

Modeling Prioritization of Health Care for Complex Patients Using Archimedes

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Description

While guidelines created by professional organizations and government agencies offer the potential benefits of improving the quality of medical care and reducing health care costs, they have the drawback of not addressing the complexity of individual patients. This research examines the impact of health care interventions on patients with diabetes mellitus, hypertension, and hypercholesterolemia with and without pre-existing complications.

Specific Aims

1. The proposed research will use a unique simulation software program, Archimedes, to examine the impacts of health care interventions for a set of prototypical patients with diabetes mellitus, hypertension, and hypercholesterolemia with and without pre-existing macrovascular and/or microvascular complications (coronary artery disease, myocardial infarction, congestive heart failure, stroke, retinopathy, nephropathy, and peripheral vascular disease).
2. Blood pressure control in patients with diabetes requires individualized decisions to balance treatment risks and benefits. However, little evidence is available to guide such decision making. Therefore, this study aims to investigate predictors, patterns and outcomes of blood pressure management among patients with diabetes and coexisting health conditions. The long-term goal is to use these findings to optimize existing blood pressure management guidelines for patients with diabetes.

Main Objective

This research used a simulation software program, Archimedes, to examine the impact of health care interventions on patients with diabetes mellitus, hypertension, and hypercholesterolemia with and without pre-existing complications.

Chronic Conditions Considered

Diabetes mellitus
Hypertension
Hypercholesterolemia

Preventive Services Considered

Not applicable

Study Design & Population

Computer simulation model

Strategies Addressed from the National MCC Strategic Framework

- 1.D. Implement and successfully use health information technology
- 3.C. Address multiple chronic conditions in guidelines

