

Quality of Care of Medicare- Medicaid Dual Eligibles with Diabetes

James X. Zhang, PhD, MS
The University of Chicago

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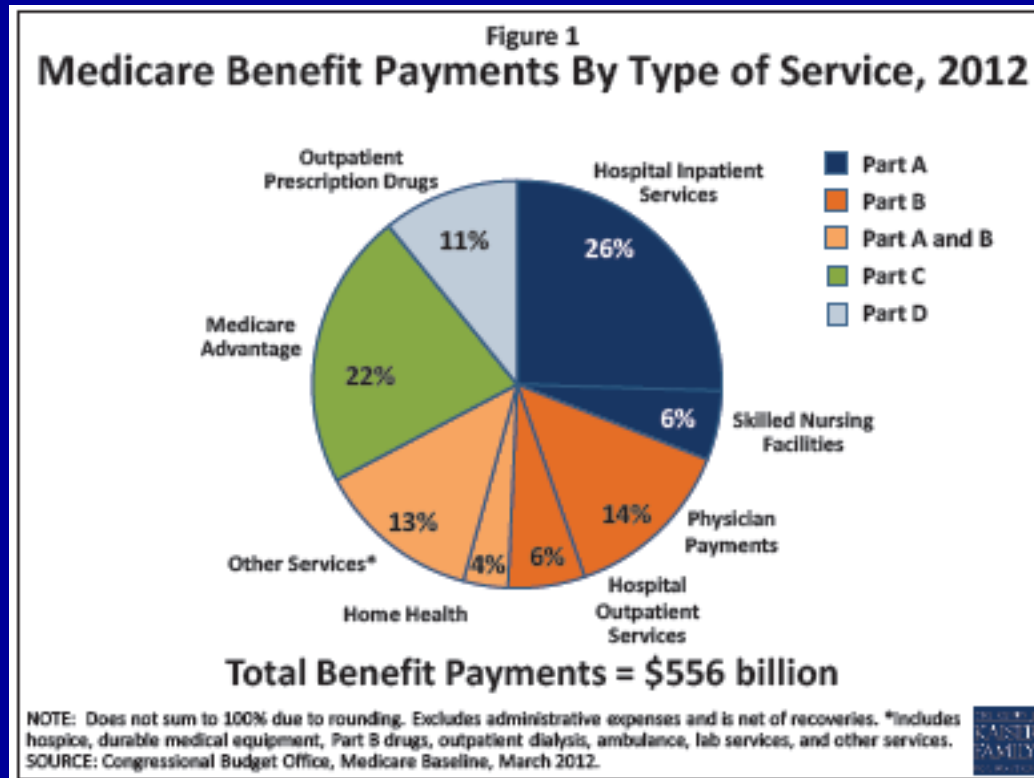
Outline

- Background
 - Medicare
 - Dual eligibles
 - Diabetes mellitus
 - Quality Chasm
- Previous researches on the subject by the team
 - Disparities
 - Quality of diabetes care for dual eligibles
 - Population health
 - Resource utilization
- Motivation and objectives
 - Expanding coverage and care improvement
 - Continuous improvement for quality
- Data and methods
- Preliminary results
- Discussion and future directions

Background (1): Medicare

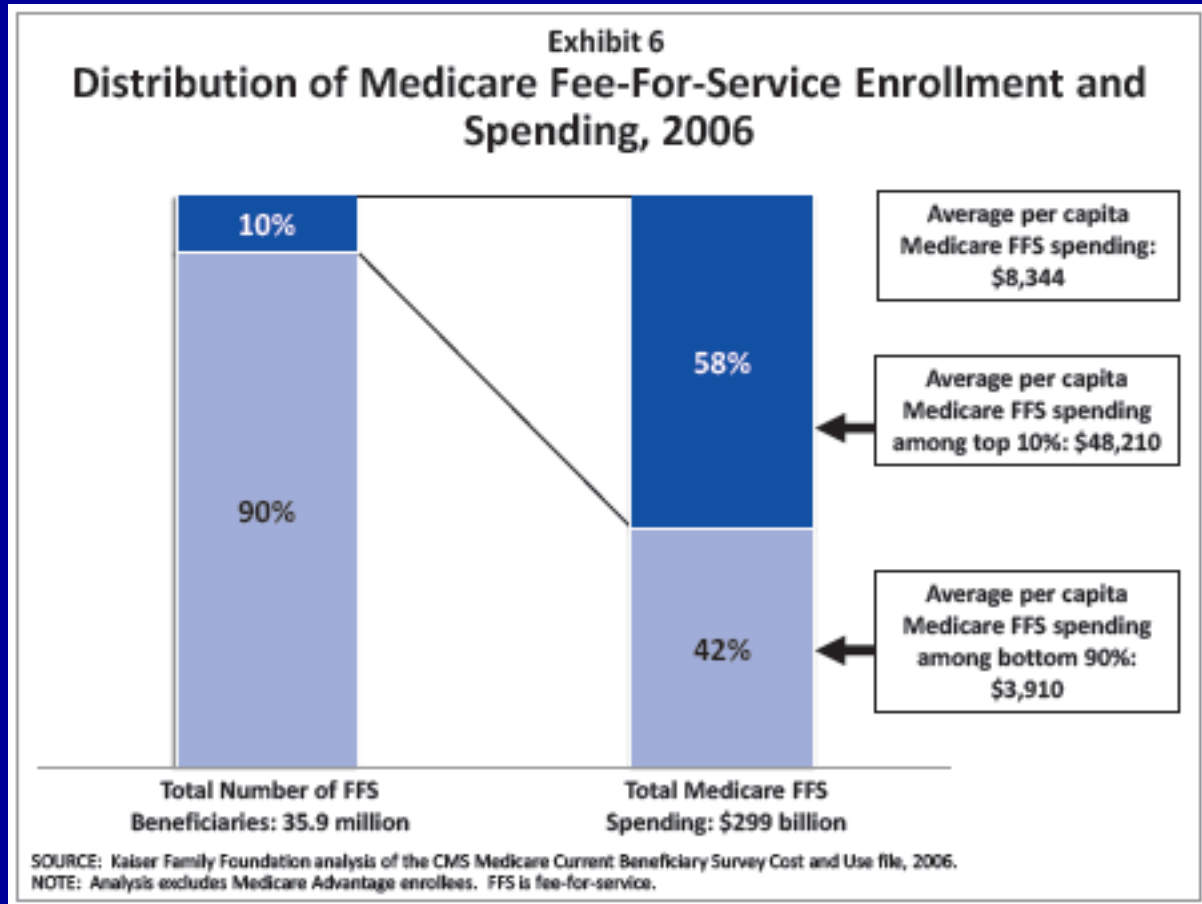
- The largest public health insurance program in the U.S.
 - 50 million elderly and disabled Americans
 - 1/6 of federal budget
 - 1/5 of national health spending
 - \$560 billion in 2011, projected \$1.1 trillion in 2022
- Extensive coverage, complex rules
 - Covering a wide range of institutional care, physician services, medical equipment and Rx
 - Part A, B, C & D
 - Complex rules governing disbursement and reimbursement
 - Large size of claims/data elements, multi-layered data structure
- Evolving
 - Projected to account for 1/5 of federal budget in 2022
 - ACA includes \$716 billion in net Medicare spending reduction
 - ACOs, Medical Homes, Bundled Payments, and value-based purchasing initiatives

Background (1): Medicare: Distribution of Spending by Service Type

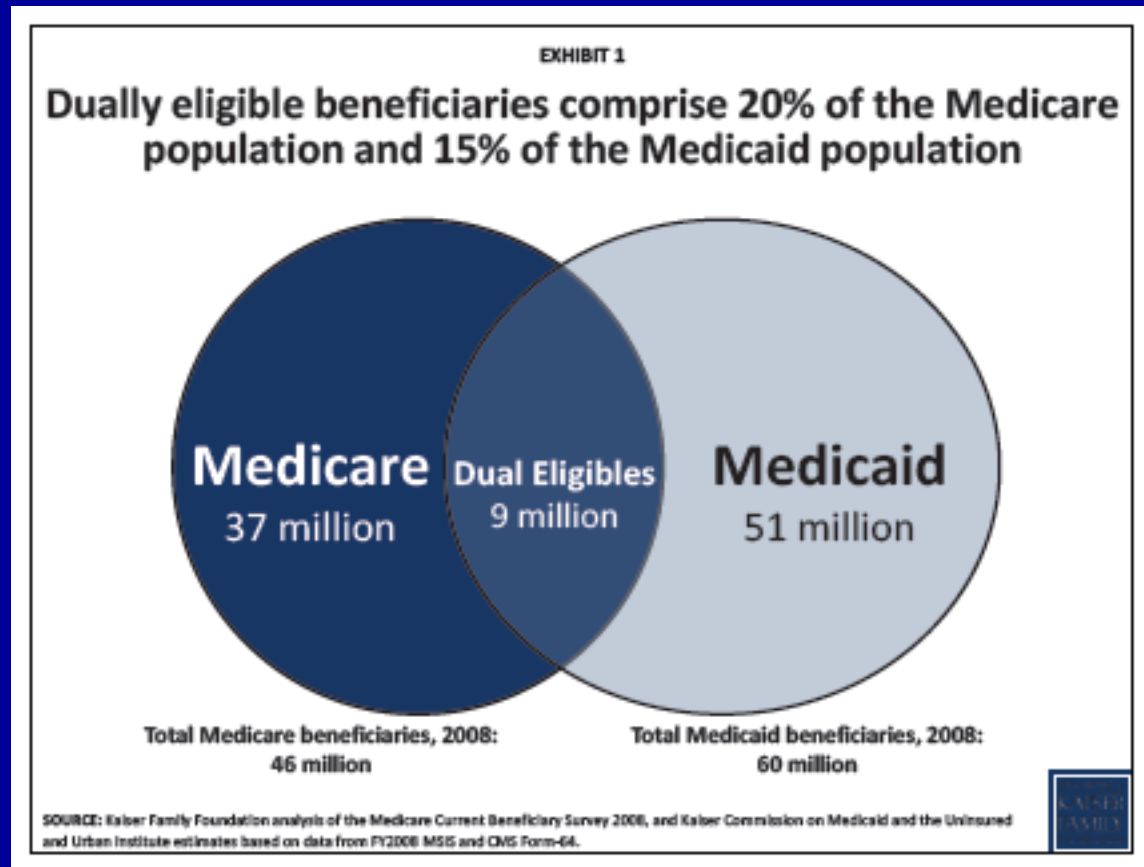


Kaiser Family Foundation: Medicare Spending and Financing 2012

Background (1): Medicare: Concentration of Resource Use



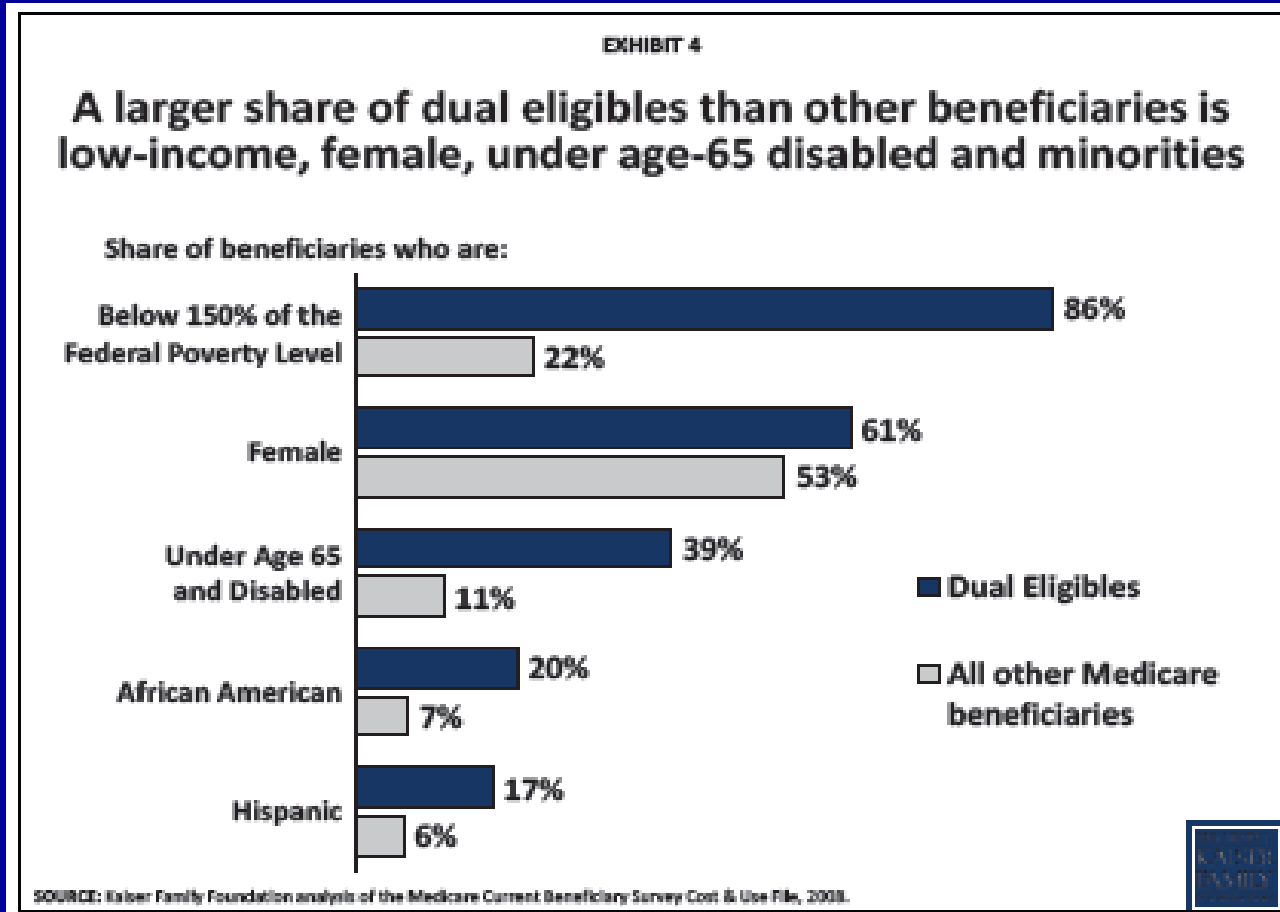
Background (2): Dual Eligibles



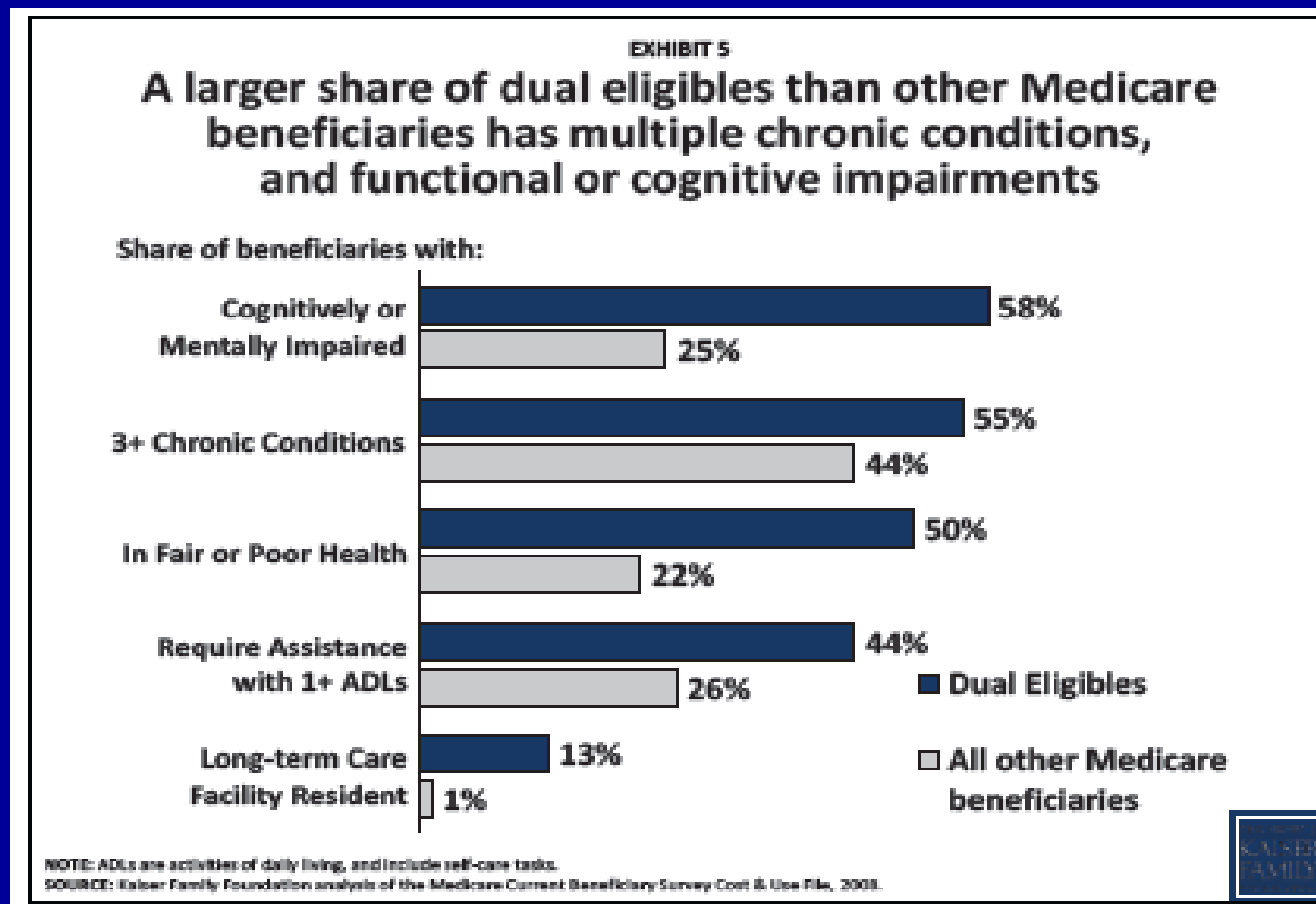
Background (2): Dual Eligibles

- Overall spending
 - 20% of the Medicare population, but 31% of Medicare spending
 - 15% of the Medicaid population, but 39% of Medicaid spending
 - Total Medicare spending for dual eligibles in 2008 was \$132 billion
- Per capita spending
 - Average Medicare spending for dual eligibles was 1.8 times higher for duals than others on Medicare (\$14,169 vs. \$7,933)
 - 8% incurred \$40,000 or more in Medicare expenditure
- Health status
 - A larger share of dual eligibles than others on Medicare were
 - in fair/poor health (49% vs. 22%)
 - had cognitive/mental impairments (58% vs. 25%)
 - had functional impairments (44% vs. 26%)
 - lived in facilities (13% vs. 1%)
- Hospital use
 - Had higher hospitalization rates than others on Medicare (26% vs. 18%)
 - More likely to have 2 or more hospitalizations (11% vs. 6%)

Background (2): Dual Eligibles



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Background (2): Dual Eligibles

- Medicare-Medicaid coordination of benefits
 - Medicare coverage for Part A, B, C, or D
 - Medicaid pays for some out-of-pocket medical expenses
 - Part A, B, and C premiums, deductible, coinsurance, and/or copayment
 - Medicare as primary payer
- Dual eligible Medicare beneficiary groups
 - Qualified Medicare Beneficiary (QMB) (<100% FPL, <3 times SSI Limit, Part A, B, C)
 - QMB Plus (+ all benefits available under the State Medicaid plan)
 - Specified Low-Income Medicare Beneficiary (SLMB) (100-120% FPL, Part B)
 - SLMB Plus (+ all benefits available under the State premiums)
 - Qualifying individual (QI) (Part A, 120-135% FPL, <3 times SSI limit, Part B)
 - Full Benefit Dual Eligible (FBDE) (categorically or optional coverage groups, does not meet the income of resource criteria for a QMB or an SLMB)
 - Qualified Disabled and Working Individual (QDWI) (<200% FPL, returning to work, Part A only)

Background (3): Diabetes Mellitus

■ Prevalence

- 18.8 million people diagnosed
- 7.0 million people undiagnosed
- 79 million people prediabetes
- In the age group of 65 years or older, 10.9 million (26.9%) have diabetes

■ Complications

- Adults with diabetes have heart disease death rates 2-4 times higher
 - The risk of stroke is 2-4 time higher
 - Heart disease was noted on 68% of diabetes-related death certificates (65+)
 - Strokes was noted on 16% of diabetes-related death certificates (65+)
 - 67% had blood pressure greater or equal to 140/90 mmHg or used Rx
 - A leading cause of new cases of blindness among adults
 - The leading cause of kidney failure, accounting for 44% of new cases
 - 60-70% have mild to severe forms of nervous system damage
 - 60-70% of nontraumatic lower-limb amputation occur in people with diabetes
- A leading cause of mortality, morbidity, and disabilities (\$245 billion in 2011)

Background (4): Quality Chasm

- **Crossing the Quality Chasm: A New Health System for the 21st Century (IOM 2001)**
 - The U.S. health care delivery system does not provide consistent, high quality medical care to all people
 - An urgent call for fundamental change to close the quality gap
 - Performance expectations
 - To promote evidence-based practice
 - To better align incentives inherent in payment and accountability with improvement in quality

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 - Disparities
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- Motivation and objectives
 - Three simultaneous aims for care improvement
 - Continuous improvement for quality
- Data and methods
- Preliminary results
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Previous Researches by the Team

(1): SES, Disparities and Outcomes

- Compared with white patients
 - African-American patients had worse health perception and lower quality of care
 - They were more likely to visit the emergency department and had fewer physician visits per year
 - African-Americans had higher reimbursement for home health services, but total reimbursement was similar after case-mix adjustment

Chin, Zhang & Merrell 1998

Previous Researches by the Team

(2): Dual Eligibles

- Those without insurance were the least likely to meet the quality-of-care measures
- Medicaid patients had a quality of care similar to those with no insurance
 - 27 Community health centers
 - 17 states
 - Not nationally representative
 - Care setting
 - Diabetes population
 - In 2002

Zhang, Huang, Drum et al. 2007

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Motivation and Objectives: Expanding Coverage and Quality of Care

For those patients with low-income and complex medical needs, is generous coverage sufficient to ensure high-quality of care for them?

- Expanding coverage
- Generous coverage and quality of care
- Continuous improvement

Specific Aims

- Using a nationally-representative sample, to compare dual eligibles with other Medicare beneficiaries in:
 - Quality of care
 - Population health
 - Resource utilization

Methods: Data

- Medicare Current Beneficiary Survey (MCBS), a nationally representative sample of Medicare beneficiaries, 2007
- 2,467 patients with diabetes in the 2007
- Claim based: ICD-9-CM 250.00-250.91
 - searching through Part A (inpatient, skilled nursing facilities, home health care, and hospice) and Part B claims (Carriers, hospital outpatient and DME)
 - at least 1 inpatient claim or 2 other claims or a combination of these two
- Excluding those in managed care

Methods: Identification and Categorization of Medicare Beneficiaries by Insurance Status

- Many types of insurance coverage, and one beneficiaries can have multiple
- Hierarchical three mutually exclusive groups
 - Dual eligibles
 - Medicare with private insurance
 - Medicare without any type of other private or Medicaid insurance

Methods: Outcomes Measures (1): HEDIS Measure and Preventive Care

- NCQA HEDIS measures
 - ophthalmologic visit
 - lipid testing
 - glycosylated hemoglobin measurement
- Preventive care
 - Mammography for women
 - influenza vaccination

Methods: Outcomes Measures (2): Resource Utilizations

- Medical resources use:
 - annual physician visits
 - emergency room services
 - inpatient admissions

Methods: Outcomes measures (3): Patient Satisfaction

- Patient satisfaction
 - satisfaction with providers
 - Satisfaction with system
- Composite variables
- Based upon 18 questionnaires in the survey
- Categorized using principal component analysis
- To improve the efficiency and reduce multiple testing

Methods: Health Status

- Diabetes complications (nephropathy, retinopathy, neuropathy, peripheral circulatory)
- Activities of Daily Living (ADL)
- Instrumental Activities of Daily Living (IADL)
- General health perception
- Charlson comorbidity score

Methods: Other Adjusters in Multivariate Regressions

- Age
- Gender
- Race
- Education
- Family composition

Preliminary Results: Patients Characteristics

Strata	N Sample	(%)	Age	(SD)	N \geq 85 years of age	(%)	N Female	(%)	N Education \geq 12 years	(%)	N lives alone	(%)
Total	2,467	(100)	76.7	(6.9)	380	(15)	1,348	(55)	1,700	(69)	752	(31)
Medicare only	401	(16)	76.2	(6.9)	53	(13)	217	(54)	262	(65)	111	(28)
Dual eligible	387	(16)	76.6	(7.3)	65	(17)	271	(70) ¶	122	(32) ¶	158	(41)¶
Medicare with private insurance	1,679	(68)	76.8	(6.9)	262	(16)	860	(51)	1,616	(78)	483	(29)

Health perception scores from 1 to 5: "In general, compared with other people your age, would you say that your health is excellent (=1), very good (=2), good (=3), fair (=4), poor (=5)?"

§ $p \leq 0.05$. Results from linear regression using Medicare with private insurance as reference.

¶ $p \leq 0.05$ Results from logistic regression using Medicare with private insurance as reference.

Preliminary Results: Patients Health Status

Strata	N Sample	(%)	Charlson Comorbidity Index	(SD)	Mean number of complications	(SD)	N patients with at least 1 complication	(%)	Mean ADL score	(SD)	N ADL deficient	(%)
Total	2,467	(100)	1.28	(1.66)	1.59	(0.77)	1,780	(72)	0.87	(1.43)	945	(38)
Medicare only	401	(16)	1.30	(1.64)	1.44 §	(0.69)	254	(63)¶	0.81	(1.40)	146	(36)
Dual eligible	387	(16)	1.36	(1.67)	1.70 §	(0.79)	279	(72)	1.51 §	(1.80)	216	(56)¶
Medicare with private insurance	1,679	(68)	1.26	(1.67)	1.60	(0.78)	1,247	(74)	0.74	(1.30)	583	(35)

ADL and IADL scores from 1 to 6 ; the greater the number, the poorer functioning status

Health perception scores from 1 to 5: "In general, compared with other people your age, would you say that your health is excellent (=1), very good (=2), good (=3), fair (=4), poor (=5)?"

§ $p \leq 0.05$. Results from linear regression using Medicare with private insurance as reference.

¶ $p \leq 0.05$ Results from logistic regression using Medicare with private insurance as reference.

Results: Patients Health Status (cont'd)

Strata	N Sample	(%)	Mean IADL score	(SD)	N IADL deficient	(%)	Mean Health perception score	(SD)	N Excellent to good health perception	(%)
Total	2,467	(100)	1.16	(1.66)	1,171	(47)	3.05	(1.07)	1,658	(67)
Medicare only	401	(16)	1.15 §	(1.66)	193	(48)¶	3.09 §	(1.13)	251	(63)¶
Dual eligible	387	(16)	2.14 §	(2.00)	271	(70)¶	3.43 §	(1.00)	199	(51)¶
Medicare with private insurance	1,679	(68)	0.94	(1.48)	707	(42)	2.95	(1.05)	1,208	(72)

ADL and IADL scores from 1 to 6 ; the greater the number, the poorer functioning status
 § $p \leq 0.05$. Results from linear regression using Medicare with private insurance as reference.

¶ $p \leq 0.05$ Results from logistic regression using Medicare with private insurance as reference.

Preliminary Results: HEDIS Measures and Preventive Care

Strata	N Sample	(%)	HbA1c	(%)	Ophthalmic visit	(%)	Lipid	(%)	Influenza shot	(%)	Mammogram	(%)
Total	2,467	(100)	1,365	(55)	1,309	(53)	1,395	(57)	1,938	(79)	670	(50)
Medicare only	401	(16)	205	(51)	163	(41)¶	216	(54)	298	(74)¶	99	(46)¶
Dual eligible	387	(16)	219	(57)	184	(48)¶	210	(54)	273	(71)¶	102	(38)¶
Medicare with private insurance	1,679	(68)	941	(56)	962	(57)	969	(58)	1,367	(81)	469	(55)

¶ $p \leq 0.05$ Results from logistic regression using Medicare with private insurance as reference.

Resource utilization by insurance status

Strata	N Sample	(%)	Hospitalized	(%)	Physician visits per year	(SD)	Emergency visits	(%)
Total	2,467	(100)	700	(28)	10.6	(8.29)	827	(33)
Medicare only	401	(16)	113	(28)	9.0 §	(7.80)	146	(36)¶
Dual eligible	387	(16)	128	(33)¶	9.7 §	(8.70)	161	(41)¶
Medicare with private insurance	1,679	(68)	459	(27)	11.1	(8.30)	520	(30)

‡ $p \leq 0.05$. Results from generalized linear model with log-link and gamma distribution using Medicare with private insurance as a reference.

§ $p \leq 0.05$. Results from linear regression using Medicare with private insurance as reference.

¶ $p \leq 0.05$ Results from logistic regression using Medicare with private insurance as reference.

Preliminary Results: Patient Satisfaction

Strata	N Sample	(%)	Mean Patient satisfaction with system	(SD)	Mean Patient satisfaction with doctor	(SD)
Total	2,467	(100)	4.99	(1.07)	7.64	(3.02)
Medicare only	401	(16)	4.98	(1.12)	7.84	(2.87)
Dual eligible	387	(16)	5.11 §	(1.18)	8.30 §	(2.97)
Medicare with private insurance	1,679	(68)	4.97	(1.03)	7.44	(3.05)

Satisfaction with the system scores from 1 to 6; the greater the number, the more satisfied they were.

Satisfaction with doctor scores from 1 to 12; the greater the number, the more satisfied they were.

§ $p \leq 0.05$. Results from linear regression using Medicare with private insurance as reference.

¶ $p \leq 0.05$ Results from logistic regression using Medicare with private insurance as reference.

Independent Correlates of HEDIS Measure and Preventive Care*: Adjusted Odds Ratios (95% Confidence Interval)

Quality of Care Measure	Medicare only		Dual eligible	
Hemoglobin A1c	-	-	-	-
Ophthalmic visits	0.55	(0.44-0.69)	-	-
Lipids	-	-	-	-
Influenza vaccination	0.72	(0.55-0.94)	0.69	(0.51-0.94)
Mammogram (women)	0.7	(0.51-0.96)	0.65	(0.46-0.90)

*Logistic regression adjusting for patient's age, gender, race, education, living area, family composition, ADL, IADL, general health perception, and Charlson Comorbidity Index, with receipt of the particular quality of care measure as the dependent variable.

Adjusted odds ratios shown when $p \leq 0.05$.

Reference for insurance type comparison is patients of Medicare with private insurance.

Conclusion and Discussions

- Dual eligibles had lower educational attainment and were more likely to live alone
 - Literacy
 - Social support
 - Navigating the complex care system

Conclusion and Discussion (cont'd)

- High burden of illness on multiple dimensions
 - Diabetic complications
 - ADL deficiencies
 - IADL deficiencies
 - General health perceptions
- Complexity of care
- Care coordination is a challenge

Conclusion and discussion (cont'd)

- Despite poorer health and generous insurance coverage, dual eligibles had fewer physician visits
- Instead of less expensive ambulatory care and preventive care, dual eligibles were more likely to use more expensive emergency care and inpatient care

Conclusion and Discussion (cont'd)

- However, dual eligibles had higher satisfaction with the provider and system

Conclusion and Discussion (cont'd)

- What are the potential barriers?
 - Generous insurance coverage
 - Attitudinal, cultural and behavioral
 - Physician incentive
 - Coordination for the complex medical needs

Limitations and Future Direction

- Long-term outcomes
- Longitudinal progress not measured
- Care models are evolving
- Geographic variation and heterogeneity
- The new Federal Coordinated Health Care Office

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Thank you