

Real-World Outpatient Cost of Care among Chemotherapy-Treated Patients with Non-small Cell Lung Cancer (NSCLC) in the US Community

Zhaohui Su, PhD, Janet Espirito, PharmD, Kathleen M. Aguilar, MPH, Junxin Shi, PhD, Nicole Niehoff, PhD MSPH, Amy K. O'Sullivan, PhD

Objectives

- To evaluate cost of care and changes in cost over time among patients with NSCLC who received care within a large network of US community oncology clinics

Methods

- Adult patients diagnosed with NSCLC in The US Oncology Network from March 2015 through June 2022 and treated with chemotherapy were included.
- Data were retrospectively sourced from the iKnowMed™ (iKM) oncology-specific electronic health record, which captures outpatient practice encounter histories for nearly 40% of US community oncology practices.
- iKM records are deterministically linked to claims and remittance data.
- All costs were paid amount for outpatient services, standardized to 2022 US dollars (\$), and analyzed descriptively as cost per patient per month (PPPM) longitudinally since 2015.

Results

- The study included 26,615 patients across all 4 US census divisions.
- The median (Q1, Q3) age was 68 (61, 75).
- The majority of the total costs (median PPPM: \$5,219) were chemotherapy (\$2,957).
- The median outpatient costs significantly increased since 2015 ($P < 0.001$) with cost data censored within 12 months after the diagnosis date.
- The adjusted analyses confirmed the above results (covariates: tumor stage, gender, age group, race group, region, urban/rural, insurance, year of diagnosis).

Table 1: Outpatient Cost by Patient's Characteristics

Characteristics	N (%)	Median (Q1, Q3) PPPM
Overall	26,615 (100%)	\$5,219 (1,839, 10,708)
Chemotherapy	26,615 (100%)	\$2,957 (330, 8,616)
Stage 0-III	6,826 (26%)	\$3,544 (1,471, 7,578)
Stage IV	10,696 (40%)	\$8,451 (3,451, 13,948)
Not documented	9,093 (34%)	\$3,682 (1,127, 8,671)
Female	12,867 (48%)	\$4,611 (1,648, 9,765)
Male	13,748 (52%)	\$5,827 (2,018, 11,481)
Age group		
<65	9,625 (36%)	\$5,984 (2,213, 11,987)
65-74	9,872 (37%)	\$4,995 (1,776, 10,261)
75-84	6,100 (23%)	\$4,643 (1,461, 9,676)
85+	1,018 (4%)	\$4,550 (1,168, 9,332)
Race		
Black	2,396 (9%)	\$5,272 (1,740, 11,022)
White	18,856 (71%)	\$5,202 (1,846, 10,609)
Asian	631 (2%)	\$4,274 (1,592, 9,945)
Other	696 (3%)	\$4,813 (1,623, 9,692)
Not documented	4,036 (15%)	\$5,516 (1,898, 11,031)
Region		
Midwest	5,865 (22%)	\$5,214 (1,749, 10,694)
Northeast	1,552 (6%)	\$4,996 (2,114, 9,972)
South	11,480 (43%)	\$5,191 (1,681, 10,847)
West	7,718 (29%)	\$5,302 (2,078, 10,678)
Rural	1,943 (7%)	\$4,318 (1,278, 9,367)
Urban	24,672 (93%)	\$5,285 (1,873, 10,826)
Insurance		
Medicare	11,381 (43%)	\$4,826 (1,611, 10,033)
Medicaid	1,779 (7%)	\$4,708 (1,494, 9,722)
Commercial	13,328 (50%)	\$5,704 (2,086, 11,403)
Other	127 (<1%)	\$3,284 (538, 9,161)
Year of diagnosis		
2015 (partial year)	1,954 (7%)	\$2,746 (915, 5,867)
2016	2,841 (11%)	\$3,476 (1,450, 7,708)
2017	4,009 (15%)	\$3,925 (1,359, 8,675)
2018	3,892 (14%)	\$5,619 (2,000, 11,083)
2019	3,997 (15%)	\$6,676 (2,313, 12,709)
2020	3,647 (14%)	\$6,937 (2,377, 13,107)
2021	3,640 (14%)	\$6,848 (2,335, 12,255)
2022 (partial year)	2,635 (10%)	\$5,831 (2,253, 10,731)

Figure 1: Cost PPPM (descriptive analysis)

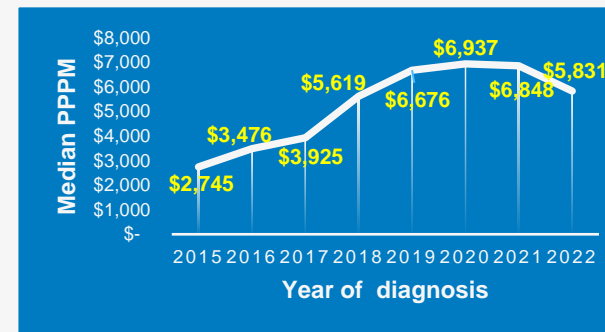


Figure 2: Cost PPPM (adjusted analysis)

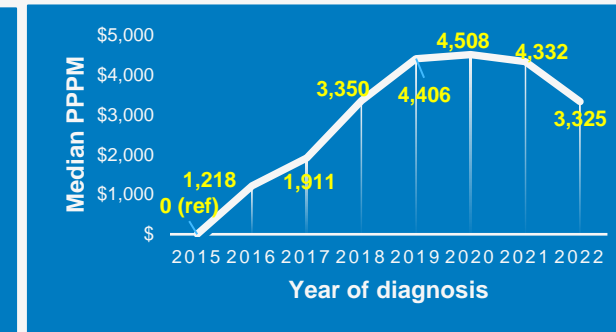


Figure 3: PPPM of Stage IV (upper line) vs Stage 0-III

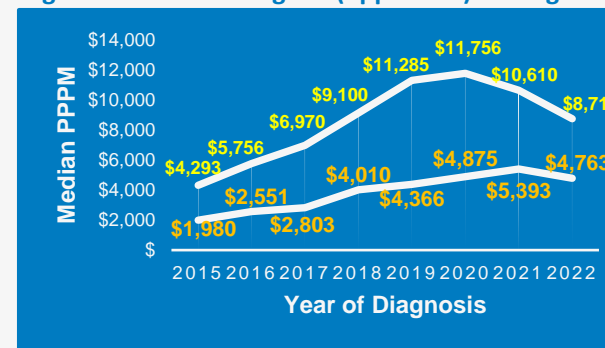
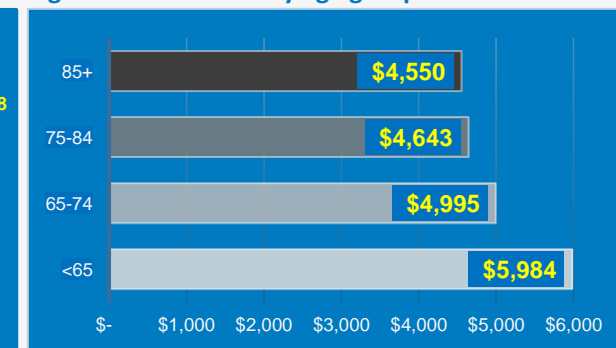


Figure 4: Cost PPPM by age group



Strengths/Limitations

- A strength is that the study data were sourced from linked EHR and claims databases of a large network of US community oncology practices.
- Cost information is limited to closed claims for outpatient services received within The Network.
- Since all patients in this study received chemotherapy within The Network, these results may not be generalizable to patients with melanoma who received other treatments or care outside The Network.

Conclusion

- This a large real-world study of costs on melanoma patients treated in the US community setting.
- The cost of treating NSCLC has significantly increased over time, for both Stage 4 and earlier stages.
- The outpatient cost is higher for younger patients.
- These results may provide oncology stakeholders with insights into how advancements in NSCLC treatment influence costs.