Decision Support: How Managed Care Uses Information to Take Action

by Ruth B. Bowen, MBA, CPHQ

HIM professionals are uniquely positioned to help managed care organizations develop an information plan for analyzing clinically and financially relevant data. The result? More effective decision making. In the fourth installment of the Journal of AHIMA's series on managed care, the author explains why decision support serves as an information cornerstone and how managed care organizations depend on sound information and decision support systems to make business and care delivery decisions-and how HIM professionals can play an important role.

In an increasingly complex and challenging healthcare environment, access to information is critical for a managed care organization (MCO). Executives, managers, and supervisors within an MCO depend on decision support systems that create and distribute vital information about cost, revenue, and service quality, as well as member, provider, and employer satisfaction.

The $60 million loss suffered by Harvard Pilgrim in 1999 highlights what happens when MCOs do not invest in strong decision support systems. For example, in early 2000, headlines in the online version of Managed Care proclaimed: "Byte by Byte, Harvard Pilgrim Choked on Unhealthy IT Systems," adding: "Harvard Pilgrim Health Care learned the hard way...HMOs need good information flow."[1]

The need for information touches all areas of an MCO-from identifying patient populations and providers to evaluating the cost of care and current contracts. Decisions made in these and other areas are driven by data that is collected, organized, and analyzed. HIM professionals have the training and experience to assist in all of these areas. This article offers an overview of the ways MCOs use information and shows how HIM professionals are uniquely suited to play a vital role in the design and operation of decision support systems that support MCOs.

What Is Decision Support?

A decision support system transforms data into actionable information. Consistent review and analysis of performance enables the organization to create knowledge and transform itself into a learning organization. The ability to drill down into data and model future performance based on historical results can help the organization develop business strategies essential for achieving clinical and financial objectives.

Decision support systems create and distribute critical information in a variety of formats to executives, managers, administrators, and supervisors throughout the organization. For example, a decision support system can support senior management with an executive information system (EIS) that gives users a top-down look at organizational results across a variety of dimensions including financial performance, clinical quality, and member satisfaction. Often, an EIS is used to produce an organizational report card or balanced scorecard that visually shows how well an organization or department is achieving its overall business goals. With today's technology, EISs can automatically push e-mail notifications or alerts to users when the system identifies performance that falls below expected levels. In essence, a decision support system monitors for unplanned results and anticipates the need for management intervention.

New and exciting technologies are making it possible for more users to have easy access to point-and-click information from their desktops. Using only a browser, a user can access an interactive data set focused on quality metrics or perhaps profitability. These interactive data sets, sometimes called "cubes," provide the ability to drill down into data or see data from multiple perspectives.

Decision support systems are also capable of supporting interactive, natural-language queries from a user's desktop. Add voice technology, and imagine asking your system to "list patients discharged last month with an admitting diagnosis of congestive heart failure and show admitting doctor, costs, and services" and then having the report appear on your screen, where you can print it or export it into a spreadsheet. And increasingly, more and more information is being published to an organization's intranet or pushed directly to users authorized to view it.

Data-driven Strategic Planning

Decision support systems are the cornerstone of strategic and business planning activities. MCOs use these systems to understand the populations they serve. What are the characteristics of a covered population? How old are they? How sick are they? What is the percentage of patients with chronic disease? What is the incidence of frail elderly? What services are they likely to need? Are there appropriate providers in the network to meet their needs? Market analysis that segments the population by variables like age, sex, geographic area, or history of prior illness is key to understanding risk, planning future growth, and setting rates.

Decision support systems create strategic information on which business and product decisions can be based. For example, some questions to be asked toward creating a strategic information set could include:

- is there an opportunity for a Medicare or Medicaid plan offering?
- are there sufficient providers in the network to support a specialty plan for cancer treatment?
- is enrollment increasing or declining in key areas?
- are members so dissatisfied with the level of service that the plan will lose market share?
- how should prices be adjusted next year to absorb pharmacy costs?

An MCO's decision support system must be able to summarize past experience and project future performance. Trends that suggest projected increases in the number of diabetics, a steep rise in pharmaceutical costs, or increased admissions can have significant effects on financial performance, and all signal the need for planning and management attention.

Understanding Performance

To be successful, an MCO must have a decision support system capable of producing the information needed by managers and administrators responsible for all aspects of an organization's performance including billing, financial management, quality management, clinical care management, contracting and pricing of services, provider reimbursement, and customer relationship management.

To better understand an MCO's critical information needs and how decision support factors into decision making, let's evaluate a few of these important areas within an MCO:

Service Utilization

HIM professionals who have produced provider reports that monitor utilization levels can play a similar role in an MCO environment, where utilization is closely scrutinized to monitor expenses and project financial results. A key metric for monitoring institutional utilization is annualized bed days per 1,000 members broken out by type of plan (such as commercial, Medicare, or Medicaid). Other important areas of utilization analysis include outpatient surgery days, skilled nursing days, referrals to specialists, and emergency room visits. MCOs also look closely at average length of stay and costs by diagnosis-related group, diagnosis, or service.

Analysis of the effectiveness and efficiency of the MCO's prospective and concurrent utilization review (UR) process is also important. Statistics about preadmission testing, denials, precertifications, and the ratio of UR coordinators to cases are important indicators of the UR process.

Special Focus: Drug Utilization

Analysis of drug utilization is becoming increasingly important. Because pharmacy expenses represent a significant and growing portion of an MCO's operation budget, the ability to trend and project pharmacy costs is a prerequisite for determining

what level of costs should be shifted to patients as copayments. Questions that an MCO's retrospective drug utilization review should be able to answer include:

- what is the rate of generic drug use versus brand-name drug use? How do rates differ by physician?
- which brand-name drugs for which there are generic equivalents are most costly?
- which conditions have the highest costs in terms of drug use?
- how do physicians compare for similar populations of patients in terms of drug utilization?

Provider Profiling

Profiling capability in an MCO's decision support system is an essential function. MCOs profile physicians as well as healthcare delivery organizations on a variety of variables including cost, utilization, and quality measures. An MCO's decision support system also identifies deviations from expected standards of care. HIM professionals experienced with the physician profiling done by provider organizations can play a part in developing information that can be used to:

- identify physician practice patterns not consistent with an MCO's standards
- provide information to physicians about utilization and outcomes
- identify high-performing physicians who should receive additional reimbursement or bonuses
- focus utilization management activities
- model future financial performance

Classification and grouping systems are often used in profiling analysis to adjust for severity or predict resource utilization. Provider profiling in an MCO environment has all the pitfalls that HIM professionals face in provider organizations. Issues like whether the attending or consulting physician is actually responsible for services ordered, episodic linkage, and risk adjustment are inherent in any profiling system. HIM professionals with experience in the complexities of profiling, as well as an understanding of how classification/grouping systems are applied within MCOs, can provide valuable insight in this area.

NCQA and HEDIS Reporting

Employers as well as state and federal authorities require that MCOs meet accreditation requirements and demonstrate outcomes that can be compared across plans. The National Committee for Quality Assurance (NCQA) accredits the majority of MCOs and uses the Health Plan Employer Data and Information Set (HEDIS) measures as part of its accreditation process. Whether the MCO develops its own support for HEDIS or uses a vendor solution, an MCO's overall decision support architecture must support HEDIS reporting.

HEDIS is a set of standardized performance measures designed to give comparative information about the performance of MCOs. These measures are frequently aligned with public health concerns such as heart disease, asthma, and diabetes. In addition to measures derived from a plan's administrative data, HEDIS also includes results of patient survey data that measure member satisfaction. HEDIS measures give purchasers and consumers information that evaluates the quality of plans along a variety of dimensions including: 2

- effectiveness of care
- access to and availability of care
- satisfaction with experience of care
- health plan stability
- use of services
- informed healthcare choices (availability of new member orientation, education, language translation servics, etc.)
- health plan descriptive information

HIM professionals familiar with regulatory reporting may have noticed that some HEDIS measures are similar to those required by the Joint Commission. However, HEDIS measures are derived from an MCO data source that can link inpatient stays, outpatient visits, and retail pharmacy data to an enrolled member. Unlike provider data, where data linkage across the continuum is almost always problematic, HEDIS measures such as "comprehensive diabetes care" and "cholesterol management after acute cardiovascular events" can be derived from billing data submitted throughout the continuum of care.

Member Satisfaction and CAHPS

To maintain its market share, an HMO must monitor member satisfaction. Healthcare 2000, Deloitte & Touche and VHA's annual environmental scan of healthcare in the United States, notes that HMOs consistently rank below non-HMO plans in every aspect of satisfaction mentioned, with the greatest differences in areas such as making appointments, overall quality, access to care when needed, and access to specialty care. One-fourth of HMO patients reported delays in receiving care, obtaining approvals, and obtaining specialist referrals.3

Sponsored by the Agency for Healthcare Research and Quality, the Consumer Assessment of Health Plans Study (CAHPS) uses standard questionnaires to collect and report consumer satisfaction with their health plans. CAHPS measures are required by the Centers for Medicare and Medicaid Services (CMS, formerly HCFA) to help Medicare beneficiaries select Medicare managed care plans and can be submitted with HEDIS measures. Examples of CAHPS measures include:

- getting care
- getting needed care quickly
- how well doctors communicate
- courteous and helpful office staff
- rating of doctor or specialist

NCQA's State of Managed Care Quality report for 2000 identified a strong correlation between clinical quality, as measured in HEDIS, and member satisfaction, as measured by CAHPS. Plans with the highest HEDIS scores have the most satisfied members.4

HEDIS and NCQA accreditation data are aggregated into the Quality Compass database used by employers, consultants, and others to select and manage their health plans. The 2000 Quality Compass included more than 60 HEDIS measures, including comprehensive diabetes care, antidepressant medication management, and cholesterol management after acute cardiovascular events.

MCOs measure service quality to increase member satisfaction and control costs. For example, an MCO can look at rates of admissions for diagnoses such as cellulitis, diabetic coma, gangrene, hemorrhage secondary to anticoagulant therapy, low birth weight, or septicemia as indicators of inadequate or improper outpatient care that is likely to result in higher costs and lower overall member satisfaction.

Although cost is still the most important factor considered by large employers when selecting a plan for their employees, large employers generally consider quality reporting to be important as well. Given limited information system budgets and resources, most MCOs focus on quality measures that are either mandated by regulatory agencies or required for accreditation. As a result, HEDIS quality measures have become the industry standard. Examples of HEDIS clinical quality measures used for the Managed Care Quality 2000 report include:

- adolescent immunizations
- advising smokers to quit
- antidepressant medication management
- asthma medication use
- beta blocker treatment after a heart attack
- comprehensive diabetes care
- controlling high blood pressure
- follow-up after hospitalization for mental illness
- prenatal care in the first trimester
- management of menopause surveys

Managing Health with Information

Disease Management

To manage costs associated with chronic conditions and improve member satisfaction, many MCOs are adopting aggressive disease management programs. These programs target specific populations of patients in which a focus on preventive measures, including education, self-management, and compliance with diagnostic and therapeutic regimens, is likely to prevent costly complications and hospital admissions.

MCOs have developed initiatives to manage conditions such as diabetes, asthma, high blood pressure, congestive heart failure, and depression. A focus on women's health might include breast cancer screening, prenatal HIV testing, maternity management, and programs targeted to reduce emergency room visits and hospital stays for newborns. And increasingly, programs target the frail elderly.

Disease management programs use decision support systems to understand the prevalence of at-risk patients in a population, identify specific patients who would benefit from disease management programs, and monitor the outcomes associated with interventions.

Disease management programs aimed at diabetic or potentially diabetic patients have proven to be successful in reducing complications associated with diabetes. A recent report from the Centers for Disease Control and Prevention (CDC) indicates that MCOs face increased financial risk in terms of diabetes, which increased by 6 percent in 1999 and by 33 percent between 1990 and 1998. According to the CDC, diabetes cost the nation $98 billion in 1997. If trends continue at the current rates, said CDC director Jeffrey Koplan, MD, MPH, the impact of health and medical care costs in future years will be overwhelming.[5]

With decision support systems, an MCO can mine its data to assess the risk of diabetes in a covered population and identify patients who are candidates for a diabetes management program. Queries can select patients based on variables like prior diagnosis or procedure code, age, sex, specific geographic area, medication history, laboratory result data, or charted data. For example, if charted weight data were available, an MCO would be able to identify obese patients more at risk for diabetes.

With these types of data, an MCO is able to assess the rate of diabetes in the population. It can identify patients to be included in special programs. This might involve mailing educational information to the patient, enrolling patients in special programs, or direct case management targeted to reduce complications such as heart disease, stroke, blindness, high blood pressure, kidney disease, and amputations.

A decision support system is also critical in understanding outcomes associated with interventions in disease management programs. Diabetes outcome measures might include per-member-per-month (PM/PM) costs, the rate of patients who had retinal exams, or rates of complications like kidney disease or stroke. Survey data can also be used to derive rates of the patient's perceived level of health, compliance with self-monitoring, or satisfaction with the quality and availability of services. An MCO's decision support system will also be able to profile outcomes by physician to identify physicians for whom increased focus on disease management can result in greater compliance with treatment standards.[6]

Because growing numbers of MCOs are contracting with vendors of disease management systems, NCQA has announced it will accredit and certify disease management programs. NCQA released a draft of its disease management program standards in June and is scheduled to issue final requirements by the end of 2001.

Case Management

High-cost case management programs target patients likely to have disproportionately high treatment costs. Populations targeted might include those with active AIDS, cervical spinal cord injury, renal dialysis, or cancer. As in disease management programs, decision support capability is used to identify patients who meet the criteria for case management and to provide information about financial, clinical, and satisfaction outcomes for these patients.

Predictive Health Assessment

MCOs can also benefit from using predictive decision support systems that identify patients at risk of developing serious and costly conditions. Some companies offer software that mines data to identify high-risk or high-cost patients and stratifies them for referral to case management. Others offer predictive software that uses psychosocial factors to identify patients likely to be noncompliant with recommended therapies or lifestyle changes. While case management programs that focus on patients already diagnosed with a disease can reduce healthcare costs by 10 to 20 percent, proactive programs that address a condition before it develops have been estimated to save 30 percent to 50 percent.[7]

Data: The Heart of an MCO's Decision Support System

Data about patients, providers, and services are the heart of any decision support system. Information is only meaningful when data can be trusted to be complete, valid, and reliable. HIM professionals can play invaluable roles in assessing an MCO's data

and in implementing programs for improving the quality of data used for analysis.

Most MCOs collect demographic, diagnosis, service (treatment), cost, visit, and ordered prescription data. As MCOs store and link additional patient data, including medical history, vital signs, immunizations, tests ordered, laboratory results, medications, and treatment rationale, their systems are similar to the computerized patient record systems used by providers. MCOs doing intensive case or disease management require a higher level of clinical data for effective or complete patient management.

Because MCOs must pull together data from different sources within the organization, data warehousing technologies are being increasingly employed in MCO environments. For example, pharmaceutical data are often not in the same database as enrollment data and visit- and service-level data.

By aggregating and standardizing data across an MCO, a data warehouse can give financial planners an integrated view of expenses essential for pricing next year's contract. Data warehousing also makes it possible to compare provider outcomes and look at an integrated set of outcomes (financial, clinical, satisfaction) for a population of patients.

Combinations of data can also create performance and efficiency metrics that are impossible to derive with a single data source. For example, a focus on congestive heart failure might include a variety of outcomes measures requiring different types of data. An efficiency measure like the ratio of case management hours per case would require data from the human resource or payroll system as well as visit-level data with diagnosis information. By including cost data, you could also understand the relationship between hours per case and total cost.

With satisfaction survey data, you could better understand how hours per case are related to overall satisfaction levels as well as overall costs. Finally, because a warehouse has data for all visits and services, you could look at outcomes measures like the rate of CHF admissions or mortality in the population and assess whether these outcomes were related to case management activity or whether they differed by geographic area, sex, age, provider, or other variable.

Support for Benchmarks

Just as provider systems use benchmark data to compare actual performance to standards, an MCO's decision support system includes benchmarks that help managers assess whether the organization's performance is in line with regional or national performance standards. A key benchmark is the PM/PM rate, or the amount spent per enrollee with breakouts by specialty areas, primary care, and hospital service. Other benchmark data might include statistics like days per 1,000 admissions, length of stay, or pharmaceutical expenses. A decision support system should also enable the organization to monitor performance against HEDIS standards or user-defined quality goals.

There are a variety of sources for MCO benchmarks, including NCQA, the American Association of Health Plans (Source Book on HMO Utilization Data), the Health Insurance Association of America (Source Book of Health Insurance Data), Aspen Publishers (Medical Benefits), Health Trends (The Sourcebook of Healthcare Trends), and the National Center for Health Statistics.

Security and HIPAA

MCOs that rely heavily on patient data for daily operations and business planning must meet HIPAA security requirements. As in provider environments, HIM professionals are uniquely positioned to ensure that MCOs comply with privacy and security requirements.

Opportunities for HIM Professionals

Access to comprehensive, timely, and reliable information is a fundamental requirement for an MCO. Knowledge of healthcare data analysis, statistics, research methodologies that support quality improvement, and information management all position an HIM professional to make significant contributions in the area of managed care outcomes.

HIM professionals should also consider opportunities working for vendors who design and market decision support systems for MCOs. The March 2001 issue of Healthcare Informatics spotlights vendors of managed care systems. Of the 276 vendors surveyed, 86 responded. Fifty-two indicated that they had decision support capability, and the table on page 69 shows the number of vendors who reported other functions that require decision support capability.[8]

HIM professionals might also consider opportunities in professional organizations and research organizations that share an interest in managed care outcomes. Examples include NCQA, the American Association of Health Plans, the Case Management Society of America, CMS, the Health Care Leadership Council, the Agency for Healthcare Research and Quality, and federal and state regulatory agencies.

Regardless of setting, HIM professionals can make important contributions to managed care by applying their skills to decision support systems that are the backbone of outcomes measurement. HIM professionals are positioned to take advantage of powerful and exciting information technologies that create and deliver to decision makers at all levels of the organization relevant and timely information-information that is key to improvement in the many dimensions of managed care.

Decision Support Required

According to a recent Healthcare Informatics survey, a number of vendors of managed care systems reported that they support either decision support or other functions that require decision support capability systems.

Function	Number
Case management	72
Decision support	52
Data warehousing/data mining	49
Disease management	44
HEDIS reports	31
Population health management	33
Quality assurance	44

Catch up on Managed Care

This article is the fourth in a five-part series on HIM and managed care. Check out the previous articles in this series:

- “How HIM Adds Value to Managed Care,” published June 2001
- “Can You Manage Managed Care?” published July/August 2001
- “Informatics in Managed Care: HIM Adds Value to Data” published September 20

All articles are available in the AHIMA Library.

Notes

1. Carlson, Bob. “Information Technology...Byte by Byte Harvard Pilgrim Choked on Unhealthy IT Systems.” Web version of Managed Care, February 2000, available at www.managedcaremag.com/archives/0002/0002.harvard.html.

2. A detailed listing of these measures is available at NCQA’s Web site at www.ncqa.org/Programs/HEDIS.

3. Veterans Health Administration and Deloitte & Touche, LLP. Healthcare 2000-A Strategic Assessment of the Health Care Environment in the United States. Irving, TX: Deloitte & Touche, Inc., 2000, pp. 88-92.

4. Information about NCQA’s State of Managed Care Quality report is available at www.ncqa.org.

5. “Diabetes Rates Rise Another Six Percent in 1999.” Press release issued January 26, 2001. Available at www.cdc.gov.

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