

Medical Care Cost of Medicare/Medicaid Beneficiaries with Vision Loss



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Background

Blindness and visual impairment are among the 10 most common causes of disability in the United States and are associated with reduced life expectancy as well as quality of life.

Of the US population over age 40:

- an estimated 937,000 Americans, 0.78%, are legally blind 2.4 million Americans (1.98%) had low vision, based on an analysis of 2000 census data by Congdon et al.
- By 2020, the prevalence of blindness will increase to 1.6 million (1.1%), while the prevalence of low vision will increase to 3.9 million (2.5%).

Estimating differential use of healthcare resources based on diagnosis or functional limitations has great potential for planning of resource need or allocation as well as the economic impact of changes in population morbidity

NYS Hospital Utilization by Patients with Visual Impairment

Previously, we reported on the contribution of visual impairment to average length of stay (ALOS) within inpatient facilities. ALOS was an analog for our present focus – healthcare cost.

NYS Hospital Utilization by Patients with Visual Impairment

	No Visual Impairment		Visual Impairment		ALOS Diff.
	No.	ALOS	No.	ALOS	
Multivariate Analysis-adjusted	1,961,094	8.6	5,739	11.4	2.4

Vision Loss Comorbidity

- Vision loss contributes significantly to falls, fractures and restrictions in mobility
- Among females, bilateral vision loss is associated with an increase in all-cause mortality and reported vision impairment is an independent predictor of increased mortality. Lee et al.

The impact of vision loss on healthcare utilization and costs has been understudied and gaps remain in understanding the impact of vision loss impact on healthcare delivery, utilization, and cost.

The Present Study

Do current reimbursement methodologies used by Medicare properly estimate and reimburse healthcare costs to patients with vision loss?

Sample (n=3,372)

We used the public use data set available from the National PACE Association

PACE serves individuals who are:

- age 55 or older and eligible for Medicaid & Medicare
- certified to need nursing home care
- are able to live safely in the community at the time of enrollment

Method

- Vision loss was defined, by PACE, as *cannot see at all or sees some light and shadows but not obstacles in path*
- HCC risk adjustors were calculated using diagnoses from inpatient admissions
- The CMS-HCC risk adjusted model was applied

Results

	N	Relative Risk
All Enrollees	3,372	1.0
Vision Impaired	107	1.097
Non-Vision Impaired	3,265	.994
Vision Impaired non-institutionalized	91	1.131
Vision impaired Institutionalized	16	.91
Non-Vision Impaired Institutionalized	463	.892
Non-vision impaired non-institutionalized	2,802	1.004

Discussion

- Among PACE members residing in institutions, vision loss has little effect on their healthcare cost risk
- Among non-institutionalized PACE members, vision loss significantly increases their risk for incurring excess costs – those outside the reimbursement methodology - by about 13%.

Conclusion

We suggest, cautiously, that the HCC reimbursement methodology under-reimburses hospital stays for visually impaired patients because it fails to recognize the risk for excess cost, most probably accounted for substantially by increased LOS.

Limitations

1. Only a small percentage of individuals with vision loss meet the restrictive PACE definition. If appropriate data for patients with vision loss were available, our results could differ significantly
2. Sample size for the visually impaired population was relatively small
3. ICD-9 codes for vision loss are frequently excluded from the HCFA form 1500

Future Directions

We are completing an analysis of the Medicare 5% sample database by risk score band to further explore the impact of vision loss of healthcare costs and reimbursement

	0.00 - 0.50	0.50 - 1.00	1.00 - 1.25	1.25 - 1.50	1.50 - 1.75	1.75 - 2.00	2.00 +	Grand Total
Cost PMPM	616	912	1,219	1,518	1,744	1,836	2,413	1,430
Revenue PMPM	281	593	878	1,079	1,282	1,473	2,507	1,178
Claim Costs / Revenue	219%	154%	139%	141%	136%	125%	96%	121%
Average HCC	0.3568	0.7557	1.1129	1.3720	1.6288	1.8686	3.1557	1.4897