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The New Information Paradigm
for Case Managers

By Garry Carneal, JD, MA

"The best thing about the future is that it comes only one day at a time," remarked a perceptive Abraham Lincoln. Considering the fast-pace of change and innovation in today's medical management arena, insight such as this is a welcome reminder. Equally welcome is that many of these advancements have been spurred by the need to improve patient health outcomes and lower costs. Clearly change is good.

New information conduits

It wasn't long ago when health plan sponsors began utilizing paper-based and linear decision-making methodologies when caring for patients. Traditional managed care applications, once dominated by utilization review programs or specialty referral requirements, strictly parameterized how care coordination occurred. Fortunately today, the medical management system utilizes a much more dynamic, interactive and customized approach when supporting the patient. This is achieved in large part by the expansion of information technology platforms that support more advanced decision-making techniques and mobilize the resources necessary to support a complex care-management program. For example, a wide range of specialty guidelines, which provide key navigation points for the clinician, can be integrated into one interactive and easily accessible online resource. Figure 1 highlights how the new generation of health IT systems utilize a wide-array of data inputs, data warehouse processing applications and reporting tools.
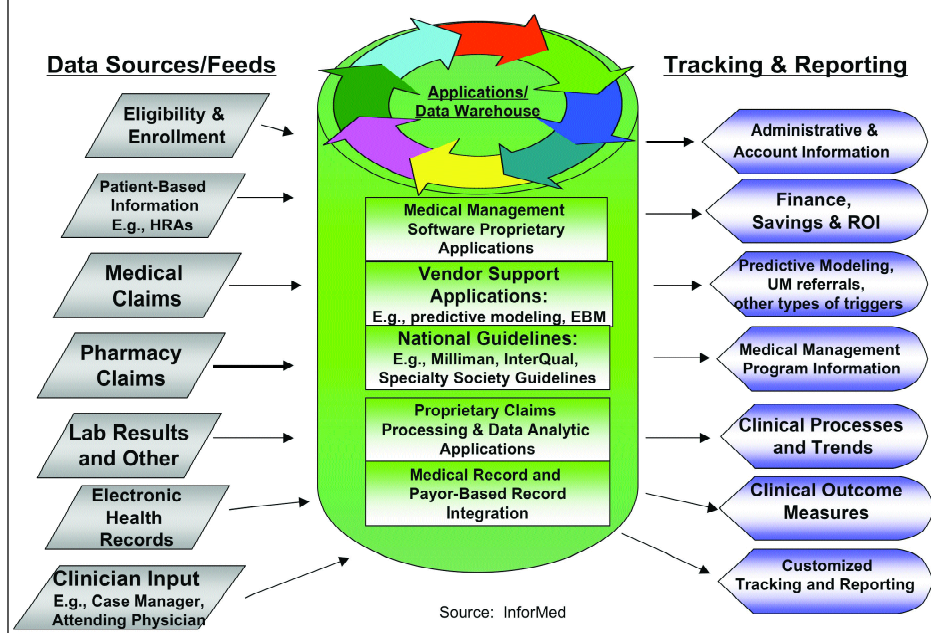
The end result: A consensus reached by most medical management experts around the country that a siloed or fragmented approach to medical management will not produce the same level of health outcomes and cost savings that an information-driven, integrated approach can. But some caution is required. New information platforms and portals can create a number of challenges that case managers must be vigilant about.

Predictive modeling stratification

One of the most dramatic medical management workflow enhancements in recent years is the addition of predictive modeling tools to help screen patients for chronic and expensive conditions in any given health plan population. Historically, patients were screened for potential case and disease management opportunities mainly through diagnostic, procedural and utilization review triggers. Under this traditional model, patients usually were triggered immediately before, during or after an episode of care. Today's predictive modeling, however, provides an effective means to identify risk and strategize long before patients actually experience adverse clinical outcomes and incur significant costs.

Figure 1: Health Information System Overview Highlights

Data Sources/Feeds

- Eligibility & Enrollment
- Patient-Based Information E.g., HRAs
- Medical Claims
- Pharmacy Claims
- Lab Results and Other
- Electronic Health Records
- Clinician Input E.g., Case Manager, Attending Physician

Applications/ Data Warehouse

Medical Management Software Proprietary Applications

Vendor Support Applications: E.g., predictive modeling, EBM

National Guidelines: E.g., Milliman, InterQual, Specialty Society Guidelines

Proprietary Claims Processing & Data Analytic Applications

Medical Record and Payor-Based Record Integration

Tracking & Reporting

- Administrative & Account Information
- Finance, Savings & ROI
- Predictive Modeling, UM referrals, other types of triggers
- Medical Management Program Information
- Clinical Processes and Trends
- Clinical Outcome Measures
- Customized Tracking and Reporting

Source: InforMed

A variety of data inputs, data warehouse processing applications and reporting tools are being integrated into health management IT systems.

Predictive modeling assigns risk scores to individuals based on past medical utilization, pharmacy data, lab results and demographic information. These scores help identify patients who can benefit most from case and disease management interventions, thereby allowing case managers to intervene in a proactive way and, ultimately, impact clinical and cost outcomes.

The challenge for case managers is to determine how much predictive modeling is appropriate. Simply put, when does a clinician hit a point of diminishing returns when using a predictive modeling screening tool?

This question raises several related issues. If the risk metric is expressed in a dollar amount, what dollar threshold should be established to identify and further assess patients regarding the efficacy of medical management inter-ventions? Should it be $1,000, $2,500, $5,000 or $10,000 in predicted costs over the next 12 months? What are the best ways to further screen (such as through telephonic nurse-driven health risk assessments) to make sure that each individual is a proper candidate for specific medical management intervention? When and how should patients with predicted co-morbidities be managed? How do we balance the cost versus the potential clinical gain? What should be the target return on investment (ROI) for year one, two and three?

Even the most advanced medical

management organizations are just now establishing workflow protocols to answer these questions and address these issues and opportunities.

Evidence-based medicine accountability

Another recent and exciting medical management workflow enhancement is the ability to track evidence-based medicine (EBM) compliance through an automated system that compares patients' or designated population's claims experience with evidence-based guidelines for quality care. One such tool, called EBM Connect, has been developed by Ingenix/Symmetry. Tools like this apply rules-based criteria to identify gaps in care for major practice areas and chronic conditions. The EBM Connect application also assigns an adherence rating in five categories — disease management, medication adherence, patient safety, care patterns and HEDIS standards — that provide a clinical focus for the case manager.

EBM tools can take the guesswork out of identifying those individuals or groups that have compliance gaps based upon nationally recognized medical guidelines. In addition, these applications can measure improvements in meeting national standards — both at patient and population levels.

Figure 2 details one type of EBM scorecard, which can be generated very quickly and is used to examine compliance with national diabetic practice standards over a three-year period. Using the EBM Connect tool in conjunction with a claims data warehouse engine, case managers can generate a full range of reports covering a broad array of disease states and co-morbidities. Hyperlinks allow case managers to efficiently drill down to patient levels to review individual EBM performances as well. Figure 3 highlights how ▶

## Figure 2: Diabetes Mellitus Evidence-Based Medicine (EBM) Scorecard
Taft-Hartley Self-Funded Health Plan
246 Identified Diabetics

			Compliant											
Care Pattern	December-06				Q4-2005				Q4-2004			
	No	Yes	Tot	%	No	Yes	Tot	%	No	Yes	Tot	%
Patient with a LDL cholesterol in last 12 reported months.	102	141	243	58%	100	128	228	56%	121	106	227	47%
Patient with an HDL cholesterol test in last 12 reported months.	101	142	243	58%	97	131	228	57%	119	108	227	48%
Patient with a triglyceride test in last 12 reported months.	102	141	243	58%	99	129	228	57%	123	104	227	46%
Patient that had an office visit for diabetes care in last 6 reported months.	123	123	246	50%	72	159	231	69%	101	131	232	56%
Patient taking insulin with evidence of self-monitoring blood glucose testing.	30	0	30	0%	26	1	27	4%	37	0	37	0%

Source: InforMed

Scorecards help recognize patient and population compliance gaps and improvements as compared to national levels.

Figure 3: EBM Scorecard Summary
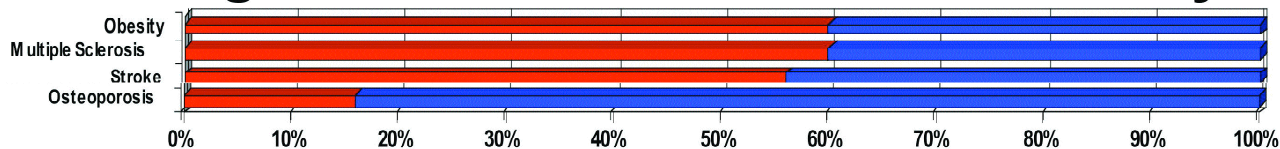
Red represents Participants NOT meeting EBM standards of care

Blue represents Participants meeting EBM standards of care

Source: InforMed

Charts and graphs that summarize patient and population scorecards are effective visual aides.

this information can be summarized in a chart form to track a full range of EBM trends for a targeted population.

With this information in hand, the challenge then is for case managers to develop and implement a customized medical management strategy for individual patients and attending physicians to promote the best outcomes. Case managers must select strategies to promote patient and physician engagement, which in turn will increase the likelihood of EBM compliance both at the individual and population levels. However, case managers may have only limited influence because external variables can impact or otherwise complicate care management plans such as benefit design, network structure and the community resources where patients reside.

Customized care plan applications

Insights that are systematically derived from claims history, predictive modeling, UR triggers, EBM guidelines and other sources allow case managers to know a great deal about patients before contacting them directly. In addition, case managers can utilize customized health risk assessments to help identify, manage and periodically re-assess patients' medical conditions or health issues.

Today, much of this information can be created automatically through a data warehouse system and then hosted within a payor-based record or a case management software application that mimics the look and feel of a physician's electronic health record (EHR).

Over time, the case-management-generated information system can hold much more information about patients than your average EHR application. For example, this online information platform can create and update individualized care treatment plans for patients with both short- and long-term treatment goals. Data integration with a calendaring function helps assure that case managers address all of the issues identified from the

data and ongoing assessments.

Similar to the challenges presented with EBM compliance, case managers must decide how much health information and supporting data should be reviewed, as well as how much of this information should be shared with patients and attending physicians directly. Case managers also need to determine which types of reporting formats (e.g., online or paper) are most appropriate to communicate effectively to respective patients, attending physicians and other key stakeholders.

In addition, each medical management organization must protect the privacy and security of this information as it is stored and used internally, and then shared externally with third parties.

Performance reporting feedback loops

The availability of data in the hands of case managers allows for more accurate and objective identification of cost savings. Having at their fingertips information on past utilization patterns with corresponding costs allows case managers to document savings more confidently when the data shows a clear change in utilization.

A robust information technology platform should allow the ROI calculations to become transparent by allowing an authorized individual, such as a corporate medical director, to drill down to the patient record level to see exactly how and when savings were logged into the system.

Also, information technology platforms as highlighted in Figure 1 allow for a wide array of clinical process and outcome measures to be reported. Many of these systems can detail and track many of the key components (e.g., patient and physician engagement levels, medication adherence, EBM compliance, utilization management appeals, case load tracking, etc.) of each medical management intervention.

Again, the question is how much financial and clinical reporting is enough? And how much is too much? Also, some precautions must be taken to interpret performance reports properly now that the case management process has become so transparent. And, in some instances, the data can be incorrectly tabulated or otherwise misleading.

The brave new world of change

Magical things can happen when electronic health information platforms are built, maintained and enhanced to support the medical management process. The $64,000 question then is how do case managers best utilize all of these data outputs and other supplemental information-based resources without suffering from information overload?

If the goal each day is to get the right information to the right stakeholder at the right time, case managers can accomplish this task in large part by taking advantage of a highly integrated and interoperable IT platform that systematically tracks any improvements or downturns in the quality and efficiency of care. But, we also must work as a team to oversee that these emerging information systems are used properly. ◎

Garry Carneal is a nationally recognized expert in the medical management field. He currently serves as President of InforMed Medical Management Services (IMMS) based in Annapolis, Md. From 1996 to 2005, he served as the President and CEO of URAC. During his tenure there, he oversaw the development of a number of medical management accreditation programs covering areas such as case and disease management interventions.