Changing Hearts and Minds: NCI / NHLBI Cancer Treatment-Related Cardiotoxicity Initiative

Nonniekaye Shelburne, CRNP, MS, AOCN

Program Director

NCI, Division of Cancer Control & Populations Sciences

NIH NATIONAL CANCER INSTITUTE

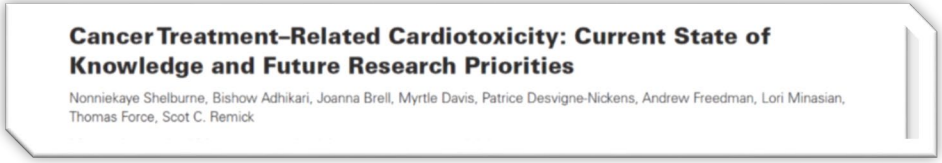
October 18, 2021

Disclosures

- Nothing to Disclose

Research Recommendation: Cancer Treatment-Related Cardiotoxicity

Recommendation Category	2013 JNCI. 2014; 106(8)	2018 Curr Onc Rep 2019; 21(1)
Developing Data Standards	LVEF reduction of 10% to less than 50%; or >15% from baseline	Promote more standardized oncology clinical trial entry eligibility for preexisting cardiovascular disease and comorbidities.
Mechanisms of Damage	Characterize signaling pathways	Broaden use of human induced pluripotent stem cells (cardiomyocyte, endothelial)
Preclinical and Animal Studies	Utilize models with cardiac stressors	Move mechanistic evidence into preclinical models and validation criteria
Markers of Risk & Injury	Incorporate imaging and biomarkers into risk stratification tools	Implement core lab processing
Prevention & Management	Cardiac meds, activity, diet…When, what, how much and to whom?	Focus on modifiable risk factors & multi-strategy approaches
Cancer Survivorship	Longitudinal follow-up; care coordination	Risk stratification tools that inform health system resource utilization


Cancer Treatment–Related Cardiotoxicity: Current State of Knowledge and Future Research Priorities

Nonniekaye Shelburne, Bishow Adhikari, Joanna Brell, Myrtle Davis, Patrice Desvigne-Nickens, Andrew Freedman, Lori Minasian, Thomas Force, Scot C. Remick


Changing Hearts and Minds: Improving Outcomes in Cancer Treatment-Related Cardiotoxicity

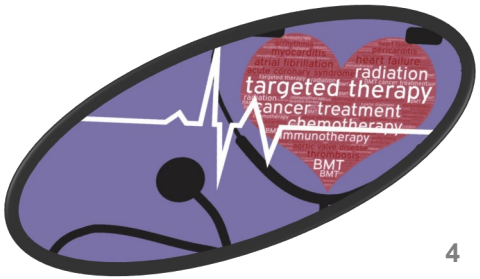
Nonniekaye Shelburne[1,2] · Naoko I. Simonds[3] · Bishow Adhikari[4] · Michael Alley[5] · Patrice Desvigne-Nickens[4] · Eileen Dimond[6] · Kelly Filipski[1] · Lisa Gallicchio[1] · Lori Minasian[6]

Improving Outcomes in Cancer Treatment-Related Cardiotoxicity

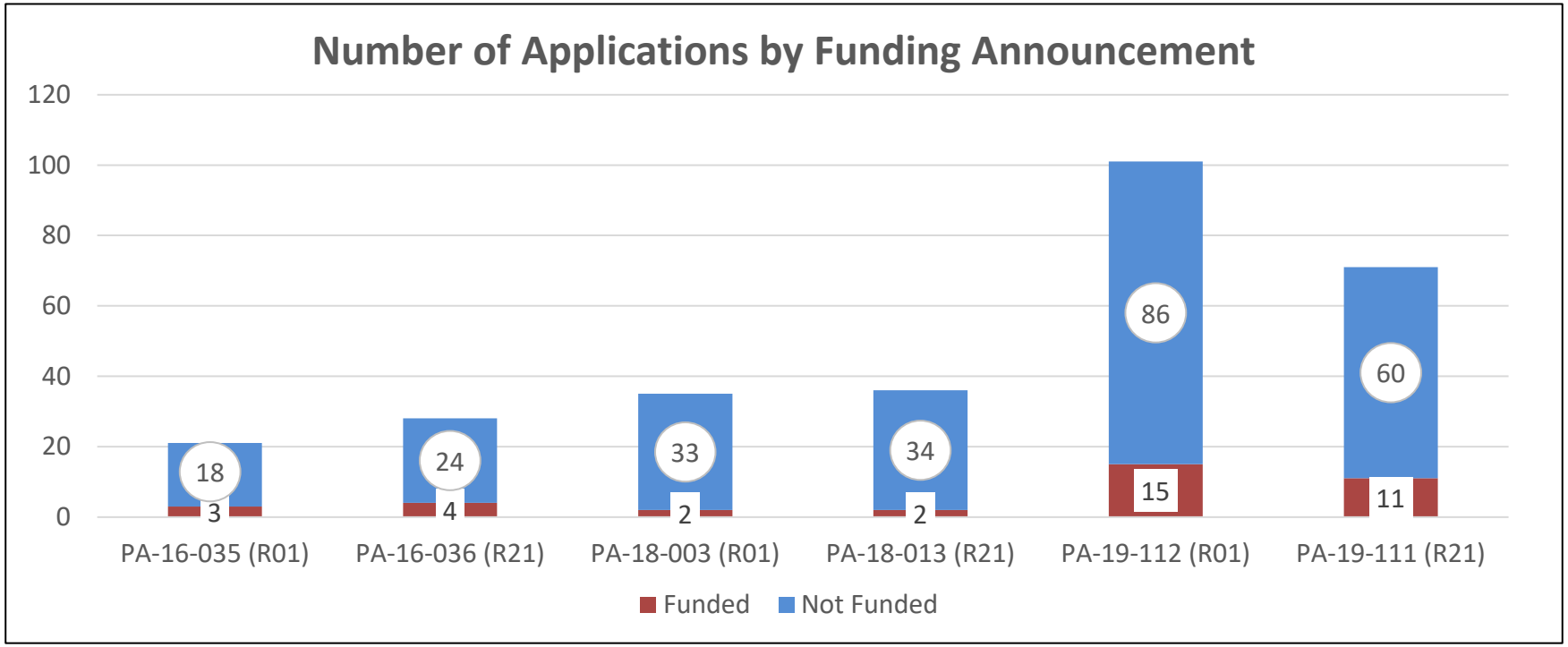
- Grant Funding Opportunity Announcements (FOA)
  - PA-19-111 (R21)

    Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R21 Clinical Trial Optional)
  - PA-19-112 (R01)

    Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R01 Clinical Trial Optional)
- Primary intent it to mitigate cardiovascular dysfunction while optimizing cancer outcomes
- Collaborative approach to identify and translate research findings
- Receipt dates: February 2019 – November 2021



NCI/NHLBI Cardiotoxicity Funding



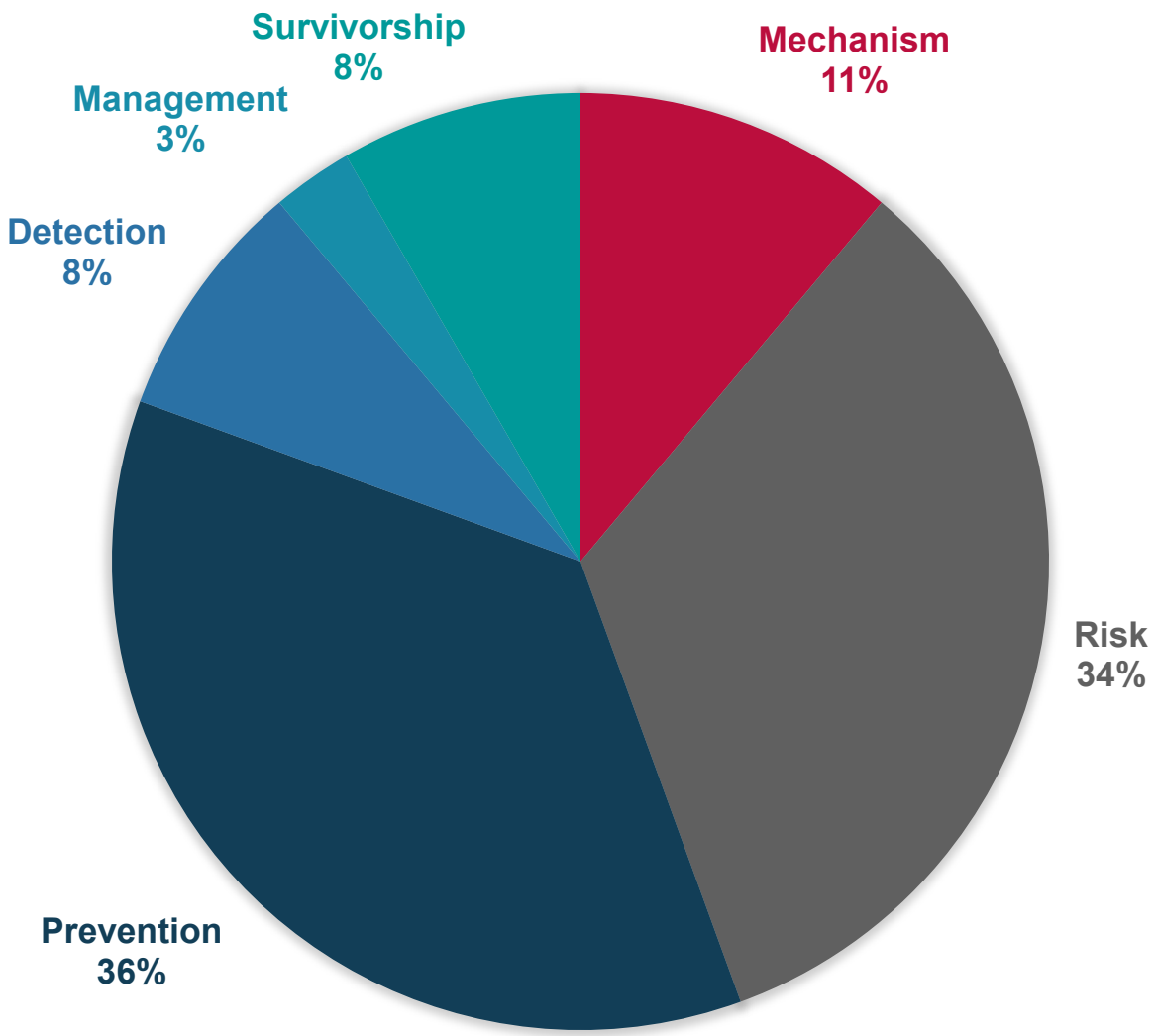
2016 - 2017

2018

2019 – 2021

Total apps = 292 Total Funded = 37 Funding rate = 12.6%

Focus of Funded Studies



Continued Evidence Gaps

Mechanisms	Risk	Prevention	Detection	Management	Survivorship
• Pre-clinical animal models • Translation of mechanisms • Validation studies	• Baseline CVD Assessment • Genetics	• Pharmaco-logic • Diet, Lifestyle, Exercise	• Methods • Frequency	• Pharmaco-logic • Diet, Lifestyle, Exercise	• Care Coordination • Resource Utilization

- Non-myopathy focused studies
- Combination cancer therapy
- Emerging therapies
- Disparities
- Intervention Studies

NIH Cardiotoxicity Team

- Nonniekaye Shelburne – NCI, Division of Cancer Control & Population Sciences
- Bishow Adhikari – NHLBI, Division of Cardiovascular Sciences
- Patrice Desvigne-Nickens – NHLBI, Division of Cardiovascular Sciences
- Eileen Dimond – NCI, Division of Cancer Prevention
- Lori Minasian – NCI, Division of Cancer Prevention
- Sundar Venkatachalam– NCI, Division of Cancer Treatment and Diagnosis

NATIONAL CANCER INSTITUTE

www.cancer.gov

www.cancer.gov/espanol