

Incidence, Costs of Care, and Mortality of Medicare Beneficiaries Diagnosed with Cancer of Unknown Primary Origin

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Background & Objectives

Cancer of unknown primary origin (CUP) occurs when metastatic cancer is found but the site of origin cannot be determined.

For CUP, no studies have been conducted using claims databases to evaluate incidence, mortality, healthcare utilization, and costs to third-party payers.

This study analyzed expenditure outcomes and mortality in Medicare patients with a CUP diagnosis.

Methods

Retrospective, longitudinal claims analysis using data from the Centers for Medicare and Medicaid Services (CMS).

§ Standard Analytical File (2002 - 2004)

§ 5% Random Beneficiary Sample

Identified patients who were cancer-free based on claims data in 2002 and subsequently had a claim with a CUP diagnosis (ICD-9-CM 199.0 or 199.1) in 2003.

Mortality and Medicare payments for all services were evaluated for four consecutive quarters following the first cancer diagnosis.

Results

Fig 1. Patients & Demographics

- 1) Patients who had a claim history
- 2) No claims in 2002 with a diagnosis code for cancer (ICD-9-CM 140 - 240)
- 3) A claim with a cancer diagnosis in 2003

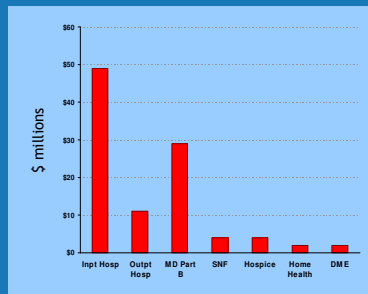
n=173,108

Cancer patients in 2003 for whom at least one claim including ICD-9-CM 199.0 or 199.1

n=2,664 (5% sample)

80% Caucasian
60% Female
Avg age range 70-79
Total expenditures ~\$101 million
Overall mortality at end of four quarters following the quarter of initial cancer diagnosis = 47%

Fig 4. Medicare Payments by Provider Type



Quarter of New Cancer Diagnosis and Four Quarter Follow-up

Fig 2. National CUP Projections based on Medicare Sample

	5% Medicare Beneficiary Sample	Projected Medicare National Total
Newly Diagnosed CUP Patients in 2003	2,664	53,280
Total Medicare Payments	\$101 million	\$2 billion

Fig 5. Mean Medicare Payments by CUP Patient Groups

	Only CUP in Baseline Qtr	CUP and Other Cancer in Baseline Qtr	Only Other Cancer in Baseline Qtr, then CUP
Inpatient	\$13,255	\$17,458	\$21,188
Outpatient	\$2,090	\$3,517	\$5,181
Physician Office/Lab	\$5,416	\$10,704	\$13,132
Sum	\$20,761	\$31,679	\$39,501

Mean Annual Medicare Payment Per Patient ~\$38,000

Fig 3. Other Cancer Diagnosis Codes and Mortality During the Study Period

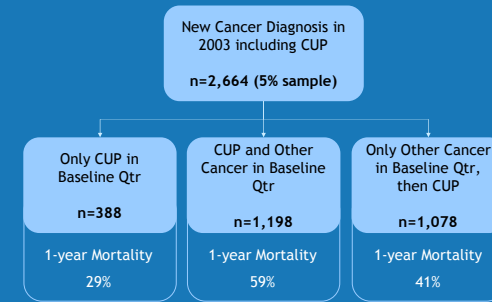


Fig 6. Mortality and Medicare Payments by CUP Patient Groups (5% Sample)

Cancer Diagnosis Codes in Baseline Quarter	Subsequent Cancer Diagnosis Codes Over Four Quarters	All Cause Mortality During Study	Mean Inpt/Outpt Hospital and MD Payments
Only CUP in Baseline Qtr (n=388)	Other Cancer Diagnosis (n=111)	20%	\$23,476
	CUP Only or None (n=277)	33%	\$19,673
CUP and Other Cancer in Baseline Qtr (n=1,198)	CUP and Other Cancer (n=194)	59%	\$48,946
	Other Cancer Only (n=532)	45%	\$37,644
	CUP Only or None (n=472)	74%	\$17,860
Only Other Cancer in Baseline Qtr, then CUP (n=1,078)	CUP and Other Cancer (n=1,006)	41%	\$40,793
	CUP Only (n=72)	40%	\$21,358

Conclusions

In 2003, we used a 5% sample to identify 2,664 Medicare patients who did not have a cancer claim in 2002 that subsequently had a CUP diagnosis. This projects to 53,000 new CUP patients in the Medicare group each year.

Medicare payments averaged \$38,000 per CUP patient per year which extrapolates to \$2 billion nationwide.

Of patients who had a new CUP diagnosis in 2003, one year mortality was 47% following the quarter in which any cancer was first identified on a claim.

These terrible outcomes may be a surrogate for advanced disease. If one could rapidly identify the tumor of origin and apply site specific therapies, there is a possibility that the dismal mortality rate and use of Medicare resources might be improved.