

Healthcare Resource Utilization and Costs of Parkinson's Disease Dementia With Psychosis in the US Medicare Population

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INTRODUCTION

- Dementia affects approximately 7.9 million individuals in the US.¹
- Of these, about 1.2 million are diagnosed with dementia-related psychosis (DRP).²
- DRP is a functionally disruptive symptom that can occur in all dementia types.
- Published data are limited regarding the burden of illness for these patients, their healthcare resource utilization (HCRU), and related costs in the US healthcare system.

OBJECTIVE

- To describe HCRU and related costs in patients with Parkinson's disease dementia with psychosis (PDD-P), compared with patients with other dementia types, in a nationally representative US sample.

METHODS

- Medicare Parts A, B, and D data from 2008–2016 were used.
- Patients with PDD-P and no other obvious etiology of dementia or psychosis were identified using ICD-9 and -10 codes.
- For purposes of contrast, six types of dementia with psychosis were identified using ICD-9 and -10 codes:
 - Alzheimer Dementia (AD)
 - Parkinson Disease (PD) Dementia
 - Dementia with Lewy bodies
 - Frontotemporal dementia
 - Vascular dementia
 - Other/unspecified
- Patients were required to have 12 months of Medicare enrollment prior to the index date.
- HCRU and costs were described in the 12 months after the index date for patients with PDD-P.
- HCRU and costs derived from:
 - Inpatient (IP)
 - Outpatient (OP):
 - emergency department (ER) or observational stay (OB)
 - Non-ER/OB
 - Skilled nursing facility (SNF)
 - Home health/hospice (HH/HS)
 - Durable medical equip. (DME)
 - Part B (PB) physician encounters
 - Part D medication fills (PD Fills)
 - Long term care (LTC)
- Patients with each dementia were compared regarding HCRU and associated costs.
- Costs were weighted and reported in 2015 USD.

RESULTS

Table 1. Baseline Characteristics of Incident DRP patients by 6 dementia groups

Characteristics	Total	AD/Senile	PD	Lewy Body	Frontotemp	Vascular	Other/Unspec
Overall	49509	36266	367	739	212	4316	7609
Age (years)	84.77(7.78)	85.11(7.59)	77.43(7.92)	82.23(7.28)	79.18(9.27)	83.80(8.61)	84.49(7.81)
Age group							
<=70 yrs	4.58(2268)	3.79(1375)	21.80(80)	7.31(54)	18.87(40)	7.30(315)	5.31(404)
71-75 yrs	8.09(4007)	7.63(2767)	19.62(72)	13.13(97)	15.57(33)	9.59(414)	8.20(624)
76-80 yrs	15.48(7665)	15.15(5493)	25.07(92)	19.89(147)	20.75(44)	16.17(698)	15.65(1191)
81-85 yrs	24.52(12141)	24.80(8993)	19.35(71)	28.15(208)	19.34(41)	22.54(973)	24.38(1855)
86-90 yrs	26.34(13043)	26.84(9735)	10.35(38)	20.57(152)	16.04(34)	24.40(1053)	26.69(2031)
91+ yrs	20.98(10385)	21.79(7903)	3.81(14)	10.96(81)	9.43(20)	20.00(863)	19.77(1504)
Gender							
Male	28.97(14343)	27.45(9956)	60.76(223)	49.93(369)	41.98(89)	32.16(1388)	30.46(2318)
Female	71.03(35166)	72.55(26310)	39.24(144)	50.07(370)	58.02(123)	67.84(2928)	69.54(5291)
Race							
White	85.66(42407)	85.35(30954)	91.01(334)	90.53(669)	93.40(198)	83.67(3611)	87.28(6641)
Black	8.47(4191)	8.32(3016)	5.18(19)	5.01(37)	*	11.42(493)	8.11(617)
Other	5.88(2911)	6.33(2296)	3.81(14)	4.47(33)	*	4.91(212)	4.61(351)
N of comorbidities							
0	23.72(11745)	24.75(8975)	32.15(118)	29.50(218)	39.15(83)	14.46(624)	22.70(1727)
1	26.15(12948)	26.85(9736)	24.80(91)	22.33(165)	26.42(56)	22.36(965)	25.43(1935)
2-3	33.67(16669)	33.42(12119)	29.43(108)	33.69(249)	20.75(44)	36.96(1595)	33.57(2554)
4-11	16.46(8147)	14.99(5436)	13.62(50)	14.48(107)	13.68(29)	26.23(1132)	18.31(1393)

By dementia with psychosis type, 73.3% were diagnosed with AD/senile, 0.7% PD, 1.5% dementia with Lewy bodies, 0.4% frontotemporal, 8.7% vascular, and 15.4% other/unspecified.

*Cell sizes too small to show per Medicare reporting guidelines.

Table 2. All-cause healthcare resource utilization in incident DRP patients, overall and by dementia type, during the 1st year after DRP

Type of dementia	n	Weighted mean of claims per patient per year						
		IP	ER/OB	OP	SNF	HH/HS	PB visits	PD fills
Overall	49,509	0.9	1.1	6.5	1.4	2.0	30.8	79.2
AD/Senile	36,266	0.9	1.0	6.4	1.4	2.0	30.2	78.5
PD	367	1.0	1.8	8.9	1.2	1.7	41.7	69.7
Lewy body	739	1.0	1.1	7.0	1.4	2.0	32.4	82.1
Frontotemporal	212	0.9	0.9	5.8	1.1	2.3	30.2	68.6
Vascular	4,316	1.1	1.1	7.3	1.6	1.9	35.2	85.8
Other/unspecified	7,609	1.0	1.2	6.9	1.4	1.9	30.4	78.9

Please see Methods for definitions of abbreviations.

Weighted mean number of inpatient claims and SNF claims differed little between dementia types, but **PDD-P patients had substantially higher numbers of ER/OB, outpatient, and Part B physician encounters** than patients with other types of DRP.

Table 3. All-cause costs in 2015 US \$ per patient-year in incident DRP patients, overall and by Dementia type, during the 1st year after DRP

Type of dementia	n	Weighted Mean of Cost (\$) per patient per year								
		IP	OP	SNF	HH/HS	PB visits/D	PD fills	Total Medicare	LTC*	Total
Overall	49,509	11,779	3,179	8,534	6,709	5,908	5,326	41,433	26,270	67,704
AD/Senile	36,266	11,440	3,036	8,393	6,787	5,765	5,421	40,882	27,042	67,884
PD	367	14,411	5,230	10,997	6,455	8,558	5,992	51,643	9,973	61,616
Lewy body	739	12,658	3,788	8,530	7,017	6,292	6,060	44,345	24,640	68,985
Frontotemporal	212	11,288	2,617	5,971	7,754	5,397	4,532	37,558	22,500	60,058
Vascular	4,316	13,684	3,882	9,626	6,344	7,023	5,608	46,166	29,518	75,684
Other/unspecified	7,609	12,251	3,396	8,621	6,462	5,882	4,577	41,188	20,936	62,124

PDD-P patients had substantially higher weighted mean costs, charged to Medicare, per patient per year (\$51,643) compared to patients with other causes of DRP; the next-most-expensive DRP for Medicare was vascular dementia (\$46,166) – at nearly 11% less expensive than PDD-P.

CONCLUSIONS

- **Relative to other patients with DRP, PDD-P patients are relatively high utilizers of healthcare resources.**
- **PDD-P patients have relatively high numbers of encounters with physicians, outpatient encounters, and acute care encounters in the ER.**
- **PDD-P patients incur substantially higher costs to Medicare.**
- However, cost differences in the PDD-P subgroup may be related to the small size of the group and the limited number of patients with follow-up beyond the first year after psychosis diagnosis.
- Additional analyses in this dataset are planned in an attempt to clarify the factors associated with use of healthcare resources in patients with dementia-related psychosis.

REFERENCES

- (1) World Health Organization Dementia Key Facts Sheet 12December 2017.
- (2) 2017 Alzheimer's Disease Facts and Figures and ACADIA market research.

DISCLOSURES

Dr Wetmore has received research funding or support from ACADIA, Genentech, Merck, the NIDDK, NHLBI, OPKO, and Relypsa, and has served on an ad hoc advisory board for Amgen. Dr Shim is an employee of ACADIA Pharmaceuticals Inc., the sponsor of this study. Dr Rashid has served as a HEOR consultant to ACADIA. Drs Yan, Irfan, Peng, Gilbertson, and Li have no conflicts to disclose.

This study was sponsored by ACADIA Pharmaceuticals Inc., San Diego, CA, USA

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