

## ABSTRACT

**Title:** Model-driven Generation of Individualized Clinical Care Plans to Support Protocol-Driven Clinical Process Management

**Authors:** Peter Miller, Vanderbilt HealthTech Laboratory, Jason Martin, Vanderbilt Medical Center

**Description:** Clinical protocols (also known as guidelines or pathways) founded on evidence-based best practices are becoming increasingly important in delivering the highest quality medical care. However, a protocol represents a generalized procedure with all branching possibilities. What physicians and nurses require is a clinical care plan individualized for a particular patient's situation. In addition, protocols are typically designed to describe a management strategy for a particular problem, managing sepsis in an intensive care unit (ICU) for example. Many patients have multiple problems each of which may be managed by a separate protocol. Composition of protocols can be complicated by potentially conflicting elements. The approach we are taking at Vanderbilt is a model-driven approach that will generate individualized patient care plans based on instantiation and composition of protocols. The completion of a care plan may require a physician to modify or add elements that could not be anticipated in the protocol. The tool being built by Vanderbilt enables the graphical specification of the protocol and subsequent generation of the plan. When the plan is completed, it can be executed. A graphic representation shows the elements that have been completed (and their results) and the remaining elements of the plan. It will be able to post reminders or alerts based on conditions that are being monitored as elements of the protocol.