Lessons for Physicians and Health System Administrators

Roger G. Kathol, MD; Cheri Lattimer, RN, BSN; William Gold, MD; Rebecca Perez, RN, BSN; Deborah Gutteridge, MS, CBIS

Abstract: The 5% of patients using 50% of health resources commonly have interacting and persistent multimorbid illneses; concurrent mental health problems; impaired social networks; and/or difficulties in accessing care through the health system. To improve outcomes in these patients, it is necessary to overcome clinical and nonclinical barriers that lead to poor health, treatment resistance, high health care cost, and disability. This article describes an innovative complexity-based and outcome-oriented approach using integrated case management. It helps treating physicians and health administrators understand how to incorporate value-based case managers to optimize care for complex patients while better utilizing resources. Key words: case management, health outcomes, health economics, health reform, health complexity, integrated care

Integrated case management (Kathol et al., 2010) for patients with health complexity is an untapped opportunity for significant improvement in health outcomes and cost reduction in the United States (Huyse & Stiefel, 2006). It provides effective assistance for complex patients who have combinations of interacting chronic and/or multimorbid illnesses, including mental and substance use disorders; inadequate social networks; and limited, poorly coordinated access to needed health services by providing individualized support for the care recommended by patients’ clinicians. Patients with complex health problems, that is, those with interacting biopsychosocial and health system barriers to improvement, constitute the 5% that: (1) utilize 50% of health resources, (2) enter and remain on disability roles, (3) fall among those experiencing “medical” bankruptcy, and (4) tax public assistance programs because their illnesses do not improve as would be expected from their level of illness severity and acuity (Kathol & Gatteau, 2007). Because this group represents a small percentage of any population, it is possible to cost effectively implement care management.
procedures that attenuate adverse clinical and fiscal outcomes caused by persistent, poorly treated, and resource intensive health-related problems and the barriers that often accompany these problems.

Research trials, which employ care management interventions in populations with diabetes mellitus, chronic obstructive pulmonary disease, and congestive heart failure show that clinical outcomes, quality of life and functionality, patient satisfaction, and adherence to treatment improve when appropriately applied (Sutherland & Hayter, 2009). They also demonstrate augmented self-care and lower total health service utilization (Sutherland & Hayter, 2009). Findings related to return on investment are more variable. Disease management for high intensity conditions, such as, congestive heart failure, indicate that care management leads to net cost saving as do programs that case manage complex patients with multiple conditions (Goetzel et al., 2005). Management of patients with chronic conditions, such as, diabetes mellitus and asthma, that have greater variability on the acuity/severity and complexity spectra, on the contrary, are less consistently associated with a positive return on investment (Fetterolf et al., 2010).

In the current reimbursement environment, patients with health complexity have special meaning to the providers that treat them. Hospitals, clinics, and individual practitioners often try to limit the degree of their involvement in the comprehensive treatment of patients whose problems are complicated and interact. Such patients drain practitioner time, much of which is expended at substantially reduced reimbursement rates compared to other clinical activities, even when patients have high quality insurance coverage. More often, however, patients with health complexity are either uninsured or underinsured. The combination of high out of pocket expenses and insurance premium rate increases frequently forces patients with health complexity to transfer to public insurance products, general assistance programs, or to lose insurability altogether. Institutional providers and the clinicians to which their care has defaulted now deliver services with no reimbursement or at a reduced level of reimbursement that makes comprehensive care far less likely to happen.

This article frames an argument for the use of a new approach to case management, called integrated case management, which has the potential to improve care for patients with health complexity at a reduced cost to the system. It draws on what it considers core elements of existing care management or outcome enhancement programs with demonstrated albeit targeted success that assist patients with individual diseases (Goetzel et al., 2005; Mattke et al., 2007; Serxner et al., 2009; Unutzer et al., 2008) or that attempt to service the needs of patients in selected populations, for example, Geriatric Resources for Assessment and Care of Elders (GRACE), (Counsell et al., 2007; Counsell et al., 2009) Guided Care, (Boult et al., 2009; Boyd et al., 2010) and the Program for All-Inclusive Care for the Elderly (PACE) (Beauchamp et al., 2008). Integrated case management, however, expands on the successes of these programs by introducing: (1) a systematic and comprehensive complexity-based assessment and care plan development process utilizable regardless of management location; (2) combined mental and medical condition management capabilities without handoffs; and (3) the use of the same systematic approach for patients with single or multiple disorders with high and low illness acuity/severity, and in all age groups (Kathol et al., 2010). The authors are aware of no existing management program, which includes such comprehensive capabilities.

In collaboration with treating practitioners, integrated case managers proactively and preferentially identify complex patients; disentangle and score complexity factors in 4 domains: biological, psychological, social, and health system; and then collaboratively develop goals to actions with clients to overcome health barriers through a case management care plan tailored to the patient. The objective of integrated case management is to reverse barriers to improvement; stabilize health; return patients with health complexity to standard care; and measure program
effectiveness, using cost-based outcome-oriented methodology. Patient-centered medical homes (PCMHs), (American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, & American Osteopathic Association, 2007) staff model health maintenance organizations, (Haggstrom & Bindman, 2007) and accountable care organizations (ACOs) (Fisher et al., 2007) are ideal settings for the implementation of integrated case management because they may be aligned financially and organizationally. Nonetheless, every health plan, care management vendor, and hospital and clinic system should consider integrated case management for patients with complex health issues as a part of their quality improvement and cost containment strategies.

THE OPPORTUNITY—PATIENT-CENTERED MEDICAL HOMES AND ACCOUNTABLE CARE ORGANIZATIONS

During the next 4 years, recently passed health insurance reform legislation will add more than 30 million patients to the insured rolls in the health system (111th Congress, 2010). Many details remain to be worked out about how this influx of “paying patients” will be supported in their requests for care and how much it will cost. Regardless, this insurance reform is now law and coverage changes will occur. Although the Congressional Budget Office projects long-term cost savings related to this legislation, it will not happen without the introduction of more efficient ways for care to be delivered.

Collaborative efforts by PCMHs and ACOs will only add value to the health system if they are performance driven and capable of implementing creative clinical programs that include alignment of funding mechanisms. Although little attention has been focused on patients with health complexity as a part of this debate, they are an obvious place to start. They offer the potential for major cost reduction if poorly controlled health issues can be brought into check by improving clinical care and outcomes.

For instance, the annual cost of care for the top 2% and 5% of patients with health complexity has been consistently documented to be a third to a half of health costs (Figure 1) (Zuvekas & Cohen, 2007). Thus, if 100,000 patients average $5000 in annual paid claims, the total yearly health care budget for that population would be $500 million. Of that amount, 2000 patients (top 2%) would average $82,500 in annual health service use (2000 × $82,500 = $165 million) and the top 5000 (top 5%) $50,000 (5000 × $50,000 = $250 million), 33% and 50% of the total health budget cost saving opportunities, respectively. The majority of these patients have health complexity, as defined earlier, whereas a few would suffer from acute catastrophic illness. By targeting this top 2% to 5% for integrated case management support, presuming an average case manager salary of $80,000, 125 managed patients a year by each case manager, and a patient participation rate of 50%, it is possible to

![Figure 1. Percent of health care costs used by complex patients.](image-url)
project a cost savings of $4.6 (top 2%) to $6.9 (top 5%) million and return on investment of 6.9:1 (top 2%) to 4.2:1 (top 5%) in year one for the top 2% and 5%, respectively, using a gap closure of 5% (Kathol et al., 2008; Thomas et al., 2006). In year 2, gap closure increases to 10% since additional services needed to stabilize patients whose illness was spinning out of control in year one are reduced. The projected cost savings in year 2 are $10 (top 2%) to $15.2 (top 5%) million and return on investment 73:1 (top 2%) to 44:1 (top 5%) for the top 2% and 5%, respectively.

CARE MANAGEMENT—DEFINITION

It is not temporally or economically possible for physicians and other treating medical and mental health practitioners to meet the needs of complex patients within the “standard care” system. Studies now document that primary care practitioners do not even have time to address preventive care needs, guidelines-based chronic care requirements, and acute condition evaluations in their standard patient panels (Bindman et al., 2007). If there is not enough time to provide basic evidence-based care to uncomplicated patients, it bodes poorly for those with complex illness who necessarily require even more effort and time. Seven to fifteen minute clinic visits only scratch the surface when dealing with patients who have multiple and interacting physical and mental health conditions, the social and financial effects of those illnesses, and challenges related to getting the coordinated care that is essential to health stabilization. A variety of care management services have arisen in an attempt to bridge the time and care gaps for patients who are befuddled by the challenge of knowing where to go to get services in our health system as by the illnesses for which they seek treatment.

For purposes of this paper, as discussed in the lead article by Lattimer and Kathol (Lattimer & Kathol, 2011), we define “care” management as encompassing a variety of approaches to patient assistance, which include an assessment or evaluation; interactive education, often using motivational interviewing skills; and collaborative patient-manager planning to facilitate healthy behaviors, to improve the health care and service coordination, and to maximize health resource utilization. Importantly, care managers do not “treat” patients. Rather, they help assure that appropriate and recommended care is being delivered by and supported for those who give it. Care managers may also serve as patient advocates and/or merely assist patients in developing self-care skills.

All forms of care management are designed to improve health or prevent disease progression, however, each type targets specific populations and has predefined goals. Care management can be mainly educational or expand to in-depth problem solving. It can take place as a single encounter, through a fixed and defined series of interactions with a patient, or as a part of a long-term relationship between manager and patient. Professionals with health-related backgrounds typically, but not always, perform care management activities. A summary of several common forms of care management, such as case management, disease management, disability management, wellness coaching, and so on and the focus of their assistance was recently published in The Integrated Case Management Manual (Kathol et al., 2010).

Utilization management, commonly and incorrectly includes among care management subtypes, identifies the presence of: (1) an insurance benefit and (2) medical necessity. It does not assess, assist, and advocate for patients with barriers to health, that is, educate or problem solve, but rather adjudicates whether a health service is covered, is needed, and should be reimbursed. Because utilization management is not a patient “helper” function, it is not considered under the term care management but rather is a benefit management activity.

THE SERVICE INTENSITY/HEALTH COMPLEXITY RELATIONSHIP

As a rule, the greater the average health complexity of the patients served, the more
intensive are the care management services needed (Huyse & Stiefel, 2006). For instance, the average health complexity of patients helped by health care coaches would be less than those assisted by a disease manager. Likewise, average complexity for those in disease management would be less than for those in case or Assertive Community Treatment (ACT) management.

For patients with less complexity, management services would logically be more time limited. Managers would provide education, healthy behavior motivation, and occasionally discrete recommendations that foster health or retard disease development/progression. On the contrary, in patients with high complexity, one would expect more extensive assessments to uncover and delineate barriers to health in multiple domains; focused, yet more broad-based, interventions designed to break down identified barriers to health; and sustained, more intense collaborative efforts by the patient and manager until health has stabilized or improved.

Unfortunately, the intensity of the care management interaction does not necessarily match the level of patient complexity in the real world. In fact, most case management programs use process metrics, for example, the number of calls made or patients contacted, rather than clinical, functional, and financial outcomes to track program effectiveness. Complexity and outcomes enter the equation only peripherally, in the form of focused support for guidelines-based biomedical care and treatment adherence. Even in these programs care processes, not clinical, functional, and fiscal outcomes are measured.

CARE MANAGER BACKGROUND, TRAINING, AND CASELOAD AFFECT PERFORMANCE AND OUTCOMES

The time allotted to deliver care management services and the background and training of personnel influence the intensity and effectiveness of management services that patients receive (Kathol et al., 2010). Despite this fact, many primary and specialty care physician supervisors and health system administrators involved in formulating and providing resources for care management programs have little understanding about the types of care management, the patients that should be targeted for management assistance, the training needs of managers, the activities that bring the greatest value and to which patients, and the measures of effectiveness that can be used to monitor and adjust program goals.

Because program supervisors and administrators often do not understand core value-based activities of care managers and conflicts that can arise when time is not allocated to complete them, care managers frequently retain competing clinic responsibilities. In such situations, care managers provide “management” services, which are superficial, inconsistent, and marginally effective. Further, the overall effectiveness of such programs cannot be determined because critical outcome changing management activities are essentially not performed.

Although the operational impediments to care management described earlier occur in hospitals and clinics, low intensity and/or indiscriminant management services can also permeate in health plan, vendor-based, and county-based care management programs. Such care managers can be overwhelmed with high caseloads, mismatched resources, and poorly defined program goals and metrics. Other health plan and vendor-based programs are designed to target illness-based guidelines education and patient self-management as priorities or very specific patient activities are offered as sole components of the care management program. Literally hundreds of calls may be made, educational brochures sent, and patients contacted by a limited number of managers per month with little attention given to patient need or linking illness complexity to care management activity, capability, and intensity. Despite high care manager activity levels, little impact on the barriers to improvement and outcomes for patients can be measured in such programs.

Copyright © 2011 Lippincott Williams & Wilkins. Unauthorized reproduction of this article is prohibited.
Table 1. Case Management Standards of Practice 2010

<table>
<thead>
<tr>
<th>Case managers with active licensure and up to date competence in their specialty area of practice should be able to perform the following case management operations:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client centered</strong></td>
</tr>
<tr>
<td>Address total patient needs, including medical, psychosocial, behavioral, and spiritual</td>
</tr>
<tr>
<td>Collaborate in efforts to move the patient to self-care</td>
</tr>
<tr>
<td>Increase involvement of the patient and caregiver in the decision-making process</td>
</tr>
<tr>
<td>Understand and accept the patient’s healthcare decisions and willingness to change; provide behavior change support</td>
</tr>
<tr>
<td>Move patients to optimal levels of health and well-being</td>
</tr>
<tr>
<td>Improve patient safety and satisfaction</td>
</tr>
<tr>
<td><strong>System centered</strong></td>
</tr>
<tr>
<td>Minimize fragmentation of care</td>
</tr>
<tr>
<td>Expand the interdisciplinary team to include patients, their identified support system, and health care providers, including community-based and facility-based professionals (ie, pharmacists, nurse practitioners, holistic care providers, and so on)</td>
</tr>
<tr>
<td>Assist with care transitions, which may include effective, safe, timely, and complete transfer of the patient to a new provider</td>
</tr>
<tr>
<td>Abide by regulatory requirements</td>
</tr>
<tr>
<td><strong>Illness centered</strong></td>
</tr>
<tr>
<td>Use evidence-based guidelines during support of care whenever possible</td>
</tr>
<tr>
<td>Complete medication reconciliation in collaboration with medical staff</td>
</tr>
<tr>
<td>Monitor care plan and medication adherence</td>
</tr>
<tr>
<td><strong>Outcome centered</strong></td>
</tr>
<tr>
<td>Improve outcomes by utilizing adherence guidelines and standardized measurement tools</td>
</tr>
</tbody>
</table>

TRADITIONAL CASE MANAGEMENT

Traditional case management has been adapting to a changing health care environment during the past 20 years. In the 2010, version of the Case Management Standards of Practice (Table 1) (Case Management Society of America, 2010) greater emphasis is placed on addressing the needs of the total individual, including psychosocial, behavioral, and spiritual; minimizing fragmentation of care; communicating with family and caregivers; and assisting with care transitions whereas continuing to encourage guidelines-based care, treatment adherence, and outcome measurement.

Application of case management standards of practice

Within these Standards of Practice, work processes for case managers in 2010 fall into 6 general areas (Table 2) (Powell et al., 2008) however, a high degree of programmatic variability can exist, depending on the population served and the goals and contracts of the organization or company supervising the case management services. For example, a triage process may target all patients being discharged from a specific hospital. By design, patients may be assessed to assure that follow-up care and an adequate support system are available and that discharge
medication prescriptions are accurate, do not interact, and have been filled. The program includes an initial postdischarge call by the case manager and 2 follow-up calls to assure that the patient has been seen by their outpatient practitioner and is adhering to prescribed medications. Clinical follow-up and adherence status are documented and the patient is “discharged” from the case management program. Each component of the case management process (Table 2) has been addressed.

A second example of discharge-related case management is useful. Rather than performing discrete time-limited services on all discharged patients, the supervising management organization, for instance a county hospital-based accountable care organization, charges its case managers to target only patients with one or more of the following high-risk characteristics: more than one chronic illness, mental health comorbidity, multiple medications, numerous and noncommunicating clinicians, and high use claims profiles. In this program, the case manager systematically and comprehensively assesses the patients identified through a triage process. From this assessment, the case manager and patient identify meaningful issues and collaboratively create a plan with mutually agreed upon goals designed to help return the patient to stable health, step by step. If the patient has a medical home, the primary care physician would be a part of the planning loop. Over a period of months, they work together to reduce the barriers inhibiting health, for example, limited access to needed services, no transportation to get to appointments, poor clinician communication, lack of mental health treatment, and so on, in coordination with the patient’s clinicians. As goals are met, the 2 discuss what the patient can do to prevent a recurrence of the poor health control and build safeguards before the case manager returns him or her to care provided only through the patient’s clinicians. The case management discharge date is based upon readiness, as illustrated by improved/stabilized health and not defined by the number of calls as the endpoint.

The 2 scenarios exemplify the variability with which case management standards of practice can be applied. Both are valid case management programs and both can bring value to the patients identified and encountered; yet each emanates from different outcome goals and objectives. In the former, the goal of discrete and time-limited case management for discharged general hospital patients often results from a “business need” and is initiated to prevent postdischarge adverse events, for example, medication errors and inadequate follow-up, and to decrease the likelihood of early readmission or, worse, postdischarge death. This model, which endorses a case manager interaction with all discharged patients, is typically driven by contract terms that pay on a permember-enrolled basis. Although only a small percentage of discharged patients’ benefit from such service, measured outcomes document whether a reduction of postdischarge deaths, or early readmissions occurs in the patients assisted by the case managers. The outcome horizon is short and management goals discrete. In fact, the program meets the well-defined hospital-based business goal, that is, to prevent early nonreimbursed readmissions. Does it, however, use dedicated case management dollars so that they bring the greatest value to patients and to the system?

In the second example, hospital discharge remains the triggering event, however, further information delineates those at greater risk for poor outcomes. This subset of discharged patients undergoes a more comprehensive assessment for barriers to improvement. The case manager and patient mutually agree upon a plan, which addresses the immediate discharge period and health issues that could affect ongoing recovery and health stabilization. In scenario 2, health-related goal achievement occurs over a period of months rather than within a fixed number of calls. Measured outcomes dictate case management program success and graduation. This comprehensive approach includes postdischarge adverse events to reduce premature readmissions, however, it also focuses on long-term clinical, functional, quality
of life, satisfaction, and fiscal outcomes, such as might be desired by an accountable care organization or staff model health maintenance organization.

**Challenges for traditional case management**

There are several principles in scenario 2, which maximize the resources that are designated for case management activities. First, a subset of patients is selected who are most likely to benefit, that is, complex patients who are costly. Second, the interaction is tailored to the needs of the individual patient through a comprehensive assessment process. Third, issues addressed in the care plan are collaboratively developed between the patient and their case manager. Fourth, the interaction continues as long as meaningful progress is being made toward the goal of stability in the patient’s health and related issues. And lastly, multiple domains creating barriers, which drive poor health, are included in the assessment process. Overall, program participants would not only experience lower short-term risk, for example, fewer posthospitalization adverse events and early readmissions, they would also experience health stabilization, reduced total health care service use, and return to greater productivity in the long run. Return on investment would be predictably greater, as described earlier; since a small number of high cost, high need patients would be the target of “corrective/preventive” case management services.

Designing, implementing, maintaining, and monitoring a comprehensive health system need-based case management program is complicated and support for such programs in the current reimbursement environment is limited. Though there are several disease specific and/or targeted population-based programs that utilize a longitudinal view when developing case and disease management services, there are no industry supported templates, which allow the systematic application of longitudinal health altering approaches to case management for patients with multimorbid and interactive conditions, including medical and mental conditions, and for patients across the age continuum. Such a template would require: (1) a consistent and meaningful method for comprehensive complex patient assessments; (2) a uniform means of connecting assessment results to care plan goals; (3) the ability to link care plan goals to specific actions, which lead to definable outcomes; (4) a way to measure consequential clinical, functional, quality of life, satisfaction, and fiscal outcomes; and (5) the capability of proactively returning patients to standard care as barriers to improvement are removed and health stabilizes.

The template would further require patient centricity; be based on patient-manager communication and collaboration; adequately connect and work through all areas of health challenge, including mental health and chemical dependence; and address the fragmentation of services created by our health system. Finally, it must be possible to implement this template in a budget neutral environment and/or to demonstrate projected cost savings and return on investment. Integrated case management introduces a way in which there is high potential for this to occur.

**INTEGRATED CASE MANAGEMENT**

Integrated case management began as an attempt to improve the way that mental health services could be supported in primary and specialty medical care settings. There is convincing data that indicate why integrating mental health and physical health service delivery through a single case manager specifically trained in interdisciplinary service support, is an important starting point to improve outcomes for complex patients, that is, with persistent poor health (Kathol & Gatteau, 2007).

- Mental health difficulties are highly prevalent in general medical settings (Smith, 2009).
- Most with mental and substance use disorders receive no or inadequate mental condition treatment in general medical settings (Kessler et al., 2005; Wang
et al., 2007; Wang et al., 2005; Wang et al., 2005).

- Nonresolution of mental health problems in medical patients is associated with medical illness nonresponse, nonadherence, higher medical illness complications, and increased death rates (Katon & Seelig, 2008; Seelig & Katon, 2008).

- Concurrent mental health and substance use disorders in general medical patients increase health care service use (Kathol et al., 2005; Thomas et al., 2005; Thomas et al., 2006).

- Effectively treating mental conditions in general medical patients reverses poor health and cost outcomes (Katon & Seelig, 2008; Seelig & Katon, 2008; Unutzer et al., 2008).

It quickly became apparent, however, that inadequate intervention for psychiatric issues was only a part of what led to poor clinical and fiscal outcomes in difficult to treat patients. Most had one or more chronic illness and a multitude of social and economic factors interfering with their ability to get better, in addition to physical and mental health comorbidity. It was at this point that a more comprehensive system that drew on health complexity research in Europe took shape (Huyse & Stiefel, 2006). Integrated case management expanded to include biopsychosocial and health system factors as health retarding complexity domains (Kathol et al., 2010).

Health professionals in the United States worked with researchers in Europe to translate a European complexity measurement tool, the INTERMED, into one that met clinical and business needs in North America (Stiefel et al., 2006). The INTERMED-Complexity Assessment Grid, the IM-CAG, is the name applied to the newly translated version of the adult complexity measurement tool. Its 4 complexity domains are subdivided into 20 items (25 in the pediatric version) and are scored based on validated, standardized anchor points in a color-coded, easily interpreted summary sheet (Figure 2) (Kathol et al., 2010). Scoring of the grid occurs during and after a structured “dialogue” with the patient in which the development of a manager-patient relationship is considered of equal importance to the scoring of the complexity instrument. It is through the “dialogue” initiated relationship and the scored complexity assessment that a care plan is collaboratively built. Actions can then be taken by or on behalf of the patient to overcome identified barriers to improvement.

The IM-CAG supplies the consistent and meaningful “assessment” component of integrated case management. Its use provides the total picture of health barriers that lead to uniform development of comprehensive care plan goals, connection of care plan goals to specific actions related to definable outcomes, and the documentation of consequential effects of case management practices on the patient before they are prepared and discharged from case management services. With IM-CAG methodology, for the first time there is a template in which interdisciplinary work processes for multimorbid needs-based case management programs can be validly and reliably applied to diverse populations. Longitudinal results-oriented case management services can now be designed, implemented, and monitored through use of these assessment grids and the approach described.

Systematic integrated case management

Integrated case management differs from traditional case management in several important respects (Table 3) (Kathol et al., 2010). It is based on patient complexity not disease. This influences the triage process used to determine which patients will be invited to participate in case management; how assessments are performed; the consistency with which case manager care plan actions track to defined barriers to health improvement; when a patient is ready to return to standard care; and what constitutes success for the patient, the managers, and the system.

As importantly, integrated case management is relationship rather than health problem-based (Table 4). Change related to case management activities is as dependent on the relationship between the case manager and patient (or their caregiver/family)
Figure 2. Example of a Scored IM-CAG

as it is on the patient’s knowledge about their health conditions and what they need to do to get better. Because integrated case managers typically work with their assigned cases for weeks to months, and sometimes years, it is possible for them to establish a caring relationship, one that allows the case manager and patient to work in partnership to overcome barriers to health.

The essentials of integrated case management require a shift in thinking about the practice of case management from a number of...
Creating Clinical and Economic “Wins”

Table 3. Traditional Versus Integrated Case Management

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness-focused</td>
<td>Complexity-focused</td>
</tr>
<tr>
<td>Problem-based</td>
<td>Relationship-based</td>
</tr>
<tr>
<td>Diverse triggering methods</td>
<td>Complexity-focused triggering</td>
</tr>
<tr>
<td>Case managers trained in general medical case management</td>
<td>Case managers trained in CAG multidomain technology</td>
</tr>
<tr>
<td>Pediatric case management based on child/youth manager experience</td>
<td>Systematic pediatric complexity-based case management capability</td>
</tr>
<tr>
<td>Mental health management support requires manager handoffs</td>
<td>Mental health management support without manager handoffs</td>
</tr>
<tr>
<td>Illness targeted patient assessments and actions</td>
<td>Systematic multidomain actions linked to patient assessments</td>
</tr>
<tr>
<td>Process orientation and measurement—cases touched, calls made</td>
<td>Outcome orientation and measurement—clinical, functional, fiscal, satisfaction</td>
</tr>
</tbody>
</table>


perspectives. Formal training in the technique is aimed at understanding and using a multidomain assessment as well as support techniques. Case managers receive face-to-face instruction in the appropriate application of these techniques and are tested in their use. Integrated case managers become as comfortable in asking questions about mental health issues as medical issues and in assisting patients find housing, transportation, and chemical dependence support as in reviewing cardiology medications and working with medical specialists. The traditional approach of handing patients off to other case managers who are specialty-based, for example, those who provide behavioral health targeted services, is no longer necessary and is actually discouraged in a fully integrated case management program. Integrated case managers become confident in their capacity to work through the diversity of issues with which their patients present.

Finally, integrated case managers are constantly aware of clinical, functional, quality of life, satisfaction, and economic markers in the patients with whom they work. Integrated case management methodology is organized so that documentation of multidomain and other outcomes is a core component of the management process (Table 5). Measured and documented outcomes dictate when a patient is getting close to graduation from case management and return to standard care.

Table 4. Core Integrated Case Manager Activities

- Establishes a relationship with the patient—person to person
- *Always* works primarily with the patient or the patient’s guardian, but also family, clinicians, and so on.
- Systematically assesses, creates a care plan, and then acts to reverse biopsychosocial and health system needs
- Follows through and follows-up over weeks, months, years
- Works toward patient problem resolution, stabilization, and case management graduation
### Table 5. Example of Completed Case Management Outcome Measurement Tool

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline</th>
<th>First 3 months</th>
<th>8</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IM-CAG</td>
<td>28</td>
<td>24</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Personal Clinical—off narcotics</td>
<td>Regular use; multiple prescribers</td>
<td>Decreasing use; one prescriber</td>
<td>Off narcotics</td>
<td>Off narcotics</td>
</tr>
<tr>
<td>Personal functional—walk with wife in evening</td>
<td>Bedridden; traction</td>
<td>Regular PT</td>
<td>Walking with wife</td>
<td></td>
</tr>
<tr>
<td>Health Related Quality of Life</td>
<td>3 healthy days</td>
<td>12 healthy days</td>
<td>21 healthy days</td>
<td>23 healthy days</td>
</tr>
<tr>
<td>Satisfaction with health care</td>
<td>2/10</td>
<td>6/10</td>
<td>9/10</td>
<td>9/10</td>
</tr>
<tr>
<td>Clinical—eg, average pain scale score</td>
<td>9/10</td>
<td>7.5/10</td>
<td>5/10</td>
<td>5/10</td>
</tr>
<tr>
<td>Clinical—eg, PHQ-9</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Clinical—eg, back flexion</td>
<td>60 degree</td>
<td>80 degree</td>
<td>100 degree</td>
<td>100 degree</td>
</tr>
<tr>
<td>Function—eg, days of work</td>
<td>0</td>
<td>4 hours/3 days/ week; restricted activities</td>
<td>8 hours/5 days/ week; restricted activities</td>
<td>8 hours/5 days/ week; new job description</td>
</tr>
<tr>
<td>Function—eg, out of house/week</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Health service use—eg, ER visits</td>
<td>4/month</td>
<td>1 visit</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>


### LIMITATIONS OF INTEGRATED CASE MANAGEMENT

The integrated case management platform described earlier incorporates features from other care management approaches and from care support processes found in the medical literature that are considered core for consistent improvement in clinical outcomes, reduction in impairment, and lower total health care costs, including:

- The targeting of patients with health complexity;
- Training in and the application of assessments that disentangle complexity using a systematic, multidomain, validated, yet relationship-based, methodology;
- Collaborative care plan development based on disaggregated barriers to improvement;
- Multidisciplinary longitudinal care support and assistance techniques; and
- Documentation capabilities for clinical, functional, quality of life, satisfaction, and fiscal outcomes during the management process.

Despite this fact, integrated case management has only recently been introduced as a comprehensive approach to case management in the United States and thus has not been subjected to external validation.

### DISCUSSION

The United States health system is in a time of major reconstruction. Whether we agree...
with expanding insurance to cover 95% of the population and the real or potential associated costs, it behooves us to do what we can to include care delivery components that have potential to improve the health and function of our patients at reasonable cost. In this article, we argue that integrated case management represents a significant and doable contribution to affordable health care.

Early in this article, an example was provided to illustrate millions in potential savings with substantial return on investment associated with implementation of integrated case management in 1000 to 2500 patients with health complexity from a population of 100 000. These projections are supported by data, although not yet published, from 2 health plans. The first integrated medical and mental health case management as a part of a Robert Wood Johnson Foundation Grant (Thomas et al., 2005). It served, in part, as a stimulus or advisor in the development of the much more systematized approach to integrated case management promoted in this article. They documented remarkable outcomes in the 370 patients receiving integrated case management at the completion of the their grant. Their findings translate into even greater savings than the above projection. The second health plan designed program, where depression management was provided for members who had a history of high claims use, reported similar financial outcomes.

If savings associated with integrated case management in a population of 100 000 was extrapolated to the population to be covered in the United States in 2014, around 290 million, then the savings potential is compelling. If only half of the top 2% with the health complexity receive integrated case management using the same parameters described earlier, then $1.3 billion could be saved in year one and nearly $3 billion in year 2 in total health care costs and at a substantial return on investment. Of course, a new top 2% would be added each year for integrated case management. Savings and return on investment calculations become more complicated for this iterative process since over time total spending for health care will change as more patients with health complexity are stabilized. Further, realized savings would no longer be savings in as much as assisting complex patients through integrated case management would become a standard health system practice.

Although national health spending projections are of interest, they are dwarfed when we return to the patient level. Patients with complex illness suffer daily because of their uncontrolled illnesses. The costs of these illnesses are not captured through the claims system alone. Their personal and social lives are often devastated and many become financially destitute, if not because of medical bills then because of lost employability and disability due to their poor health. The cost savings projected with integrated case management are the direct result of better care, recovered or stabilized health, and return to maximum function. Integrated case management is a real “win” for patients, but it is also a win for practitioners, hospitals and clinics, accountable care organizations, health plans, the health system, and society.

REFERENCES


to primary care physicians in Australia, New Zealand, and the United States: cross sectional analysis of results from three national surveys. BMJ, 334(7600), 1261.


Title: Creating Clinical and Economic “Wins” Through Integrated Case Management: Lessons for Physicians and Health System Administrators

Authors: Roger G. Kathol, Cheri Lattimer, William Gold, Rebecca Perez, and Deborah Gutteridge

Author Queries

AQ1: Please check the author affiliations and the corresponding author names for correctness.
AQ2: Please check the corresponding author details for correctness.
AQ3: Intended meaning of the sentence not clear. “In year 2, ... reduced.” Please check.
AQ4: Figure 3 has been changed to table 5. Please check.
AQ5: Please provide the volume number and page range in this reference, if possible.
AQ6: Please provide a letter of permission for adaptation of tables 3 and 5 in this article.
AQ7: Please provide a better quality figure because this figure appears in black and white.