

Cancer Intervention and Surveillance Modeling Network (CISNET) Reissuance

Division of Cancer Control and Population Sciences

FY26 RFA Concept presented by Dr. Natasha Stout, Overall CISNET Project Scientist

CISNET Project Scientists

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What is CISNET?



- Collaborative consortium using population-based disease simulation to extend existing evidence to guide public health research and priorities
 - Person-level simulation of disease process, overlaying risk factors, prevention, screening, treatment to replicate the system of cancer in population over time
 - By changing assumptions, can conduct counterfactual experiments for cancer control
 - Pioneering comparative modeling approach where independent cancer-site specific modeling teams work *together* to address same research questions lending rigor and credibility
 - To date: 715+ publications covering 14 topic areas with 115+ in high impact journals
 - USPSTF relies on CISNET for colon, breast, lung, cervical and prostate cancer screening guidelines



What is CISNET?

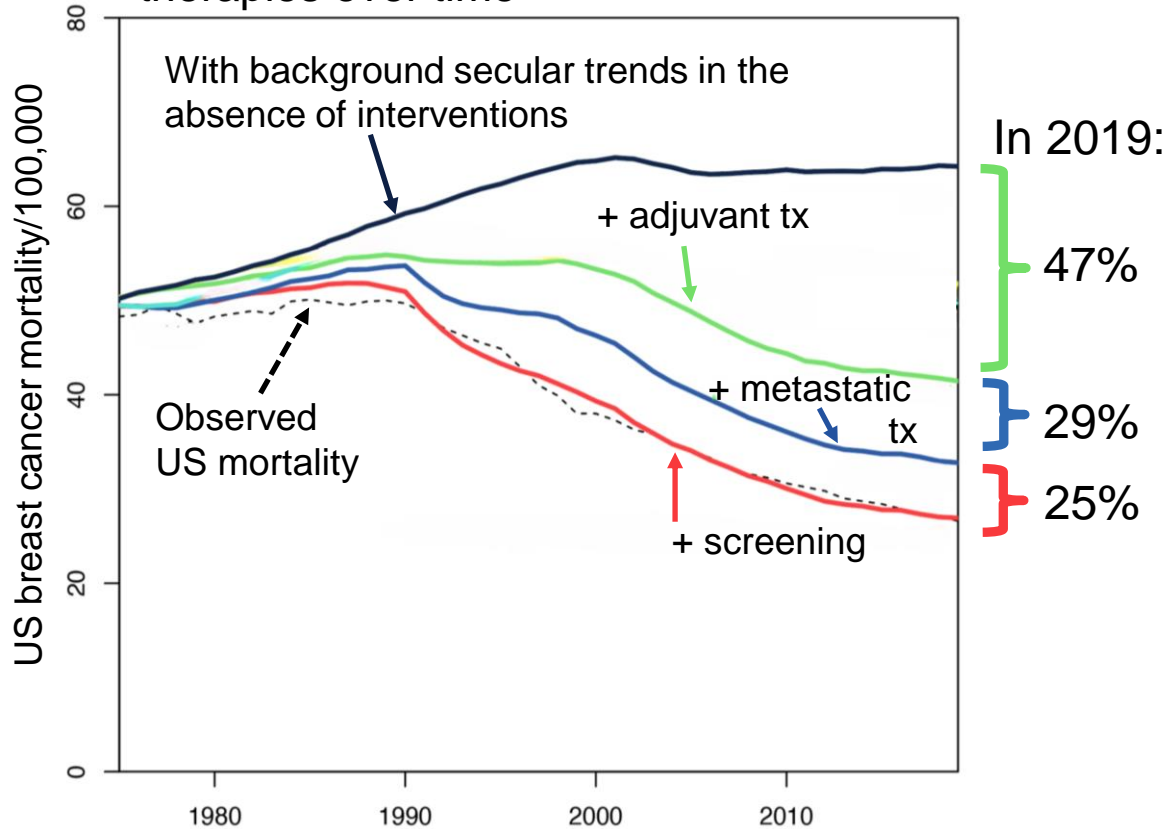
- Consortium of multi-PI cancer site specific U01 grants
 - Each includes 2-6 modeling teams and a cancer site specific coordinating center with data, policy and clinical expertise
 - Cross-CISNET committees and shared resources to facilitate collaboration across cancers
- Current cancer sites include:
 - Legacy: breast, prostate, colorectal, lung, cervical, esophagus
 - Incubator sites: bladder, gastric, multiple myeloma, uterine
 - Incubator program was the “on-ramp” to build the necessary modeling capacity for the development of new CISNET cancer sites
- Current cancer sites together represent 62% of incident cancers in the US annually

Why use a CISNET modeling approach?

- Evidence gaps not filled by clinical trials or observational studies
- New data collection not feasible because of ethical, financial and/or time constraints
- Modeling synthesizes multiple sources of data and evidence
- Provides insight into unobservable natural history
- Useful for both designing and evaluating policy, emerging technologies and clinical questions
 - Project lifetime and long-term outcomes in timely manner by extending data on shorter term outcomes
 - Extrapolate to compare alternatives simultaneously and ask range of questions (“what if...”)
 - Evaluate drivers of past and impact on future trends

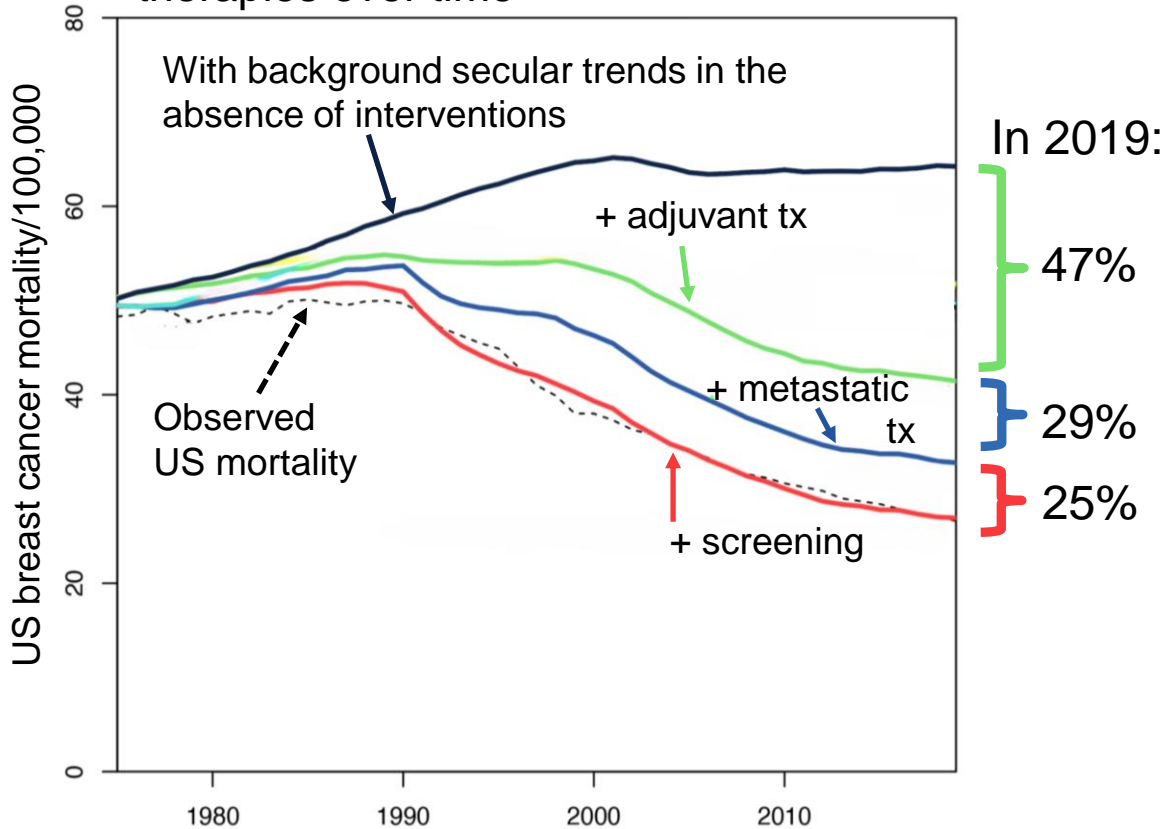
Two recent examples of CISNET's impact

- What contributed to decline in US breast cancer mortality since 1975?
 - CISNET modeling able to tease apart simultaneous effects of secular trends in incidence, increasing screening use, improving adjuvant and metastatic therapies over time



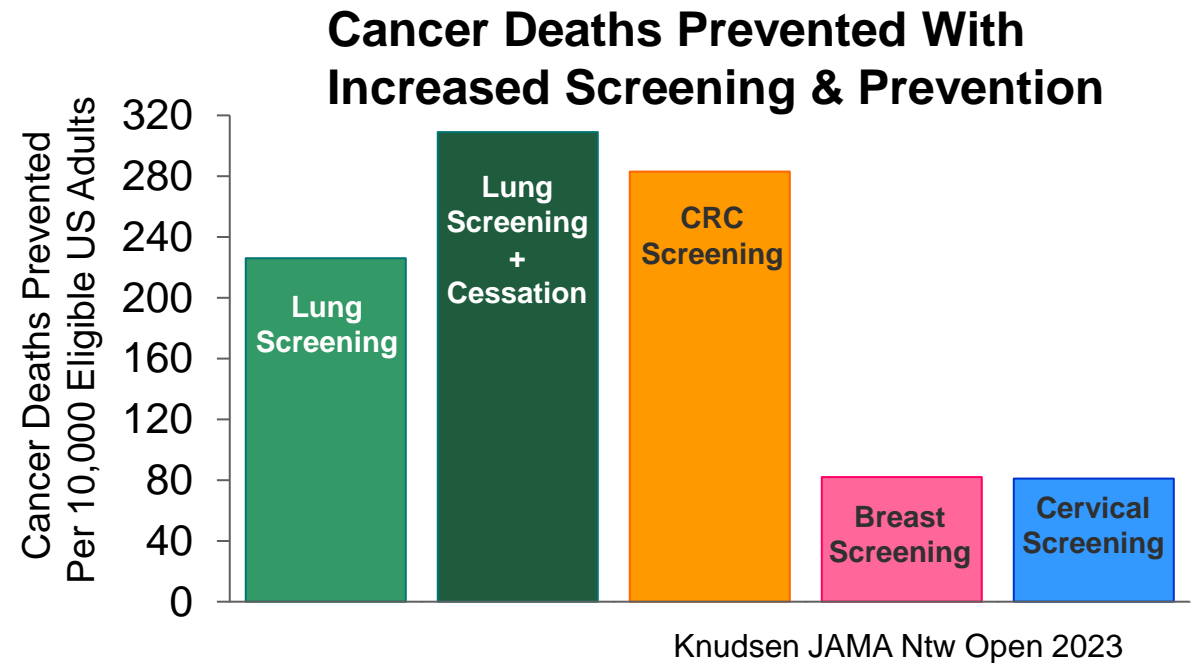
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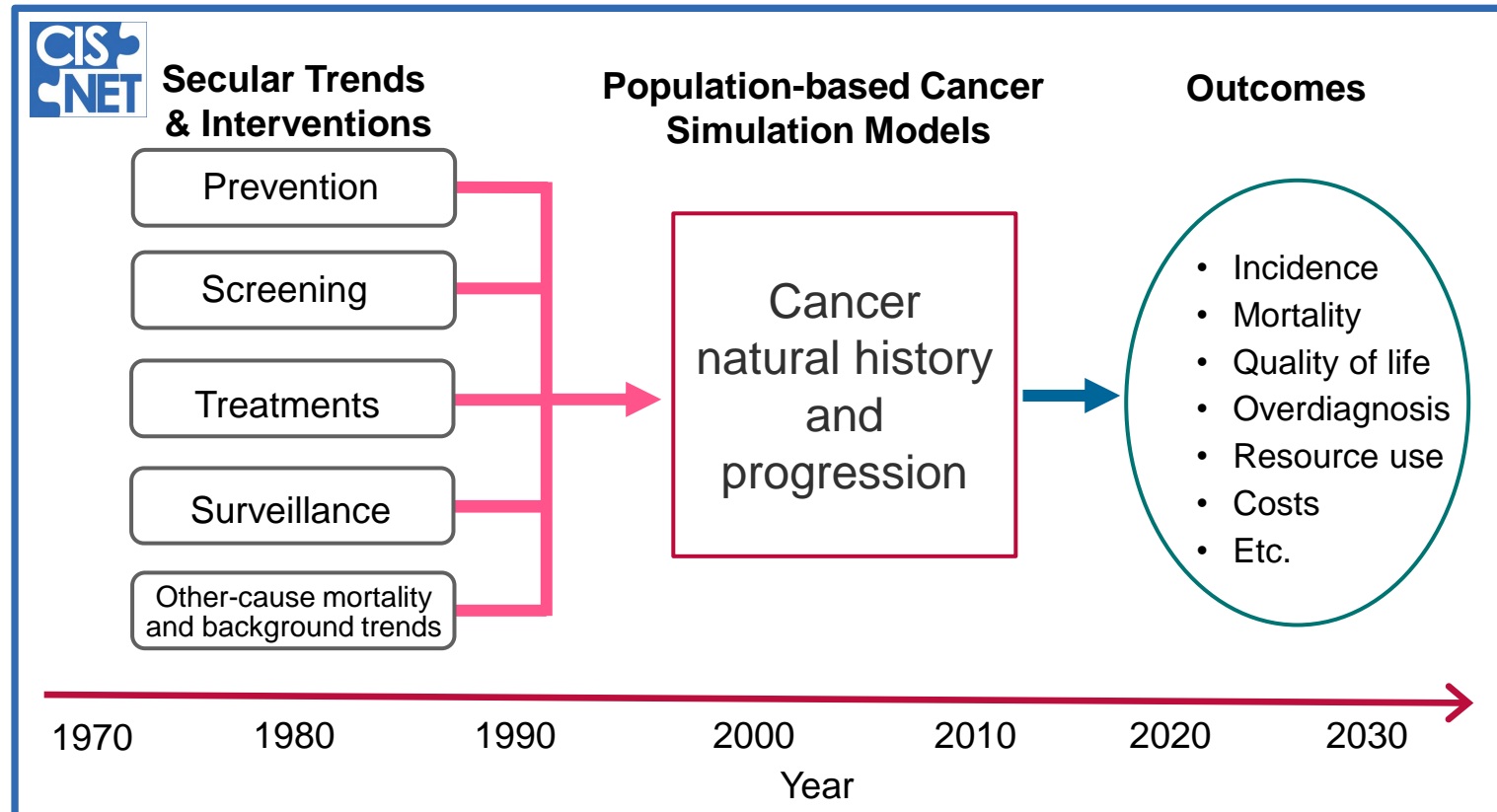


Berry NEJM 2005; Plevritis JAMA 2018; Caswell-Jin JAMA 2024

- How many more cancer deaths could be prevented in the future by increasing screening use?
- CISNET estimated >15,000 deaths could be prevented if 10% more of the eligible 2021 US population used recommended lung, colorectal, breast, and cervical cancer screening tests



New pressing policy and clinical evidence gaps where CISNET modeling can be deployed



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Impact of social determinants of health and equity considerations for policy

5

Understanding impact of policy changes to reduce disparities and achieve milestones like Cancer Moonshot, Healthy People 2030

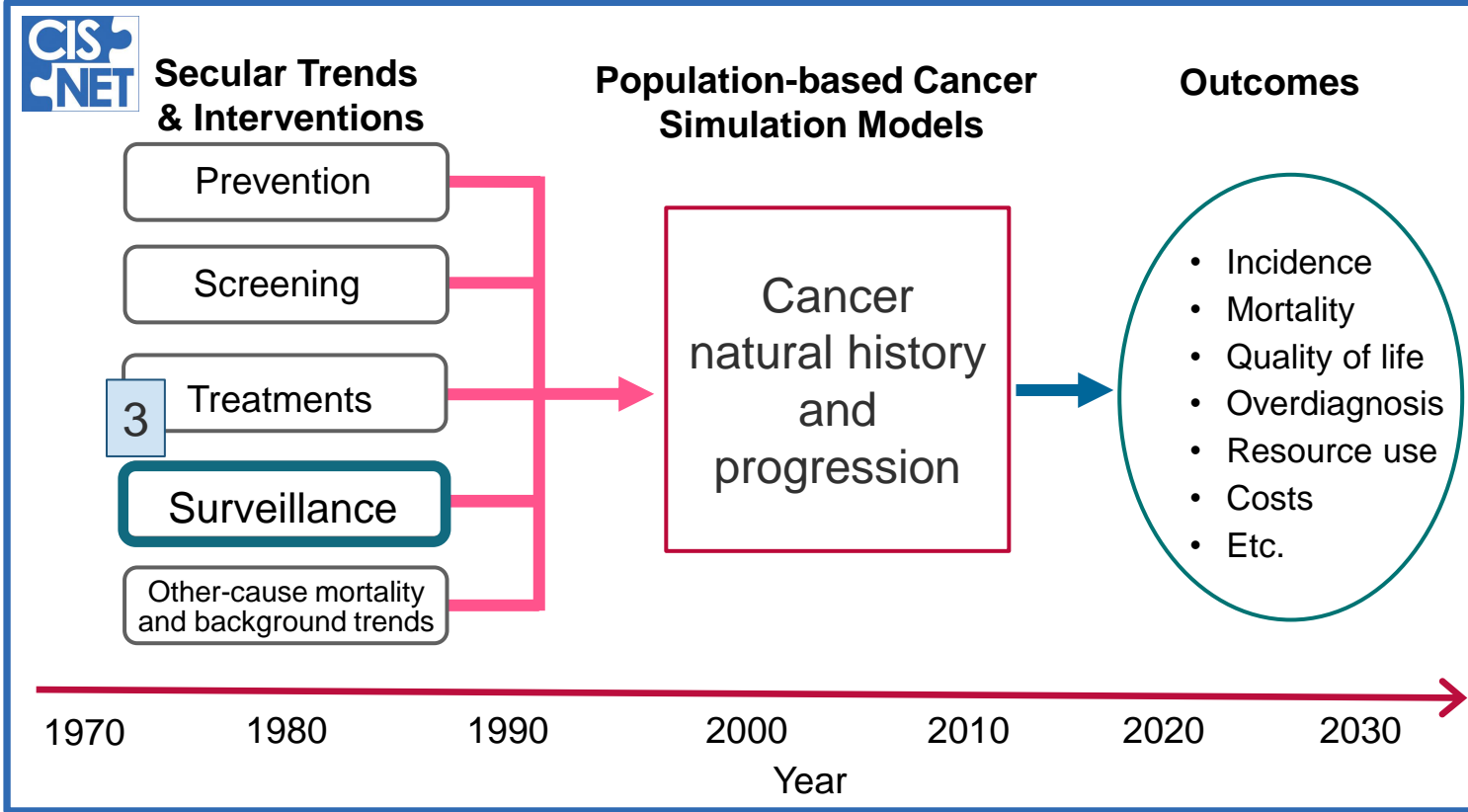


1

Risk factors and drivers of early onset cancers

2

Evaluating emerging technologies including AI, blood-based biomarkers, targeted treatments



6

Backbone of tailored clinical and policy decision tools



7



Informing guidelines, implementation/de-implementation decisions of interventions in real-world settings at local, national, international levels

Why is a CISNET RFA U01 necessary?

- CISNET uniquely supports comparative modeling with multiple modeling groups
 - Multidisciplinary teams including mathematical simulation, decision and data sciences, engineering as well as clinical, health services research and epidemiology
 - CISNET's junior investigator program is pipeline for next generation
- Internationally recognized and trusted
 - Gold standard of rigorous modeling methods
 - Awarded SMDM's John M. Eisenberg Award for leadership in communicating medical decision making principles and findings to policy makers, clinicians, and the general public
- NCI and cancer communities rely on CISNET to address policy and clinical issues
 - CISNET funding provides infrastructure that allows groups to be nimble and respond to emerging challenges
 - Provides foundation that allows the models to be leveraged in many other research projects and funding applications across the cancer control spectrum
- A reissuance RFA U01 is necessary to ensure the quality and breadth of comparative modeling work continues in a coordinated way
 - Synchronization of funding will continue to foster a stable environment for the community of modelers and encourage cross-cancer site interactions and collaborations

Proposed budget for reissuance

- Open competition RFA to support 8 cancer site specific multi-PI U01s
 - 10 eligible cancer sites: breast, prostate, colorectal, lung, cervical, esophagus, bladder, gastric, multiple myeloma, and uterine
 - Cancer site specific award structure with strict funding limits for each component: coordinating center, 2-6 independent modeling teams, junior investigator program and rapid-response allocation to facilitate nimble response to emerging issues

Mechanism	Clinical Trial	Awards	Years	RFA Direct Costs Per Year	Year 1 Total Costs
U01	Optional	8	5	\$8M/year	\$14M

- Proposed set-aside is level with the prior 2020/2021 CISNET RFA set-aside

BSA subcommittee feedback and responses

- **Clarification for number and inclusion of cancer sites**
 - Open competition for applications
 - 5 incubator sites (will graduate to full CISNET program) and 5 legacy sites. No new cancer sites.
 - Requested set aside is level with 2020 request → only up to 8 of the 10 eligible cancer sites will continue
 - More cancer sites could be included with additional resources
- **Increase data sharing**
 - Resource and data sharing, transparency, model accessibility and collaboration are core CISNET values
 - CISNET is a trusted resource, in part, because of commitment to these values
- **Promote cross-cancer collaborations especially around multi-cancer detection tests and disparities**
 - RFA will emphasize that grantees will be expected to build in capacity for cross-cancer projects
- **Consider adding a cross-cancer coordinating center to facilitate shared resources**
 - At proposed budget request, the proposed structure is the most efficient use of resources
 - A cross-site coordinating center could be added with additional resources
- **Recommendation to further increase outside collaborations and relevance of research**
 - RFA will encourage more connections and partnerships with relevant clinical, policy partners in cancer community
- **Include SDoH and equity**
 - RFA includes priority research area and builds upon current work
 - Limitation: detailed data stratified by race/ethnicity or other key subgroups of interest not always available
 - Modeling offers opportunity to ask “what if” questions and see potential impact

Thank you!

- Questions?