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Utilization of Cardiac Screening Among Medicaid-enrolled Survivors of Childhood Cancer: A Report from The Childhood Cancer Survivor Study (CCSS)

201

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Abstract

Purpose: Childhood cancer survivors are at long-term risk for treatment-associated heart failure/myocardial dysfunction. Exposure-based pediatric cancer survivorship guidelines recommend periodic cardiac surveillance for at-risk survivors. Yet, the utilization of cardiac screening services among survivors with U.S.-based public insurance (i.e., Medicaid) is unknown and may differ due to survivors' residence, as Medicaid expansion has occurred in most, but not all, states.

Methods: Data from the CCSS were linked to administrative Medicaid insurance claims. We included survivors ages 18-64 years, residing in the U.S., identified as at risk (received radiation to chest/heart, total body irradiation, and/or anthracyclines), continuously enrolled in Medicaid in 2015-2019, and without Grade 3-4 cardiovascular conditions by 2019. The primary outcome was the receipt of any cardiac test in this time period (echocardiogram, multigated acquisition scan, or magnetic resonance imaging). Multivariable logistic models assessed sociodemographic, clinical, and policy-related characteristics associated with any cardiac testing, with adjusted probability differences (i.e., marginal effects [MEs]) reported.

Results: We included 1,062 survivors, with 55.1% female, 46.9% ages ≥ 40 years in 2019, and 72.8% non-Hispanic White. During 2015-2019, 285 (26.8%) survivors received any cardiac test. In multivariable models, residence in states that expanded Medicaid eligibility by 2014 (vs. non-expansion states) and in urban (vs. rural) areas were associated with an increase of 7.2 percentage points (ppts, 95%CI=0.9-13.4) and 6.0 ppts (95%CI=0.5-11.5), respectively, in the likelihood of receiving a cardiac test. Additionally, survivors with Grade 3-4 non-cardiovascular conditions (vs. those without) were more likely to receive a test (ME=6.1 ppts, 95%CI=0.4-11.9). Compared to survivors of leukemia, the likelihood of receiving a screening test was higher among Hodgkin lymphoma (ME=13.4 ppt, 95%CI=1.0-25.9) but lower among central nervous system tumors (ME=-9.1 ppt, 95%CI=-15.7-2.5).

Conclusions: Risk-based cardiac testing is low among Medicaid-enrolled survivors. Targeted interventions in rural areas and policy reforms toward improving insurance coverage may increase utilization.