Cardiovascular Disease Policy Model Research Group

The Cardiovascular Disease (CVD) Policy Model is a population-level state-transition computer simulation of cardiovascular disease. It has been used for more than 30 years to represent trends in CVD risk factors, outcomes and healthcare costs in the United States adult population.

Research using the CVD Policy Model focuses on understanding trends in CVD risk factors and treatments and evaluating the population-level impact of interventions aimed at reducing the burden of cardiovascular disease.

The model has been used to evaluate the impact and cost effectiveness of CVD prevention and treatment strategies ranging from public health interventions to clinically targeted approaches. Examples of past projects include assessing the impact of dietary salt reductions, soda taxation, emerging therapies to reduce low-density lipoprotein cholesterol, and implementation of national guidelines for treating elevated blood pressure.

Though originally designed to be nationally representative of the US population, the model has been adapted in recent years to examine subpopulations such as Veteran's Affairs population and non-Hispanic blacks, as well as populations of other countries including Mexico, China, Argentina and Canada. This work has resulted in several high impact publications in the New England Journal of Medicine, JAMA, Annals of Internal Medicine, Circulation and Health Affairs.

The CVD Policy Model research group is a bicoastal, multi-disciplinary team of investigators and staff using computer simulation methods to address clinical and policy-oriented research questions related to cardiovascular disease. Dr. Kirsten Bibbins-Domingo leads the west coast CVD Policy Model team, which is located in the Department of Epidemiology and Biostatistics at the University of California San Francisco. She and her team collaborate closely with Drs. Lee Goldman and Andrew Moran at Columbia University in New York as well as diverse investigators, staff and trainees undertaking computer simulation modeling projects at UCSF, Columbia University and other institutions in the United States and around the world.

Samples of our published work can be found below. Researchers interested in learning more about our work should contact Dr. Kirsten Bibbins-Domingo [1] (CVD Policy Model principal investigator) or Joanne Penko [2] (CVD Policy Model project manager at UCSF).
Selected Publications Based on the CVD Policy Model

Upcoming Publication

Effect of Money-Back Guarantees on the Cost-Effectiveness of Proprotein Convertase Subtilisin/Kexin Type 9 Inhibitors

Outcomes-based pricing has been touted as a novel payment model for expensive drugs that improves access to new, high-cost drugs. Using the case of new lipid-lowering agents called PCSK9 inhibitors, we argue that while it may have worked well in other settings such as expensive chemotherapeutic agents for cancer, outcomes-based pricing is unlikely to improve the cost-effectiveness of expensive preventative therapies that have to be taken lifelong.

Full manuscript can be found at Annals.org [3]

Online Supplement [4]

Health Policy


Clinical Guidelines

- Pletcher MJ, Lazar L, Bibbins-Domingo K, Moran A, Rodondi N, Coxson P, Lightwood J,
Clinical Medicine


Global Health


Interested Collaborators

Investigators interested in working with the CVD Policy Model software can contact Dr. Bibbins-Domingo [1]. Please submit a 1- to 2-page research proposal and collaboration plan for the CVD Policy Model team to consider. The team will talk with interested researchers in order to assess the feasibility of collaboration and clarify the research questions, particularly regarding whether the CVD Policy Model is designed to address the question.

The CVD Policy Model Research Group has developed a Creative Commons agreement that establishes rules for collaboration with outside researchers whose proposals are approved. The agreement allows appropriate use of the software and asks collaborators to share modifications and improvements to the software with the CVD Policy Model Research Group.

Creative Commons Agreement [5]
Opening for Post-Doctoral Scholar

The Cardiovascular Disease Policy Model research group, seeks a highly motivated scholar to join our multidisciplinary team for a 2-3 year postdoctoral fellowship. The fellow will collaborate closely with Drs. Kirsten Bibbins-Domingo and Dhruv Kazi to develop and disseminate original research that supports the group’s research agenda and enhances the capabilities of the CVD Policy Model. Additional details are available here [6].

Contact Us
About Us
UCSF Main Site

© 2018 The Regents of the University of California

Source URL: https://epibiostat.ucsf.edu/cardiovascular-disease-policy-model-research-group

Links
[1] mailto:kirsten.bibbins-domingo@ucsf.edu
[2] mailto:joanne.penko@ucsf.edu