

Research Article

Impact of the Affordable Care Act on Insurance Status of Patients Newly Diagnosed With Kaposi Sarcoma

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Abstract

Background: The Affordable Care Act (ACA) role in changing the insurance composition of patients diagnosed with many dermatological conditions, such as Kaposi Sarcoma (KS), has not been assessed.

Methods: The Surveillance, Epidemiology and End Results (SEER) Program, which captures cancer data from nearly 40% of cases in the US was used to extract cases. Cases were subgrouped by Medicaid expansion and non-expansion states. Standard mean differences were used as the statistical measure with P-value <0.05 used for statistical significance.

Results: 2,465 patients met the inclusion criteria. In patients newly diagnosed with Kaposi sarcoma nationally before and after ACA implementation, the analysis showed there was no significant difference in the percentage of uninsured patients, Medicaid-insured patients, or privately insured patients. Pre- and post-ACA sub-analysis of patients newly diagnosed with Kaposi sarcoma in states that expanded Medicaid showed: (1) significant decrease in the percentage of uninsured patients (-5.81% difference, 95% CI -9.58% to -2.04%, P <.05); (2) significant increase in the percentage of Medicaid-insured patients (+9.36% difference, 95% CI +0.35% to +18.37%, P <.05) and (3) no significant difference in the percent of privately insured patients (-3.54% difference, 95% CI -13.74% to +6.64%). Sub-analysis in non-expansion states showed no difference between the insurance subtypes.

Conclusion: Medicaid expansion played the largest role in reducing the percentage of uninsured patients newly diagnosed with KS. In states without Medicaid expansion, it is important that public health forces ensure adequate access to medications with services like the Ryan White HIV/AIDS Program.

Keywords: Kaposi Sarcoma; Dermatology; Affordable Care Act; Insurance; Medicaid; Expansion; Uninsured; Database

Introduction

The Affordable Care Act (ACA) was passed in March 2010 to reduce barriers to preventive and primary healthcare among low and middle-income uninsured individuals. Although ACA was passed in 2010, the main initiatives began taking place in 2014. Two of the main provisions in attaining this goal were to: (1) expand Medicaid and (2) create health insurance exchanges. Beginning in January 2014, states were given the option to expand Medicaid to 138% of the Federal Poverty Level (FPL) to reduce the number of uninsured. Individuals with incomes from 139-140% of the FPL are subsidized to buy qualified health plans through state Marketplaces [1].

Around 38.4% of individuals will be diagnosed with cancer in their lifetimes in the United States [2]. Early detection accounts for a large portion of cancer prognosis, preventing mortality, morbidity and costs [3]. Uninsured individuals are

disproportionately overlooked by the system and 50% less likely to receive cancer screening [4]. While the ACA has reduced the number of uninsured patients nationally, the health outcomes for certain diseases remain uncertain. Furthermore, sub-analyses of changes in uninsured rates in Medicaid-expansion and non-expansion states are also lacking.

In this study, the association of full ACA implementation with rates of insurance type (uninsured, Medicaid, non-Medicaid) in patients newly diagnosed with Kaposi sarcoma was assessed at both the national and state-level (Medicaid expansion and non-expansion states) using the Surveillance, Epidemiology and End Results (SEER) national cancer database.

Methods

Institutional Review Board approval was not required for this study. Since 1973, SEER, a database maintained by the National Cancer Institute, has collected data on patient demographics, tumor characteristics, treatment administered, survival and more cancer cases reported from 18 registries from across the United States. SEER pools data from approximately 34.6% of the United States population [5].

International Classification of Diseases for Oncology (ICD-O-3) code for “Kaposi sarcoma” (9140/3) was used to identify cases. Inclusion criteria were: (1) diagnoses made between 2007 and 2015; (2) age 18-64 and (3) mucosal and cutaneous primary sites. Ages were restricted to 18-64 to exclude patients 65 years or older eligible for Medicare [6]. Medicare insurance data is not currently recorded by SEER. Insurance analysis including patients of Medicare-eligible age is not recommended [6]. Data was extracted from January 2007 to December 2015; 2007 was the first year SEER recorded insurance data and 2015 is the last year of data documented at the time of the study. Cases with an “Unknown” insurance type were excluded after extraction.

The primary outcomes were to: (1) measure the percentage of newly diagnosed cases of Kaposi sarcoma by each insurance type (“Uninsured”, “Any Medicaid”, “non-Medicaid insurance” [i.e. private insurance]) before and after the ACA nationally; (2) measure percentage of newly diagnosed cases of Kaposi sarcoma by insurance type before and after the ACA in states which expanded Medicaid by January 1, 2014 and (3) measure percentage of newly diagnosed cases of Kaposi sarcoma by insurance type before and after the ACA in states that did not undergo Medicaid expansion. The years 2007-2013 served as the pre-ACA group while 2014-2015 was paired as the post-ACA group since 2014 was when the ACA was fully implemented. Standardized mean differences and 95% Confidence Intervals (CIs) were used for the two groups of data (2007-2013 and 2014-2015) overall. Analysis was re-performed for states that underwent Medicaid expansion by January 1, 2014 and again for those that did not undergo Medicaid expansion by 2015. All P values were from 2-sided tests and $P < 0.05$ was used for statistical significance.

Results

2,465 patients met the inclusion criteria for this study. The mean age of the cohort was 41.55 years (SD 10.675). 2,464 patients had received follow-up, with a mean follow-up time of 37.26 months (SD 32.851). 71% (1749/2465) of the cohort was reported as alive at the end of the study.

In patients newly diagnosed with Kaposi sarcoma nationally before and after ACA implementation, the analysis showed (Fig. 1): (1) no significant difference in the percentage of uninsured patients (11.78% after vs 14.36% before; -2.58% difference; 95% CI -10.04% to +4.89%); (2) no significant difference in the percentage of Medicaid-insured patients (36.46% after vs 30.62% before; +5.84% difference, 95% CI -0.73% to +12.41%) and (3) no significant difference in the percentage of privately insured patients (51.76% after vs 55.03% before; -3.27% difference, 95% CI -12.15% to +5.61%).

Pre- and post-ACA sub-analysis of patients newly diagnosed with Kaposi sarcoma in states that expanded Medicaid showed (Fig. 2): (1) a significant decrease in the percentage of uninsured patients (6.33% after vs 12.14% before; -5.81% difference, 95% CI -9.58% to -2.04%, $P < .05$); (2) significant increase in the percentage of Medicaid-insured patients (40.41% after vs 31.05% before; +9.36% difference, 95% CI +0.35% to +18.37%, $P < .05$) and (3) no significant difference in the percent of privately insured patients (53.27% after vs 56.81% before; -3.54% difference, 95% CI -13.74% to +6.64%). A similar sub-analysis of patients newly diagnosed with Kaposi sarcoma in states that did not expand Medicaid showed (Fig. 3): (1) no significant difference in the percentage of uninsured patients (27.55% after vs 20.67% before; +6.88% difference, 95% CI -11.17% to -24.92%); (2) no significant difference in the percentage of Medicaid-insured patients (26.39% after vs 29.49% before; -3.10% difference, 95% CI -16.39% to +10.19%) and

(3) no significant difference in the percent of privately insured patients (46.06% after vs 49.84% before; -3.78% difference, 95% CI -18.88% to +11.32%).

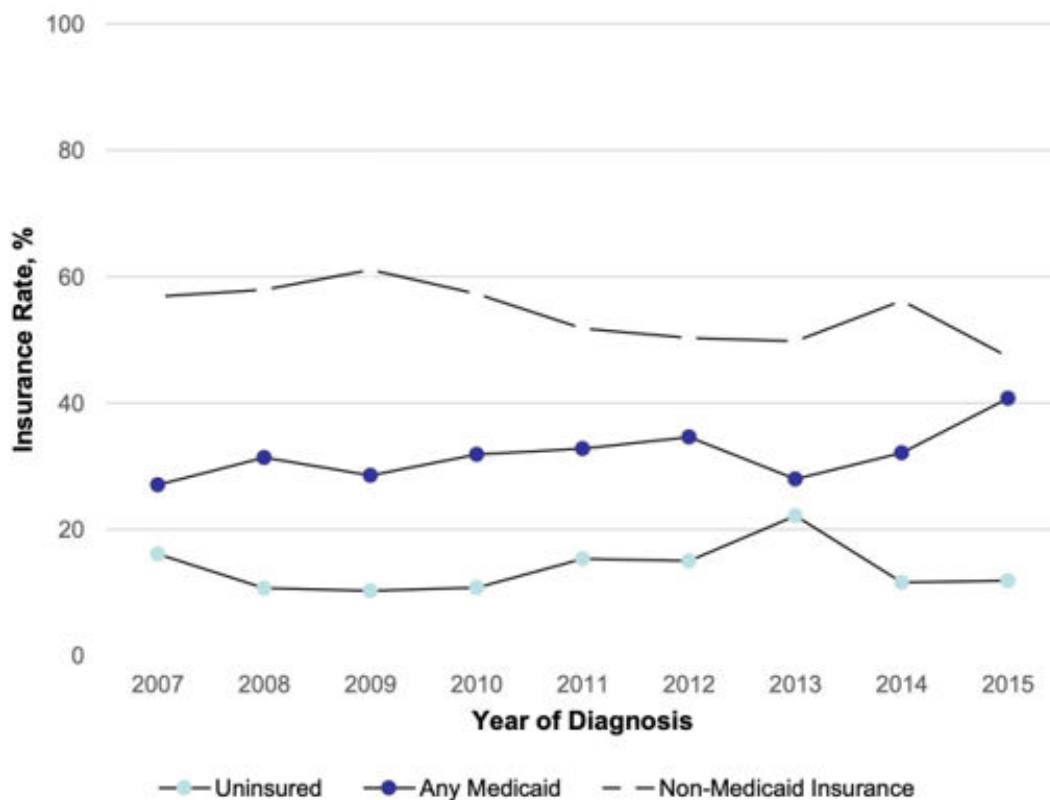


Figure 1: Nationwide depiction of rates of insurance status in patients newly diagnosed with mucocutaneous Kaposi sarcoma.

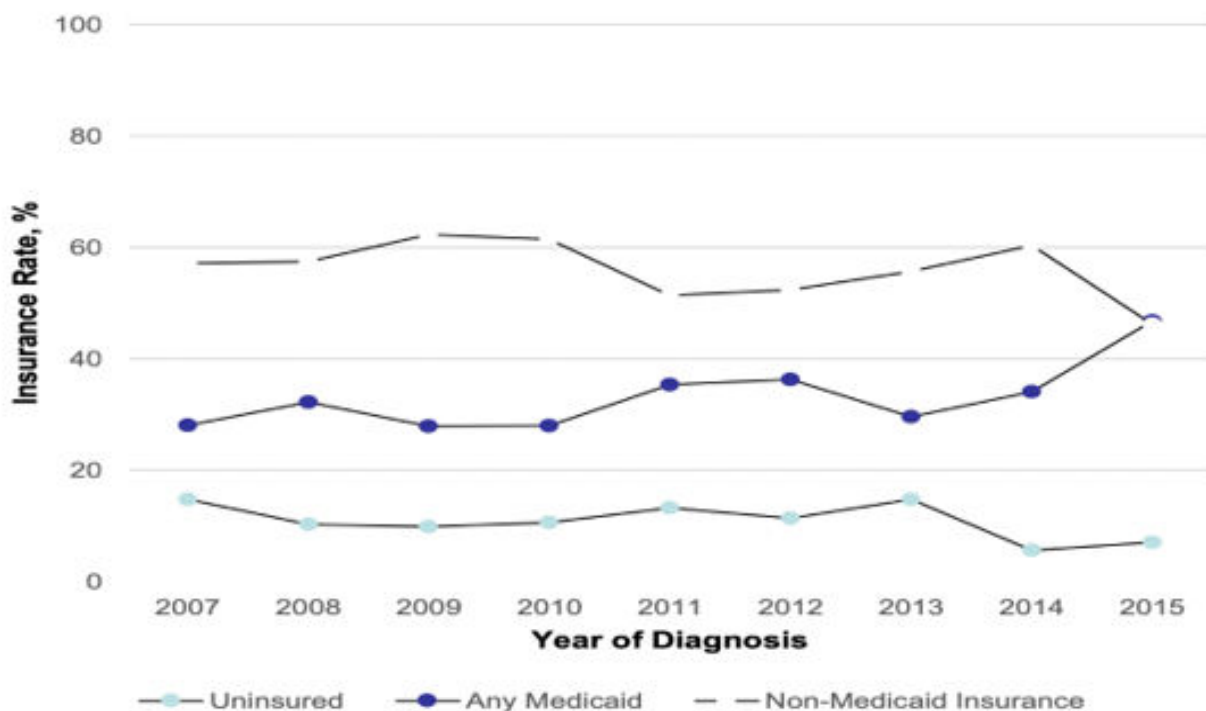


Figure 2: Rates of insurance status in patients newly diagnosed with mucocutaneous Kaposi sarcoma in states that expanded Medicaid.

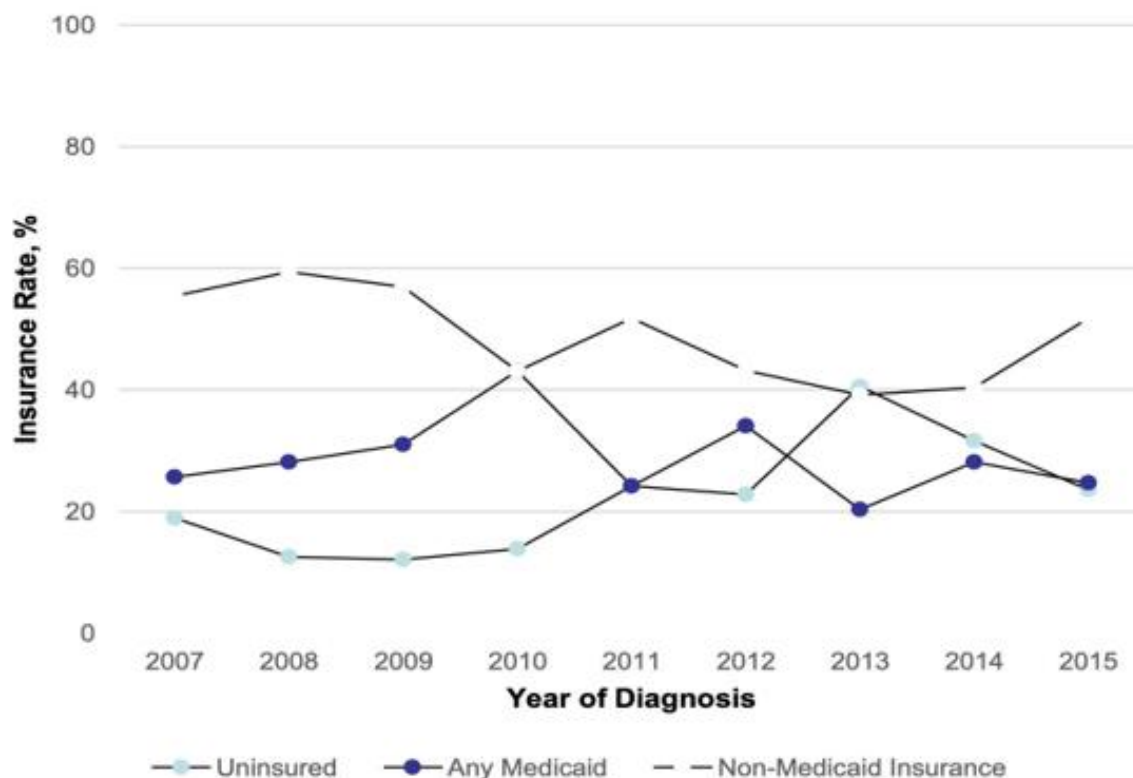


Figure 3: Rates of insurance status in patients newly diagnosed with mucocutaneous Kaposi sarcoma in states that did not expand Medicaid.

Discussion

Nationally, the ACA decreased the uninsured rate by 7.2% from 2010 to 2015 [7]. Insurance coverage has been linked to increased access to primary care, greater compliance to medication and routine care for chronic conditions [8]. KS patients facing a comorbidity of cancer and immunosuppression are likely to benefit from insurance coverage [9].

In contrast, this study showed there was no change in insurance composition of patients newly diagnosed with KS after full implementation of the ACA. However, there was a significant decrease (-5.81%) in uninsured-patients and increase (+9.36%) in Medicaid-insured patients newly diagnosed with Kaposi Sarcoma (KS) in states that expanded Medicaid. In contrast, the percentage of diagnosis in uninsured, Medicaid-insured and non-Medicaid-insured patients did not substantially change in states that did not expand Medicaid. This suggests that the predominant policy playing a role in transitioning patients from uninsured status to insured status is Medicaid expansion. Furthermore, it also suggests that patients with KS are more likely to have insurance coverage in states that expanded Medicaid. The lack of change in the national ACA data shows that individual state expansion may have a larger impact on KS diagnosis than national implementation of ACA.

It is important to note that in the US, most patients between the age of 18-64 are commercially insured (i.e., private insurance). A large percentage of patients in the US 65 years and above are insured by Medicare, which is not an insurance status tracked in SEER. SEER itself recommends stratifying data by cohorts above and below 65 years of age to avoid this confounding effect, as we have done. However, this results in a disproportionate amount of patients privately insured in our cohort, which is similar to prior studies in this area. The reason for the 2013 uninsured rate being disproportionately high may be due to small sample size, a small timeline of data and variability in reporting states. Uninsured patients with cancer have been shown to have worse outcomes than insured patients. KS, however, is unique because it can coexist with HIV. In such cases, it is shown to regress dramatically with a combination of antiretroviral therapy and chemotherapy with 50%-82% treatment response rates [10-14]. Lack of insurance in cancer patients has been associated with longer lag times leading to more advanced stage diagnoses, decreased access to guideline-based chemotherapy and greater mortality [15-19]. Similarly, HIV patients with no insurance coverage are less likely to receive HAART therapy [20]. They are at greater risk of missing follow-up visits and are less likely to

continue HAART treatment than insured patients [21]. Therefore, uninsured patients in need of both chemotherapy and HAART are less likely to have access, finances and compliance with both treatments. As such, this highlights a limitation of the ACA for patients with KS in this study shows its role was significant in reducing uninsured patients diagnosed with KS only in Medicaid-expansion states. In states that have not expanded Medicaid, it is important for public health forces to be targeted toward those patients who remain uninsured to ensure adequate access to medications with programs like the Ryan White HIV/AIDS Program (an initiative offering access to free/subsidized HAART therapy regardless of insurance status) serving as a model to bridge gaps in coverage and patient reach of the ACA [22].

Conflict of Interest

The authors have no conflict of interest to declare.

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