent that these differences result in variations in the cost of care, site neutral payments may have adverse effects on patient access to care.

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APPENDIX: DATA AND METHODOLOGY

Data and Study Population

- 2010-2016 Standard Analytical File of 5% sample of Medicare beneficiaries. Claims include:
  - Inpatient
  - Outpatient
  - Professional services (Carrier file)
- The patient population consists of Medicare beneficiaries who fulfill the following criteria:
  - Had at least one HOPD or IPO visit between Jan. 1, 2011 and Dec. 31 2016.
  - Had continuous enrollment in Medicare FFS Part A and Part B in a given year and three months prior to the year.
  - Had principal diagnosis related to cancer in one of the HOPD or IPO claims in a given year (Clinical Classification Software Codes 11-45).

Identification of HOPD and IPO Patients

- HOPD visits are identified using:
  - Outpatient claims, excluding non-hospital claims, emergency department visit claims, and observation stay claims
  - Carrier claims with place of service code of “22=Outpatient Hospital” or “19=Off-campus Outpatient Hospital”
- IPO visits are identified using:
  - Carrier claims with place of service code of “11=Office”
- Identification of HOPD and IPO patient populations:
  - A patient is considered an HOPD (IPO) patient in a given year if more than 50% of care in that year is provided in HOPDs (IPOs).
  - Only HOPD claims for HOPD patients and IPO claims for IPO patients are included in the analysis.

Methodology: Descriptive Analysis

- Demographic, socioeconomic, and clinical characteristics were examined at the beneficiary level.
- **Demographic characteristics**: Obtained from the Medicare Denominator File.
- **Socioeconomic characteristics of beneficiary's county of residence**: U.S. Census estimates of county-level characteristics based on 2012-2016 American Community Survey are used.
- **Clinical characteristics:** Charlson comorbidity index and number of CCs and MCCs are measured using diagnostic information from all inpatient, outpatient, and carrier claims that a patient had in a given year.

Methodology: Descriptive Analysis

- Prior utilization was examined at the visit level.
- **Prior utilization within 90 days prior to HOPD or IPO visit**
  - Emergency Department utilization: Emergency Department use is identified by revenue center codes 0450-0459, and 0981 in outpatient and inpatient claims files.
  - Short-term acute care hospital utilization

Methodology: Statistical Analysis

- Differences between HOPDs and IPOs in terms of patient:
  - T-tests were conducted to assess differences in average characteristics between the two settings using data from all years (2011-2016)
- All differences between HOPDs and IPOs presented in this report are statistically significant at the 0.1% level.