

10 “Must-Haves” in a Clinical Quality Management System

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Must-Have #3

A Sophisticated Rules Engine of Clinical Care Guidelines that “Thinks Like a Provider,” Not Like a Computer System

Abstract

One of the keys to ensuring a successful clinical quality improvement program is selecting a supporting management technology with certain critical elements. This series of articles highlights these items and describes why they are so important for high-quality patient care and why they set the benchmark for transformative clinical quality.

Introduction

For a busy practice, one of the great benefits of a CQMS is a reminder system that alerts clinicians and staff to the prevention, screening and disease management services due for each of their patients. These reminders greatly increase care quality, save time and can generate practice revenue.

Reminders are generated through a rules engine. The rules engine is, a CQMS component that systematically compares patient registry data against a comprehensive table of care guidelines in order to identify patients due for services each day. The resulting reminders can be utilized at the point-of-care—they’re clearly listed on the patient encounter form—as well as in patient outreach tools such as call lists, letters and emails.

Without a reminder system, ensuring that each patient’s care needs are always addressed requires a practice to constantly sift through paper charts and evaluate each chart against care guidelines. This takes

an extraordinary amount of time, and remembering hundreds of guidelines is very difficult.

For a practice to successfully adopt a CQMS, the method in which reminders are managed is very important. An effective rules engine delivers reminders that are accurate, timely and trusted.

Thinking like a provider

Care guidelines are typically written with a single problem or disease focus, and fail to capture the complexities of actual clinical care. In order to be clinically relevant, a rules engine must translate a narrowly focused guideline into the complex world of clinical care in order to provide reliable information to clinicians and the care team.

“Thinking like a provider” requires the ability to process a rich set of information such as demographics (i.e., gender, age), vitals (i.e., BP, BMI), lab values (i.e., HbA1C, HDL), co-morbid diagnoses (not just a single diagnosis) and lifestyle considerations (e.g.,

exercise, smoking status) to ensure that all the variables of clinical care are considered. As reminders are delivered, a rules engine needs to “understand” the status of care guidelines relative to the patient and eliminate superfluous reminders. The following are illustrative of ways that a good CQMS reminder system ought to “think like a provider:”

- A patient with diabetes should receive routine, annual microalbuminuria screening according to guidelines. However, if a given patient has already been identified with microalbuminuria and placed on an appropriate medication, additional reminders for screening for that patient are no longer clinically relevant.
- A lab test is ordered because of a reminder. Before the lab result is returned to the practice, however, the patient has a subsequent office visit. The reminder system should note that the lab test was ordered and not just re-prompt for the test to be ordered.
- A patient is due for a flu shot, but the vaccine is not available to deliver due to the time of year. Therefore, the reminder system should “know” not to prompt the provider regarding the vaccine.
- A patient with co-morbidity, such as coronary heart disease and congestive heart failure should have only one reminder presented to place the patient on a beta blocker, not two.

Because care guidelines may differ for different provider groups within a health system, a rules engine should also be able to configure guidelines differently to groups of providers and, to better fit into a practice, provide the ability to customize the text of a reminder so that it makes clinical sense.

Flexibility has only one path

An effective rules engine must be able to quickly adapt to guideline changes and support easy addition of new guidelines. Within the construct of a rule engine, there is only one way to accomplish this—a table-based guideline list versus a programming-based one.

A table-based rules engine lists guidelines in a simple grid, much like a spreadsheet form. Fields are filled in: “diagnoses,” “age in days,” “gender,” “action

to take,” etc.; the rule is saved and it is immediately available to the rules engine.

By contrast, a programming-based rules engine requires a computer programmer to custom-create a small routine in a programming language for each guideline. This is complex and can require a considerable amount of time and cost. The user organization can experience considerable opportunity cost the longer it takes to implement new guidelines.

Summary

A rules engine is a sophisticated element of a CQMS, and this sophistication is what creates a valuable clinical care tool. A rules engine must be able to access and analyze the proper care data, present it in a rational manner and be flexible to quickly adapt to changes in care guidelines. Without accuracy, a provider has to cognitively analyze each reminder to ensure validity and the time required to do this will negate any gain. If a provider is continually prompted inaccurately, trust is diminished and the system will not be used.

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