

Systems Dynamic Modeling to Reduce the Burden of Diabetes in Washington

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Abstract: Healthy People 2010 aimed to reduce diabetes prevalence by 38%. Systems Dynamic Modeling (SDM) is a useful framework for modeling population stocks and flows and allows testing of interventions to examine the impact on long-term prevalence rates of disease. This presentation reviews population stocks including youth, adults with normal glycemic levels, adults with pre-diabetes, adults with undiagnosed diabetes and adults with diagnosed diabetes and challenges the audience to think about interventions designed to control flow between each population stock. The application of SDM to the study of diabetes demonstrates that reducing diabetes prevalence requires drastic reductions in population obesity. Additionally, the diabetes SDM provides insights into the need for primary prevention, program integration and reduction in health disparities. Panel presenters reflect on the analysis of population flows to reduce the burden of diabetes in the State of Washington from 3 perspectives: implications of model runs using Washington-specific data; the manner in which the model supports chronic disease program integration and “upstream” work; and a front line look at how this model can be used to plan community health efforts. Panel presenters include a State health leader and epidemiologist, the leader of a 100+ member regional diabetes coalition, and the State’s director of the Diabetes Prevention and Control program.