Increasing Cardiomyopathy Screening in Childhood Cancer Survivors: A Cost Analysis of Advanced Practice Nurse Phone Counseling

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Purpose/Objectives: To document the per survivor and per additional survivor screening costs of a mailed survivorship care plan (SCP) with advanced practice nurse (APN) telephone counseling (SCP+C) or without APN telephone counseling (SCP).

Design: Randomized, longitudinal clinical trial.

Setting: St. Jude Children’s Research Hospital in Memphis, Tennessee.

Sample: 411 at-risk pediatric cancer survivors (aged 26–59 years), stratified by age (younger than 30 years versus 30 years or older), recommended screening frequency (every one, two, or five years), gender, and cancer diagnosis (hematologic versus solid tumor).

Methods: Clinical and resource data costs were derived from trial data and external estimates.

Main Research Variables: The cost-effectiveness of left ventricular systolic function screening per survivor and per each additional survivor screened.

Findings: The per-survivor costs of SCP (n = 206) and SCP+C (n = 205) were $74.91 and $224.69, respectively. The estimated costs of SCP and SCP+C per additional survivor screened for two years disseminated in a medium-sized clinic (n = 101 survivors annually) were $345.41 and $293.85, respectively.

Conclusions: Adding APN counseling to a printed SCP may help preserve cardiac health at little or no cost per additional survivor screened.

Implications for Nursing: APN counseling is cost-effective and superior to the standard of care in supporting at-risk survivors’ cardiac screening participation.

Despite the contribution of anthracyclines to childhood cancer survival, these chemotherapy drugs confer a high risk of asymptomatic left ventricular (LV) dysfunction, cardiomyopathy, congestive heart failure, and death (Lipshultz et al., 2013; Mulrooney et al., 2009; Pein et al., 2004; van Dalen, van der Pal, Kok, Caron, & Kremer, 2006). Radiation of cardiovascular (CV) structures is associated with various adverse outcomes, including cardiomyopathy, constrictive pericarditis, and accelerated atherosclerosis, predisposing survivors to early onset coronary artery disease, myocardial infarction, and stroke (van der Pal, van Dalen, Kremer, Bakker, & van Leeuwen, 2005; van der Pal et al., 2012). Unfortunately, these CV effects can be progressive and frequently subclinical in the early stages (Mulrooney et al., 2009; van Dalen et al., 2006; van der Pal et al., 2005).

All available long-term follow-up (LTFU) guidelines for pediatric cancer survivors (Armenian et al., 2015; Children’s Oncology Group [COG], 2010; Dutch Childhood Oncology Group, 2010; Scottish Intercollegiate Guidelines Network, 2013; Skinner, Wallace, & Levitt, 2005) recommend evaluating LV systolic function through echocardiography or comparable imaging. Screening frequency is