Burden of Illness: Costs and Consequences of Our Fragmented Mental Health Care System

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Licensed in Texas, Arizpe has 24 years of experience as a practicing pharmacist and health care manager. Before working for Aetna, he was director of pharmacy for Prudential HealthCare in local and regional positions. His previous experience includes serving as a pharmacist manager in retail community pharmacy settings in both Dallas/Fort Worth and San Antonio.

Arizpe graduated from the University of Texas with a bachelor of science degree in pharmacy. He served his hospital and clinical psychiatric rotations at San Antonio State Hospital. It was there that he became keenly aware of the impact of appropriate drug utilization within that population; it still motivates him today. Arizpe has been recently installed as the chair of the Academy of Managed Care Pharmacists within the Texas Pharmacy Association.

Blake Christiansen, BS, MS, is a pharmacoeconomist with National Clinical Programs Policy Development, Aetna Pharmacy Management, Aetna Inc., Englewood, Colorado. He worked with statistical and mathematical models, which merge pharmacy and medical claims data. Prior to holding his present position, he worked as a divisional pharmacy director for Prudential HealthCare, as a regional pharmacy director for Cigna, as the founder and president of HealthCost Monitors, Inc., and as a retail pharmacist. He received a bachelor's degree in pharmacy from North Dakota State University and a master's degree in economics from the University of Colorado at Denver, where his research interests were focused on economic factors affecting antibiotic resistance.

Daniel E. Ford, MD, MPH, is a professor of medicine and psychiatry and was recently appointed vice dean for clinical investigation at Johns Hopkins University School of Medicine. He is also a professor in the departments of epidemiology and health policy and management, JHU Bloomberg School of Public Health. He received his bachelor of arts degree at Cornell University, medical degree at the State University of New York at Buffalo, and master's of public health degree at JHU Bloomberg School of Public Health. He completed his residency in internal medicine at Johns Hopkins Hospital and a fellowship in clinical epidemiology at the National Institute of Mental Health. For more than a decade, he has been an active researcher in how to improve the treatment of depression in primary care. Ford currently leads the evaluation team for the Robert Wood Johnson Foundation Depression in Primary Care program. He is also the cochair for the Depression Collaborative, targeting community health centers.

Harold Alan Pincus, MD, is a professor of medicine and psychiatry and was recently appointed vice dean for clinical investigation at Johns Hopkins University School of Medicine. He is also a senior scientist at RAND Corporation and directs the RAND-University of Pittsburgh Health Institute in Pittsburgh. Pincus also directs the Robert Wood Johnson Foundation national program Depression in Primary Care: Linking Clinical and Systems Strategies. Previously, he was deputy medical director of the American Psychiatric Association (APA), founding director of APA Office of Research, and executive director of the American Psychiatric Institute for Research and Education. Before joining APA, Pincus was special assistant to the director of the National Institute of Mental Health.

Pincus has edited or coauthored 23 books and more than 300 scientific publications in health services research, science policy, research career development, and the diagnosis, classification, and treatment of mental disorders. He has had a particular research interest in the practice of evidence-based medicine, quality improvement, and the relationships among general medicine, mental health, and substance abuse and developing and
empirically testing models of those relationships. He has led major health policy and
services research and research training projects totaling more than $40 million in external
funding. Pincus also maintains a small private practice, specializing in major affective
disorders, and has spent an evening each week for 22 years at a public mental health
clinic, caring for patients with severe mental illnesses. He currently attends at the Western Psychiatric Institute and Clinic (University of Pittsburgh School of Medicine) emergency
room.

Pincus graduated from the University of Pennsylvania and received his medical degree
from Albert Einstein College of Medicine, New York. Following completion of his
residency at George Washington University Medical Center, he was named a Robert Wood
Johnson Foundation Clinical Scholar. As a Clinical Scholar, Pincus served as a professional
staff member of the President's Commission on Mental Health at the White House and,
subsequently, as a congressional fellow in the U.S. House of Representatives.

Brenda Reiss-Brennan, MS, APBN, CS, is mental health integration leader of primary
care clinical programs, Intermountain Health Care (IHC), Salt Lake City, Utah. She has
published and presented both nationally and internationally, and her consultation role
with IHC has led to a full-time leadership position in primary care clinical programs. As
the mental health integration leader, she is responsible for designing, implementing, and
evaluating evidence-based clinical and economic models for chronic disease. She also
serves as the principal investigator for a Robert Wood Johnson Foundation grant that was
recently awarded to IHC. The purpose of the grant is to design and link effective clinical
and economic strategies to improve the treatment of depression in primary care.

Reiss-Brennan's leadership work with IHC has been nationally recognized and led to
her current role as lead consultant with the Surgeon General's Office on the integration of
mental health and primary care. Her dedication and innovation in the field of mental
health nursing has evolved into a corporate business that has provided research-based
consultation and family services for more than 20 years. With the support of her multi-
disciplinary team, she developed Relationship Competence Training, which is a
standardized method of identifying, tracking, managing, and building sustainable
relationship resources for individuals within their families and communities. Her success
in implementing this model as a method of integrating mental health into primary care has
resulted in improved patient and family functioning, patient and provider satisfaction, and
the ability to track the cost benefit of integrated collaborative care.

Shortly after graduating from the University of Utah with a master's degree in
psychosocial nursing, Reiss-Brennan pioneered an independent nursing practice she still
operates today. She is licensed by the state of Utah as an advanced practice registered nurse
(APRN) in psychiatric nursing with prescriptive practice and is also board certified as a
child and adolescent clinical nurse specialist. She holds a long-standing faculty position at
the University of Utah College of Nursing. In 1996, she was awarded the National Clinical
Practice Award in Psychiatric Nursing from the Society for Education and Research in
Mental Health Nursing.

Sherri D. Wittwer, MPA, is the executive director of NAMI Utah (National Alliance on
Mental Illness of Utah), Salt Lake City. She previously served as director of development
for NAMI Utah. Wittwer received a detailed understanding of the mental health system
when she conducted a mental health needs assessment while working as a research
analyst for Salt Lake County. She has also enjoyed a career as a technical writer, has worked
with a number of community agencies in a variety of capacities, and is a published author.
Wittwer has the “lived experience” of having family members who have a mental illness
and is personally familiar with the difficulties many consumers and family members face.
She received a bachelor's degree in English and a master's degree in public administration
from the University of Utah.

Supplement
Policy Statement

Standards for Supplements to the
Journal of Managed Care Pharmacy

Supplements to the Journal of Managed Care Pharmacy are intended to support medical education and research in areas of clinical practice, health care quality improvement, or efficient administration and delivery of health benefits. The following standards are applied to all J MCP supplements to assure quality and assist readers in evaluating potential bias and determining alternate explanations for findings and results.

1. Disclose the principal sources of funding in a manner that permits easy recognition by the reader.

2. Disclose the existence of all potential conflicts of interest among supplement contributors, including financial or personal bias.

3. Describe all drugs by generic name unless the use of the brand name is necessary to reduce the opportunity for confusion among readers.

4. Strive to report subjects of current interest to managed care pharmacists and other managed care professionals.

5. Seek and publish content that does not duplicate content in the Journal of Managed Care Pharmacy.

6. Subject all supplements to expert peer review.
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Target Audience
Managed health care professionals interested in appropriate diagnosis and care and improvements in our health care system related to mental health

Learning Objectives
Upon completion of this program, participants will be better able to
1. integrate appropriate treatment strategies for mental health patients based on a unified health care pathway;
2. drive process change by identifying critical issues in the management system needed to identify depressive disorders in patients, using best practices as a model;
3. recognize system process gaps and inefficiencies and, according to guidelines, apply best practices to the care of patients;
4. analyze the complexity of comorbid conditions associated with mental illness and evaluate the importance of adequately diagnosing and treating comorbidities to improve outcomes and manage costs;
5. apply successful approaches to increase compliance and reduce the consequences of noncompliance, in order to avoid treatment failures; and
6. outline how to become an agent for change related to the U.S. mental health system, given the mental health complexity in our country.

This supplement was supported by an educational grant from Wyeth. Articles in this supplement are based on the proceedings of a symposium held October 6, 2005, at the Academy of Managed Care Pharmacy’s 2005 Educational Conference in Nashville, Tennessee, which was supported by an educational grant from Wyeth.

* A total of .30 CEUs (3.0 contact hours) will be awarded for successful completion of this continuing education program (ACEP Universal Program No. 245-099-05-347-2005).

The articles published in this supplement represent the opinions of the authors and do not reflect the official policy or views of the Academy of Managed Care Pharmacy, the author’s institutions, or Wyeth unless so specified. The authors have disclosed if any unlabeled use of products is mentioned in their articles. Before prescribing any medicine, clinicians should consult primary references and full prescribing information.
Depression and Primary Care: Drowning in the Mainstream or Left on the Banks?

HAROLD ALAN PINCUS, MD

ABSTRACT

OBJECTIVE: To discuss the treatment, barriers, and successful strategies to treat depression in a primary care setting.

SUMMARY: Historical, conceptual, and individual barriers hinder the treatment of depression. Additionally, a lack of clarity about whether the responsibility for care lies with primary care or behavioral health providers further leads to fragmented and uncoordinated systems. Depression is a chronic illness, not unlike diabetes, heart failure, and asthma. Therefore, disease models used to treat these chronic illnesses can also be applied to successfully treat depression.

CONCLUSION: Appropriately managing patients with depression and other behavioral health conditions will require changing the entire health care system. Future strategies should include developing a continual quality improvement process, developing bridges between behavioral health and primary care, eliminating clinical and financial barriers between systems, and viewing the mind and body as a whole.

KEYWORDS: Depression, Disease management, Primary care, Health care delivery, Practice management

J Manag Care Pharm. 2006;12(2)(suppl):S3-S9

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Depression is a prevalent illness directly affecting 10% to 20% of the population.1,2 But depression not only affects the patient. It is also devastating to the family and friends of the afflicted individual. The disease has significant personal, family, social, and economic impact and, despite the scientific advancements in diagnosis and treatment, there still remains a large gap between scientific evidence and the effective implementation of programs to reduce the disease burden of patients with depression.

Depression is a chronic illness not unlike other chronic diseases such as diabetes, asthma, and congestive heart failure. Chronic disease models for treating these other diseases can also be applied to treating depression. According to a study by the World Health Organization (WHO), the leading source of disease burden, unipolar major depression, was ranked as the second most disabling disease in developed economies (Table 1).3 The WHO Global Burden of Disease study ranked diseases according to disability-adjusted life-years (DALY), which combines the measures of mortality and morbidity, including disability, into a single measure for the purposes of comparing various illnesses and their impact on the population. But when only disability was considered, unipolar depression was the leading cause of years lived with disability for all sexes and all ages (Table 2).4 In this analysis, 4 of the top 10 illnesses contributing to disability were behavioral health conditions. Among the productive workforce between the ages of 15 and 44, 4 of the top 5 illnesses that contribute to disability were also behavioral health conditions (Table 3).4

In terms of disability, behavioral health conditions appear to be significant sources of disability across the population. Despite the

**TABLE 1** Leading Sources of Disease Burden—Established Market Economies, 1990

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<thead>
<tr>
<th>All Causes</th>
<th>Total DALYs (Millions)</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Ischemic heart disease</td>
<td>8.9</td>
<td>9.0</td>
</tr>
<tr>
<td>Unipolar major depression</td>
<td>6.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Road-traffic accidents</td>
<td>4.3</td>
<td>4.6</td>
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Depression and Primary Care: Drowning in the Mainstream or Left on the Banks?

prevalence and disease burden, often these behavioral health conditions may not be the focus of effort for most health care organizations or systems. Not recognizing the importance of these conditions can result in poor patient outcomes as well as significant cost burden for the organization.

Disease Burden of Depression

The disease burden of depression is high because of several factors. We know that the prevalence of depression is high, but this prevalence appears to be rising in studies with recent cohorts. In addition, the disease is usually chronic in nature with frequent episodes of relapse. Depression is also prevalent during the most productive time in a person's life, and this has significant long-term impact on educational and professional development. In addition to the societal impact of suicide, the increased utilization of health services in people afflicted with depression is also a concern. As both the number of people being treated for depression and the cost of treatment modalities increase, the disease burden of the illness will rise accordingly. One third to one half of all individuals with diseases such as hypertension, epilepsy, diabetes, and HIV/AIDS also suffer from depression (Figure 1).

Although we have focused primarily on patients in primary care, we should not lose sight of those with severe mental illnesses who are often treated in mental health specialty settings. Among patients with severe mental illnesses like schizophrenia and bipolar disorder, medical and preventive health care needs are particular issues of concern. Most of these patients already have complications such as cardiovascular disease, diabetes, and hepatitis; in fact, approximately 40% to 56% of individuals with mental illness have a clinically significant medical condition. Whether it is the mental illness, the medical condition, or a combination of both factors, these patients have reduced life spans and 2-to-4-times higher death rates compared with patients without mental illnesses. In addition, according to recent evidence, the association between atypical antipsychotics and increased risk of metabolic syndromes places these patients at even higher risk of morbidity and mortality. Continual efforts to ensure appropriate utilization of these medications and preventive strategies to manage metabolic consequences in these patients should be priorities.

Depression is often identified and managed within the setting of primary care since a high percentage of patients seek treatment with primary care physicians for somatic symptoms that, in fact, may actually be depressive symptoms. People often feel less stigmatized in seeking general medical care than behavioral health care for treatment of their symptoms. Unfortunately, however, one third to one half of these patients who have depression may not be appropriately diagnosed or receive proper treatment. Among patients with depression, 50% of them still remain depressed after 1 year. This may be the result of inadequate dosing, inadequate follow-up, or lack of education about the nature of the disease or treatment being provided. In fact, as many as 50% of depressed

<table>
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<tr>
<th>Leading Causes of Years of Life Lived With Disability in All Ages</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Unipolar depressive disorders</td>
<td>11.9</td>
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<tr>
<td>Hearing loss, adult onset</td>
<td>4.6</td>
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<tr>
<td>Iron-deficiency anemia</td>
<td>3.5</td>
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<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>3.1</td>
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<tr>
<td>Alcohol-use disorders</td>
<td>3.1</td>
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<tr>
<td>Schizophrenia</td>
<td>2.8</td>
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<tr>
<td>Falls</td>
<td>2.8</td>
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<tr>
<td>Bipolar affective disorder</td>
<td>2.5</td>
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<td>Asthma</td>
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<th>Leading Causes of Years of Life Lived With Disability in 15-44 Year-Olds</th>
<th>% of Total</th>
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<tr>
<td>Unipolar depressive disorders</td>
<td>16.4</td>
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<tr>
<td>Alcohol-use disorders</td>
<td>5.5</td>
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<tr>
<td>Schizophrenia</td>
<td>4.9</td>
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<tr>
<td>Iron-deficiency anemia</td>
<td>4.9</td>
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<tr>
<td>Bipolar affective disorder</td>
<td>4.7</td>
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<tr>
<th>Prevalence of Major Depression in Patients With Physical Illnesses</th>
<th>%</th>
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<tbody>
<tr>
<td>Hypertension</td>
<td>Up to 26%</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>Up to 22%</td>
</tr>
<tr>
<td>Polyneuropathy</td>
<td>Up to 30%</td>
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<tr>
<td>Stroke</td>
<td>Up to 31%</td>
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<tr>
<td>Diabetes</td>
<td>Up to 27%</td>
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<tr>
<td>Cancer</td>
<td>Up to 33%</td>
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<tr>
<td>HIV/AIDS</td>
<td>Up to 44%</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>Up to 45%</td>
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<tr>
<td>General population</td>
<td>Up to 10%</td>
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patients fail to refill their antidepressant prescriptions.11 These issues are not exclusive to primary care but exist in mental health specialty settings as well. The good news is that there are effective models to address some of these issues and hopefully to produce better clinical outcomes.

- Barriers to Treatment

So what are the barriers to identifying and effectively treating patients with depression? First, the players involved in the process need to be identified (Figure 2). Although there are many people who have depression, not all of them are effectively identified and treated. Therefore, we would like the proportion of patients who are appropriately recognized and treated to expand as much as possible. Ideally, our goal is to have these latter and former groups overlap completely. In addition, a minority of patients may be identified as having depression who actually do not have depression or may have subthreshold levels of depression. These patients may warrant other types of intervention than simply an antidepressant medication, (e.g., watchful waiting that is truly watchful).

Barriers to treatment of depression exist on many levels—ranging from historical to conceptual to individual barriers (Table 4). There are 6 levels, or what are termed the 6 P’s: patient, provider, practice, plans, purchasers, and population. As for historical barriers, behavioral health is different from general medical conditions. During back to René Descartes, who theorized about the division between the mind and body, there has been stigma about mental illnesses. Although great strides have been made in educating the public about depression and other mental illnesses, stigma is still a very prevalent problem that often hinders people from seeking treatment. Also, there are legal and regulatory issues that are specific to the care of the mentally ill (e.g., privacy, competency). Further, there are separate treatment systems, such as state mental hospitals. The mental health care system is complex, often involving social services, criminal justice, and educational systems, which together make the care of those with mental health issues more complicated than the care of those with other health conditions. In addition, there is a division of diagnostic systems as well as delivery and financing systems (e.g., separate “carve-out” managed mental health plans and lack of parity between behavioral health and general medical care). While most of us may have medical care insurance benefits, we rarely know what to expect from our plan when it comes to behavioral health benefits. It is clear that there are many silos within the behavioral health care system that hinder us from receiving adequate care.

In addition to historical barriers, there are individual patient barriers, such as stigma. In 1990, a survey of primary care providers found that more than a third of patients with depression resisted the diagnosis, and half of the patients were hesitant to seek specialty care.12 Even when they accept the diagnosis, patients are often unwilling to be referred outside of the primary care setting and are concerned about confidentiality issues, especially when they participate in an employer-based health plan.

It should be noted that the symptoms of depression themselves may be obstacles to the treatment of the disease. Patients with depression often have low energy, feelings of hopelessness, and decreased concentration; these symptoms reduce the likelihood that patients will follow up with care or adhere to treatment and follow-up. These patients are less able to manage diseases that often coexist with depression, resulting in poor self-care management that may contribute to their decreased functioning and quality of life.13

- Responsibility for Care

In addition to the barriers that may prevent patients from receiving appropriate care, there is also the issue of responsibility for care. Providers are faced with conflicts such as “Who is responsible for care?” and “Where and how should care be provided?” The level of responsibility of the primary care provider and the behavioral health specialist is often unclear, and the lack of coordination...
between them can lead to gaps in continuity of care. Certainly, these roles can be delineated by looking at the various conditions and potential interventions for particular disease states (Figure 3).

At the health plan level, there are several obstacles that may hinder appropriate management of these patients. Traditional indemnity models are rare in mental health; often, the behavioral health benefit is “carved out” to a separate company. It is estimated that approximately 78% of Americans with public or private insurance, which represents a $4.4 billion industry, have some form of managed behavioral health care benefit. This separation of benefits has a significant impact in terms of care and the incentive structure that allows for the coordination and communication between primary care and behavioral health care specialists. The increasing fragmentation of care in the rapidly growing sector of the disease management industry is an important issue that needs to be addressed in the near future.

The traditional indemnity model of insurance, in which both primary care providers and psychiatrists/psychologists are involved in the ultimate care of the patient, is rare today. Current health plans are primarily employed to pay the bills and are not often involved in any type of relationship between the providers. In an integrated model such as the health maintenance organization, there remains a close connection between providers, and the risk is shared among all providers. In a carve-out model, there is little relationship between the mental health and primary care providers; instead, the communication is primarily between the health plans and their respective provider networks. When a referral is made, there is no discussion between the primary care provider and the mental health specialist to whom the patient is referred. Furthermore, there is little financial incentive for either the primary care provider or the managed behavioral health organization to coordinate care among all of the different providers.

Unfortunately, the complexity and fragmentation of the system is increasing. The potential players in this system can range from the managed care organization and the pharmacy benefit managers to the disease management organizations and the corporate medical staff. Within each of these entities lie additional silos. The responsibility for this state of affairs falls for the most part to the purchasers, both employer purchasers and public purchasers who contract with vendors to implement this system. Purchasers are generally not concerned with behavioral health conditions because of the stigma of mental illness and the lack of awareness of the association between depression and their bottom line (i.e., absenteeism, presenteeism, disability, productivity, indirect costs). As mentioned previously, depression has a significant impact on the treatment of other chronic disease such as diabetes and congestive heart failure. Although behavioral health care may only account for 5% to 7% of the health care dollar, the cumulative cost of behavioral health conditions and the diseases that are affected by behavioral health disorders can be astounding. The purchasers must use appropriate behavioral health quality measures when making purchasing decisions and not contribute to the increasing fragmentation in the delivery of care.

**Potential Strategies**

Wagner and colleagues have designed chronic care models to provide the best possible functional and clinical outcomes by optimizing the interaction between an effective and prepared practice team and the active patient (Figure 4). For these interactions to take place, an infrastructure needs to support this dyad. The model is effective across a wide range of chronic diseases, including depression, as evidenced by results from studies of multiple programs such as the PROSPECT, IMPACT, and Partners in Care programs.

In our depression program funded by the Robert Wood

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**FIGURE 3** Mapping Training to Roles

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<td>Coach Longitudinal Follow-up &amp; Monitoring</td>
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Note: Did not include children, e.g., ADHD; geriatrics, e.g., dementia; ADDHD = attention-deficit/hyperactivity disorder; B/P/S = behavioral/psychosocial; GMC = general medicine clinic; P/S = psycho/social.
Johnson Foundation, we designed programs to combat barriers at each level of the 6 Ps conceptual framework, from patients to policies and populations (Figure 5). In the incentives demonstration component, a partnership was formed between the health plan and provider groups to implement the chronic care model. This partnership also incorporated an economic model that challenged the traditional organization and financing structure. There were 8 sites, some of which were commercial and others of which were Medicaid, and both clinical and economic models were implemented. The intent was to realign some of the financial and nonfinancial incentives, reward performance, and alter the contractual arrangements between and among the managed behavioral health organizations, managed care organizations, and the primary care and mental health specialty provider groups. The process was designed to be a collaborative and learning process that could be adapted to different situations. Additional approaches have been developed to integrate preventive and general medical care for severely mentally ill populations. A quadrant model can aid in understanding the process of determining the types of care patients need in a specialty care setting (Figure 6).

Depending on the nature of the general medical condition or the behavioral health condition, people may have different intensities of need. There are different models of integrating care, whether you imbed a primary care provider within a behavioral health system or you co-locate a behavioral health system in a primary care office. Furthermore, there can be a unified team or a very intensive coordination/collaboration between the providers; different models may work in either way.

### Crossing the Quality Chasm

In recent reports by the Institute of Medicine (IOM), there is much evidence of a gap between ideal health care and the quality of care that our health care system provides. There is a “quality chasm” that we must cross, and this divide is evident across all health care settings and all age groups and geographic areas. According to a report by RAND, there is a 50% chance of receiving the right care, overall, if a patient walks into any health care provider’s office.14 In the IOM report, To Err Is Human, it was reported that the number of people dying in this country from medical errors represents the “equivalent of a B747 plane crashing every day.”15 In addition, the second report by the IOM, Crossing the Quality Chasm, concluded that the American health care delivery system is in need of fundamental change. The current care systems cannot do the job; therefore, simply trying harder will not work.16 The report provided a roadmap for improving the system in 6 basic ways: to make it safe, effective, patient-centered, timely, efficient, and equitable. It also outlined 10 rules for what people should expect from the health care system (Table 3). The IOM strongly supported the chronic care model that focuses on the diseases that contribute to significant disease burden.

The National Committee for Quality Assurance’s Health Plan Employer Data and Information Set (HEDIS) statistics, which evaluate the performance of health plans, have shown improvement in general practice measures; however, behavioral health measures are markedly lower than general practice measures and remain stagnant.17 There is less scientific evidence on safety, but there is less acceptance of an evidence-based framework in mental health.

In addition, there is a greater diversity of backgrounds and disciplines in the mental health care system, and the infrastructure of the system is less well developed. There is also less quality improvement research being performed in this area. The IOM committee concluded that (1) all of the aims/rules from the original Quality Chasm report apply to mental health and substance abuse and (2) overall health care will not improve unless overall mental health/substance abuse care improves (and

![FIGURE 4](https://example.com/figure4.png)

**Evidence-Based Chronic (Planned) Care Approaches for Treating Depression**

![FIGURE 5](https://example.com/figure5.png)

**6 P Conceptual Framework**
Depression and Primary Care: Drowning in the Mainstream or Left on the Banks?

The committee also provided recommendations for creating an infrastructure for quality improvement in behavioral health so that the methodologies for improving care are infused into every aspect of care for mental and substance use disorders.

Potential Scenarios

There are 3 potential scenarios that may describe the future relationship between behavioral health and primary care. The first is an evidence-based, rational, but somewhat optimistic scenario in which we would have more effective and targeted medications with fewer side effects and risks. In this scenario, we would also have more effective and targeted psychosocial behavioral interventions, which could be provided in different ways, utilizing different technological advancements. There would be clinical information systems that would provide tracking capabilities and decision support as well as integrated financing and practice arrangements that would incentivize high-quality care. The structure of care for a patient would be coordinated, in that the less severely ill patients would be treated primarily by the primary care provider while those with more severe conditions would be treated in the specialty mental health settings. The second is a pessimistic scenario in which behavioral health care would be more segregated from the mainstream practice of medicine. Primary care and behavioral health specialty providers would not receive any

### Potential Scenarios

<table>
<thead>
<tr>
<th>Quadrant I</th>
<th>Quadrant II</th>
<th>Quadrant III</th>
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<tbody>
<tr>
<td>BH</td>
<td>PH</td>
<td>BH</td>
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<tr>
<td>• BH case manager with responsibility for coordination with PCP</td>
<td>• PCP (with standard screening tools and BH practice guidelines)</td>
<td>• PCP (with standard screening tools and BH practice guidelines)</td>
<td>• BH case manager with responsibility for coordination with PCP and Disease Manager</td>
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<tr>
<td>• PCP</td>
<td>• Specialty BH</td>
<td>• Careline manager</td>
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<td>• BH practice guidelines</td>
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### TABLE 5: What People Should Expect From the Health Care System—10 Rules

1. Continuous healing relationships
2. Safety
3. Cooperation
4. Science
5. Individualization
6. Control
7. Information
8. Anticipation
9. Transparency
10. Value


* PCP-based BH provider might work for the PCP organization, a specialty BH provider, or in an individual practice; is competent in both MH and SA assessment and treatment.

BH = behavioral health; ER = emergency room; IP = inpatient; PCP = primary care provider; PH = physical health; SNF = skilled nursing facility; SPMI = severe and persistent mental illness.
Depression and Primary Care: Drowning in the Mainstream or Left on the Banks?

Incentives for providing or coordinating behavioral health care, and there would be even less parity on the financing side. But a third scenario, which is a more realistic one, is a marketplace scenario in which the demands of the consumers and the purchasers would provide the incentive to discover ways to provide quality care efficiently. Purchasers would consider behavioral health performance measures and establish mechanisms to reward the performance of the appropriate players on the health care team.

Proper management of patients with depression and other behavioral health conditions will require changing the system as a whole. Not only will this reduce the stigma and other barriers that prevent patients with mental illness from receiving appropriate treatment, but it will also allow for better coordination of care among primary care and specialty mental health providers. There needs to be a continual quality improvement process to solve problems and build bridges between behavioral health and primary care. Eliminating barriers between systems and looking at the mind and the body as a whole is crucial to strategizing for the future.

DISCLOSURES
This article is based on the proceedings of a symposium held on October 6, 2005, at the Academy of Managed Care Pharmacy’s 2005 Educational Conference in Nashville, Tennessee, which was sponsored by an educational grant from Wyeth. The author received an honorarium from Wyeth for participation in the symposium. He discloses no potential bias or conflict of interest relating to this article.

REFERENCES


Depression has multiple medical, economic, and social consequences (Table 1). While patients may be concerned about their personal suffering and interpersonal relationships at home and work, primary care physicians (PCPs) are often concerned about patient nonadherence to therapy and obtaining better outcomes for their patients. In addition, because increasing evidence indicates that depression is an independent risk factor for cardiovascular disease and diabetes, mental illness cannot be treated successfully without also taking such medical issues into consideration. Moreover, patients with depression frequently overuse medical services and markedly drive up primary health care costs. One health maintenance organization (HMO) calculated the average per-patient cost for enrollees with either condition at $2,390 for a 6-month period, compared with $1,400 for those without the disorders. This combined overutilization of medical services and nonadherence to prescribed care leads to an inefficient process in which both the patients and providers suffer. Despite improvement in detection and diagnosis of depression, an estimated 10% of patients who meet criteria for depression in a primary care setting are treated only with a benzodiazepine. In addition, psychosocial interventions are rarely being utilized, and antidepressants, when used, are not being appropriately dosed or prescribed for an adequate length of time. Approximately one third of patients stop taking antidepressants within the first 30 days, and rarely do they stay on the antidepressants during the continuation and maintenance phases. Moreover, while referral to a mental health specialist may be one option for getting patients the right treatment, it is estimated that only 50% of those referred actually have more than one visit. Most patients will never engage in the mental health system and instead return to the PCP at a later time without any improvement in symptoms.

Comparison of Depression and Chronic Medical Diseases

Treatment strategies for depression should be similar to those for any other chronic disease. PCPs should be educated on the chronic nature and severity of the depressive illness, and it should be...
stressed that appropriate treatment of depression is necessary to prevent relapses and/or recurrent episodes. The prevalence of depression is similar to other chronic medical conditions such as asthma and diabetes, and there is a close relationship between comorbidities for depression and such diseases. In a survey of PCPs conducted by the Robert Wood Johnson Depression in Primary Care initiative, approximately 80% of providers indicated that they should be able to manage at least 75% of their patients with depression. Of note, this figure reflected similar opinions about the providers’ perceived role in diabetes care. In general, most PCPs expect to provide continual care for patients with chronic disease, including depression.

In addition to recognizing their role in the chronic management of patients with depression, PCPs have struggled to find appropriate outcome measures for the disorder. While the outcome measures are fairly clear with diseases such as diabetes (e.g., HbA1c) and hypertension (e.g., blood pressure), they are less certain of monitoring parameters for depression. Instruments like the Patient Health Questionnaire (PHQ) can greatly aid in convincing PCPs that depression is an illness that can be tracked over time with observed gradual improvements in outcome measures.

Depression can be distinguished from other chronic conditions, from the perspective of PCPs, in that there is still a significant stigma associated with the illness, and patients are less accepting of evidence-based treatment. One report suggests that the difference between patients with depression seen in primary care settings and those in mental health settings is the primary care patients’ lack of acceptance of evidence-based care (e.g., the use of antidepressants) and not the severity of illness or presence of medical comorbidities. Approximately 90% of patients being seen by a mental health specialist will agree to take an antidepressant, while only about 50% of patients in a primary care setting will readily accept the treatment plan. In addition, some of the difference can be attributed to the insurance benefit. Many patients with depression may already have a financial burden (e.g., loss of employment and insurance or no insurance) or may prefer counseling over medications; unfortunately, PCPs may not be able to provide many answers when patients inquire about the financial aspects of their care.

Another difference between depression and chronic medical conditions for PCPs is that they may feel less confident in their skills to fully manage patients with depression. PCPs report that they are generally confident in diagnosing depression and managing one antidepressant. The situation becomes more complicated when they have to manage more than one antidepressant. Only 16% of PCPs report being very skilled in managing 2 antidepressants, and only 50% report being very skilled in describing how care would be given in specialty mental health settings. Therefore, it is not hard to speculate that both PCPs and patients may not be aware of the entire referral process.

PCPs are also frustrated by their inability to obtain high-quality specialty mental health care for their patients (Figure 1). In a study involving a rational sample of PCPs, the availability of specialty medical care was reported for mental health and medical care.

Potential Interventions

In order to assess methods to eliminate some of these barriers and gain confidence to forge ahead, we need to look at what has been already studied. By reviewing different educational and organizational interventions implemented to improve the care for depression, some conclusions can be made. It appears that well-
In order for the chronic care model to succeed, the organization of the health care system needs to be examined. There must be a culture, organization, and mechanism that promotes the delivery of safe, high-quality care. The leadership of the health care system needs to recognize the importance of the model even when resources are scarce. An organization that focuses only on short-term goals and the financial bottom line does not do nearly as well as an organization that accepts a culture based on high quality over economic gain. PCPs need good decision-support systems to succeed in a chronic care model. The accessibility and usefulness of evidence-based guidelines are crucial. Surveys have demonstrated that only half of the physicians stated that guidelines were helpful, and this is disconcerting. A potential problem with published guidelines provided by organizations such as the American Psychiatric Association (APA) or the Agency for Healthcare Research and Quality (AHRQ), is that only general guidelines on diagnosis and follow-up plans are outlined. There is little detail about strategies for changing medications or utilizing multiple medications. These guidelines often require customization to suit the needs of PCPs. Mental health specialists must be more involved in developing these types of documents. Collaboration can be especially challenging for rural primary care programs that need input about the organization of programs and development of protocols.

Clinical information systems are also essential so that patients can be tracked over time, such as in a depression registry. The type of treatment can be recorded and, in some instances, the system can generate reminders for providers. If there is a depression care manager, his or her notes can be linked to this registry, and these documents can be useful in monitoring performance. While it may seem initially burdensome, this type of information is extremely important to the success of long-term health-quality improvement programs.

In addition to decision support and clinical information systems, there needs to be a delivery system that supports depression care managers. The most important function of the care manager is active follow up in which patients who do not return for a clinic visit can be identified and contacted. The care manager identifies the barrier, if any, and encourages that patient to return to the clinic. It should be stressed that this type of information is extremely important to the success of long-term health-quality improvement programs.

Even with the entire organizational and delivery system put in place, the ultimate key player in this model is the patient. Patients struggle daily to identify and complete the next step, whether that step is taking their medication or finding employment. Patients must be encouraged to set a self-management goal and be able to assess their level of confidence in achieving this goal. If their confidence in achieving the goal is less than 70%, another goal should be selected. Due to the chronic nature of the depressive illness, patients must learn how to manage new symptoms and know when to seek help if symptoms return.

![Chronic Care Model](image-url)
Finally, PCPs should recognize that they cannot work in a silo. They need to develop links to support systems in the community to help them deal with issues such as domestic violence, employment, or housing. Patients should be informed of the various resources in the community that may help them in their recovery from depression. In order for them to be able to develop a more comprehensive treatment plan for patients, providers themselves need to become more knowledgeable in these areas. Periodic meetings with community groups may be helpful to identify available services and allow coordination among these programs, providers, and patients.

In summary, there is a useful model that can transform the relationship between a PCP and patient so that each encounter is a productive one. Once PCPs are provided with the decision and organizational support to help them manage their patients with depression, they will have increased confidence in treating these patients. Regardless of the outcome, providers will have acquired more knowledge about successful treatment plans, whether that may be as a referral or continuation of treatment in their office. Success of this model is contingent upon the support of the entire health care system.

DISCLOSURES
This article is based on the proceedings of a symposium held on October 6-7, 2005, at the Academy of Managed Care Pharmacy's 2005 Educational Conference in Nashville, Tennessee, which was sponsored by an educational grant from Wyeth. Dr. Ford received an honorarium from Wyeth for participation in the symposium. While he presented this information, including the table and figures, at the symposium, he was not involved in the preparation and approval of this written account of his presentation. Ford discloses no potential bias or conflict of interest relating to this article.

REFERENCES
Can Mental Health Integration in a Primary Care Setting Improve Quality and Lower Costs? A Case Study

BRENDA REISS-BRENNAN, MS, APRN, CS

ABSTRACT

OBJECTIVE: To describe the successful implementation of an evidence-based, integrated quality improvement mental health program in a primary care setting.

SUMMARY: Intermountain Healthcare (IHC) has aligned resources around a conceptual framework that emphasizes clinic and community accountability, family and consumer health focused on recovery rather than disease, and enhanced decision making through partnerships and automation. The mental health integration system includes an integrated team led foremost by the patient and family with vital defined roles for primary care providers, care managers, psychiatrists, advanced practice registered nurses, support staff, and the National Alliance for the Mentally Ill. Pharmacists have assumed training functions on the team and have the potential to play more vital roles.

CONCLUSION: The IHC experience demonstrates that mental health services can be effectively integrated into everyday practice in a primary care setting. Clinical and financial burden can be decreased for the health care team, patients, and family.

KEYWORDS: Depression, Primary care, Integrated health care systems, Quality improvement

J Manag Care Pharm. 2006;12(2)(suppl):S14-S20
The World Health Organization defines “health” as “a complete state of physical and mental well-being.” The Surgeon General defines “mental health” as “a state of successful performance of mental and physical function resulting in productive activities, fulfilling relationships with others and the ability to adapt and cope with adversity.” MH is mental health care that is integrated into everyday health care practice. The integration of mental health into primary and medical care simply means treating mental health as any other health condition from identification to recovery. This integration is one example of quality health care delivery redesign that is team-based, outcomes-oriented, and follows a standardized quality process that facilitates communication and coordination according to consumer and family preferences and sound economics.

At IHC, we have well-established chronic care processes for diabetes, asthma, and other chronic conditions (Figure 1). Our clinical work teams for diabetes estimated that approximately two thirds of the community visiting a primary care clinic can be treated for chronic disease by the physician and medical assistant with the support of disease-specific care process treatment tools. One sixth of this population may require some additional follow-up, such as a session with a diabetes educator or a care manager, to support adherence. The remaining sixth may require the primary care provider to seek further specialty consultation, such as with an endocrinologist, due to disease complexity or comorbidity factors that affect compliance. With this conceptual framework in place, IHC leaders built an MH infrastructure across all of the chronic diseases to support the stratification of patient/family health needs to match an appropriate level of collaborative care (Figure 2).

This “MH treatment cascade” helps sort the level of severity of the patient/family into a risk category. As patients and their family have more complex comorbidities, the patient is placed in a higher risk or higher level-of-need category. As risk category increases, additional mental health or team specialty services may be required for the patient and family to reach the identified health outcomes. We have also built a Mental Health Registry that will help link diagnosis and clinical measures to the economic resources needed to achieve selected outcomes.

During a typical day in a primary care physician’s office, the provider may be faced with multiple patients and families, all with varying needs. During a 7-minute visit, the family can present up to 10 different health problems, many of which may have a mental health component or involve an undiagnosed mental health condition. How does the primary care provider begin to assess and organize this complex, emotionally burdened clinical presentation that does not fit into the time-coded office visit? We theorized that implementation of MH would improve the providers’ ability to identify and confidently treat mental health conditions, and improve our detection rates and our providers’ practice satisfaction. We also hoped to improve the functional status of patients (and their satisfaction with care) as well as minimize the cost burden and barriers associated with care access. Our solution was to build an MH quality improvement program.

Building the Program

The MH program was tested in Salt Lake City at an urban primary care clinic that houses a team of well-respected pediatricians and internists. This group of IHC physicians had already initiated collaborative care for conditions such as diabetes and asthma, and they encouraged IHC leadership to redesign the clinic workflow to integrate mental health care as part of everyday practice.

An MH leadership team was established at each regional site to design, implement, and evaluate the MH model, using standard quality improvement principles and a tested economic pro forma. Team membership included key stakeholders, such as lead physicians, mental health practitioners, receptionists, clinic administrators, a quality researcher, consumers, and onsite nursing care managers. The MH accountability was realigned to the clinic manager, who was responsible for recruiting and hiring the MH team and designing an MH operational workflow that would support the clinic primary care providers and support staff.

At the clinic site, the roles of primary care providers, consumers and families, mental health providers, and clinic managers were redesigned and reorganized into a consultative and collaborative treatment team model to improve care for mental health conditions in the primary care setting. Our development, implementation, and support of this team (Figure 3) offers a strong “nonfinancial” incentive for the provider to treat mental health as part of everyday care. The provision of incentives, such as technical assistance, member incentives, provider profiling, education, and clinician recognition, has become an integral part...
Can Mental Health Integration in a Primary Care Setting Improve Quality and Lower Costs? A Case Study

TOOLKIT FOR PRACTICE IMPLICATIONS OF THE PHASE MODEL

Objective: Improvement Healthcare has implemented a Mental Health Integration process—tools, training, and data systems—to achieve improvements in the following:
- Detection of depression in PC settings
- Treatment of depression and other MHI disorders based on best practice guidelines
- Clinical outcomes in terms of accommodative, safety, and functional roles
- Satisfaction of patients, providers, employees
- Goals to patients and families, and to HCC utilization and operations

Process Model

<table>
<thead>
<tr>
<th>Objective</th>
<th>Intermediate Healthcare has developed mental health tools to gather patient information and assist in risk stratification, diagnosis, and care planning. These tools include baseline and follow-up evaluation protocols and a variety of forms. See &quot;Diagnosis,&quot; &quot;Care Plan,&quot; and &quot;Case Plan.&quot;</th>
</tr>
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</table>
| Routine Care | Primary Care Provider
- nurse manager maintains MHI guidelines and works with primary care providers to ensure patient care improvement.

Collaborative Care: Primary Care Provider
- nurse manager works with nurse practitioner to coordinate care.
- mental health specialist works on guidelines and provides follow-up.

Referral to Mental Health Specialist
- mental health specialist provides follow-up and ongoing support.

| Measures | Data systems of the intermediate healthcare team are integrated to assess progress on the 6 objectives of the project, and to continuously improve its process model. Measurements include:
- Detection: changes in detection rates
- Treatment: use of mental health tools, type, duration, intensity, referral rates
- Clinical outcomes: PESI and other health status indicators
- Satisfaction: surveys of patients, providers, employees
- Staff: productivity, satisfaction rates, turnover, utilization rates

The Clinical Model: Team Roles

This integrated team is activated by patient and family preference (Figure 4), which is communicated to the primary care provider and support staff through existing health care relationships. The care manager has a role in the coordination of care and follows up with patients while the psychiatrists and advanced practice registered nurses (APRNs) contribute to the specialty care. In addition, pharmacists can play a key role in this process, and we should strive to identify these extended roles. Finally, community groups, such as the National Alliance for the Mentally Ill (NAMI), are important resources for the patients and family members. It should be emphasized that everyone has a valued and instrumental role on this team. Patients and family members are encouraged to provide an accurate report of the patient's history and current health functioning. In the program at IHC, patients complete the MHI assessment packet, which is provided in paper form and online, and give completed forms to the providers. This helps providers
understand the patients’ treatment preferences and adherence risks as well as the preferences of their family and support system, which helps them to better manage the patients’ chronic illness.

The primary care provider uses the MHI packet to screen, establish diagnoses, and communicate treatment options to the patient and family. This tool facilitates a crucial function of the primary care provider, which is to prepare the patient and family for what to expect from the MHI process. Providers explain the roles of various players on this team and the rationale for working with the different individuals based on the family’s self-reported needs in the MHI assessment packet.

The care manager is responsible for education and follow-up and for communicating with the MHI team regarding the family’s adherence and risk preferences. Care managers are specifically trained to help engage families that may be either isolated from or have exhausted their natural support systems. They provide routine follow-up and assist families with identifying the resources available to them. The managers also document mental health packet results and use the EMR information systems to communicate and follow outcome measures. Our care managers are trained to support not only depressions but also all of the most common chronic diseases seen in our population.

The family is probably the least utilized resource in our health care system. The family is often left to navigate through the reimbursement and access web of our fragmented health system. Family relationships can also have a tremendous impact on the patient’s health condition and, based on their preferences and values, influence adherence rates. We have attempted to educate our teams to assess the family’s values and relational support and then match these with the level of MHI resources that are available. The ultimate goal is to help guide the family to achieve realistic health management goals by building or reinforcing the relational support they will need to improve and manage the patient’s health.

The psychiatrist and APRNs on our team provide consultation and are available either by phone or on site. They also provide ongoing training to other health care team members in assessing complex comorbid diagnoses and pharmacotherapy. Mental health specialists, such as psychologists, social workers, and nurses, can provide on-site, brief, solution-focused cognitive-behavioral psychotherapy and offer support for follow-up care when needed. Families also have the option of using their employee assistance plan or panelled therapist, and this referral link is facilitated and tracked by the care manager.

One question that remains is whether there is a role for pharmacists on our team. As mentioned previously, pharmacists may fulfill the role of the care manager. In some MHI clinics, pharmacists are at the clinic and are utilized as training providers. Due to their expertise in medications and psychopharmacology, clinical pharmacists are excellent resources for the patients, providers, and family members. Often, pharmacists work closely with other members of the multidisciplinary team to offer recommendations and guidance about the safety and appropriate-ness of medicines. Additionally, they can advise providers about the best way to administer medication and monitor for side effects. They develop treatment plans detailing the objectives of drug therapy, produce monitoring requirements, and contribute to collaborative-based care plans. Pharmacists can also answer any questions or concerns that patients or their caregivers may have about either current or future treatment options, conduct interviews to make assessments about medication effects, and make...
recommendations about appropriate drug choices, especially when drug formularies or genetic research offer limited choices.14, 15 The MHI team has also enlisted the support of NAMI, a consumer advocacy community resource, in order to enhance the education and peer mentoring support needed by the families at each clinic site. The Alliance is not only a community resource but also a partner on our MHI team. NAMI completed several focus group reviews of the MHI assessment packet and determined that they were “consumer friendly” with minor changes to the initial introductory page. Our relationship with NAMI in the community may enable families to be linked to one of their trained providers and support advocacy groups. The programs are free of charge and may be extremely valuable to families that cannot afford mental health specialists.

### Mental Health Integration Tools

Our Web site, www.ihc.com/clinicalprograms, provides a primary guide to MHI for our primary care providers. The Web site provides instruction on how to use the MHI assessment packet and how to develop this integrative program. It allows the providers to assemble a patient’s risk factor and measurements and determine the most appropriate level of care for that patient and family. Depending on this risk-sorting process, appropriate steps may be suggested, such as primary care physician management, involving a care manager, or collaborative referral to a mental health specialist.

Once the MHI packets are used to identify potential cases, care can be individualized for each family. The packets are available online and can be used by patients or their family members to assess the patient’s symptoms. This tool will generate a group of scores that can be printed out and brought to the primary care provider, who will interpret and review the scores with the family. This reinforces the patient’s and family’s role as active members of the team.

In addition, our information system, the EMR, is used to communicate between the members of the team. The message log, a tool in the EMR, is used to transmit messages between providers. All communication is electronic, and, in reality, these tools are being utilized regularly. Physicians and practices have adopted these MHI tools, despite their size and complexity, into their practices because their use results in an organized plan for communicating the diagnosis and treatment options to the family and links them directly to an appropriate member of the MHI team.

The Mental Health Registry is another tool that has recently been designed. Its structure is similar to IHC’s diabetes and asthma registries, but it has the additional capacity to link clinical and cost information and measure longitudinal impact. While we have started with depression in the Mental Health Registry, we have built in design capacity to build linked cohort registries for other mental health disorders, such as bipolar and anxiety disorders.

One benefit of the registry is that we are able to track somatic complaints and associated illnesses that have resulted from those complaints and vice versa. Preliminary findings in the Depression Registry show that during the 2-year period of 2003-2004, there were 32,447 patients in the Depression Registry (29,226 adults and 3,221 children), with 18,708 of these patients (16,366 adults and 2,355 children) being insured by IHC health plans for whom all clinical and claims costs outcomes are available for the purpose of analytical studies.

We are also analyzing clinical and cost outcomes according to risk “sorting” stratification. The registry is useful in determining...
the resource level needed for different levels of severity of these disorders as well as cost to families. Employer groups are especially interested in the cost aspect because they often provide benefits for the entire family. As mentioned before, depression and other mental health conditions affect not just the patient, but the entire family. The registry will provide invaluable information for employers to assess the value of improved depression care.

**Initial Results**

So how are our primary care physicians performing in the detection of depression? In a trend analysis, when compared with primary care clinics (similarly matched) without MHI intervention, the intervention group performed significantly better in detecting depression (Figure 3). Rate of detection for depression for adult patients, as measured by the proportion of patients per quarter diagnosed with depression (based on the International Classification of Diseases, Ninth Revision [ICD-9] depression codes), improved significantly in the test clinic, as compared with the control clinics, which consisted of 8 primary care outpatient clinics in the central urban region where the test clinic was located. In addition, the total claim costs were slightly better for the intervention group compared with the nonintervention group (Figure 4). The cost increased after the intervention, as expected, since the detection rate of depression increased. The number of pharmacy claims also increased as more patients were diagnosed, received a prescription, and actually filled the medication from the pharmacy (Figure 7). Total cost analysis was important to demonstrate to the health plans that the interventions actually neutralized or even reduced the cost burden.

The most critical components of our MHI system are clinic and community accountability, a family/consumer health focus on recovery, and the clinical and economic tools to enhance decision making and facilitate partnerships. The clinical model empowers providers to communicate with each other and develop relationships with patients and family members. The flexibility and automation capability of the information system and data registry has proven to be especially important in sustaining system and practice changes.

The overall goal of the MHI program was to reduce the burden for primary care physicians by developing tools and teams. The initial results—which showed that MHI improved clinical outcome, increased depression detection rates, and improved patient satisfaction but did not increase health care claims costs—were an encouraging start. Even though the results were preliminary, they were positive enough to obtain the support of IHC upper management to extend the MHI model to other primary care clinics within the IHC system. To date, MHI has been deployed in 8 clinics within the IHC system, and we have plans to deploy MHI in a total of 15 additional IHC primary care clinics. This economic model has enabled all of IHC’s service delivery regions to establish an affordable business case in support of deploying MHI throughout their primary care services.

The case study at IHC has demonstrated that MHI is possible and effective within a primary care setting and that clinical and financial burden can be decreased for the health care team, patients, and family.

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Can Mental Health Integration in a Primary Care Setting Improve Quality and Lower Costs? A Case Study

The National Alliance on Mental Illness (NAMI), formerly the National Alliance for the Mentally Ill, is a community partner that recognizes the voice of patients, consumers, and family members and articulates that voice to health care providers, policy makers, and the public. The Alliance has local chapters across the country. One chapter, NAMI Utah, has been in partnership with Intermountain Health Care (IHC) to improve the care of patients with depression.

Barriers to Care: Stigma Tops the List

From the perspective of patients or consumers, there are several barriers to treatment of depression, especially surrounding the issue of stigma. In addition, due to lack of parity of mental health with general medical health care, access to care and medications is still a significant concern. When discussing stigma, it may be surprising to find that many people still think mental illness is a result of sin or due to a lack of character or willpower. Mental illness has also been attributed to lack of education or resources, yet it is known that these disorders are prevalent across all socioeconomic levels. In addition, due to the biological nature of mental illness, there is little evidence to suggest that poor upbringing leads to mental illness. However, we do know that, with the genetic predisposition individuals may have, there are certain environmental risk factors that can exacerbate the symptoms of mental illness. Likewise, family support and a supportive environment can aid in patient treatment outcomes and recovery.

Investigators from the University of Utah School of Medicine studied a group of youths aged 13 to 21 years who completed a suicide between August 1996 and June 1999. The study found that, according to parent reports, 70% of youth descendants had received a formal diagnosis of mental illness prior to death; however, none was in active public mental health treatment at the time of death. Furthermore, despite these youths having a prescription for psychotropic medications, these medications were not detected at therapeutic or even subtherapeutic levels.

In order to investigate the potential barriers to treatment of underlying mental health disorders, 49 families of suicide completers were interviewed, totaling 270 community contacts. Presented with 20 possible barriers to mental health treatment, with the option to write in additional barriers, the 5 primary barriers reported by these families were related to stigma (Table 1). Stigma remains one of the primary, underlying barriers.

Access to Care

Access to care is another important issue with which most providers and patients are familiar. Identifying a mental health provider is often difficult, and receiving timely appointments is a
constant struggle. In addition, financial barriers to treatment exist because many insurance companies do not cover mental health care or do not cover the benefit at a rate that patients can afford. There is an especially vulnerable population, consisting of those who do not qualify for Medicaid and yet cannot afford private mental health care, for whom access to affordable mental health care is a serious problem. With diminishing coverage for mental health care, integrated mental health care is only part of the solution—integrated coverage is required. The issue of nonparity between general medical care and mental health care perpetuates the stigma. While providers may stress that depression is like any other illness, unfortunately there remains a difference in terms of how care is provided and financed. What we need is true parity—in mental health coverage, copayments, access to professionals, and access to medications.

Mental Health Parity

Parity is an important issue because mental illness can affect many aspects of life, including relationships and employment, and cause a significant financial and medical burden. Untreated or inadequately treated mental illness can often lead to significant morbidity that may include substance abuse, hospitalizations, incarcerations, and suicide. Families and patients alike have expressed frustrations about situations in which a clinically effective combination of medications has been found, yet coverage for the medications was not available due to a formulary change. Often, the most discouraging aspect is not having information about the medications. Patients and family members often are not well-informed about adverse events, onset of medication effects, or duration of therapy. Again, lack of knowledge about psychotropic medications is a considerable barrier that can significantly affect the patient’s future adherence to therapy.

The Mental Health Integration program, through IHC, reduces much of the stigma within mental health care. Patients develop a trusting relationship with their primary care physician. There is better access to care, earlier identification and intervention, and a shorter waiting period for referrals. Parity is less of an issue since the primary care visits and medications are covered by the insurance plan through general medical benefits. There is less stigma associated with prescribing antidepressants in the primary care setting, and, by reducing stigma, there are increased benefits for patients.

Levels of Support

While patients are the focus of the treatment plan, providers cannot ignore the various players who may be involved in their patients’ care. Three levels of support are necessary in a behavioral health setting (Figure 1). The patient, family, and the community need to have a voice and be involved in the care of the patient. While this may initially seem like a significant burden in terms of time and effort, it is believed that these efforts will ease the burden of providers over the longer term.

According to the Freedom Commission on Mental Health, mental health care should be consumer- or patient-driven. Patients should always participate in their treatment plan, being fully informed of the plan and medications—their potential adverse effects and the importance of adherence. Patients and family members are important sources of information and can assist in the formulation of the treatment plan. Patients and family members understand the challenges of living with a mental illness and the associated stigma. With the Mental Health Integration program and its evaluation tools, these consumers are able to navigate through the system more easily.

In addition to patients and family, the community should be involved in supporting the patient and family. Patients and family members should be provided with information on how to access the resources available to them and how to connect with community members who can potentially alleviate some of their burden. Involving the community can benefit everyone on the team, including the patient, family, community, and providers. Of course, providers do not have to be expert in all of the resources available in the community—a reputable community organization, such as NAMI, can be used to form partnerships for the purpose of referrals. Information on community resources can be provided
through brochures in waiting rooms, Web sites, mailings, and, most of all, recommendations from physicians and team members. Recommendations from providers can be extremely helpful and further reduce the stigma of seeking assistance from the community.

NAMI: Voice of Consumers and Families

NAMI offers support, education, and advocacy for the patient, the family, and the community. The role of NAMI within the Mental Health Integration program has been to bring the family and consumer voice into the program. The NAMI programs available for the Mental Health Integration program all utilize the “recovery model” and offer peer-to-peer programs for those with serious mental illness. The patient learns how to manage his or her own illness and becomes empowered to learn the skills associated with disease management. NAMI also offers family-to-family programs so families can become educated on mental illness and learn how to care for themselves while they are caring for their loved one. Patients and family mentors are available as a referral system, offering guidance to patients and their families on community resources specific to their needs. In addition, NAMI offers community education to raise awareness of mental illness and help eliminate its stigma.

NAMI’s emphasis is on recovery. Its main message is: “You are not alone, treatment works, recovery is possible, and there is hope!” In order to fully realize this hope, patients must get access to treatment and medications. With future innovations and programs in place, this hope may be realized for all patients with mental illness and their family members. For further information, go to National Alliance on Mental Illness, www.nami.org.

REFERENCES

Managing Depressed Patients With
Comorbidities and Dual-Eligibility Benefit Status

MICHAEL ARIZPE, RPh

ABSTRACT

OBJECTIVE: To discuss the challenges and requirements in developing and implementing strategies for the appropriate management of depression in a subpopulation of dual-eligible patients with comorbidities.

SUMMARY: Treating patients with comorbidities who are dually eligible for Medicare and Medicaid services is challenging. In this vulnerable population, condition management strategies should address new patient cost-sharing responsibilities, improve or minimize the disruptions in access to medications, monitor for potential adherence issues, and, most importantly, strive to maintain, if not improve, overall health outcomes. Complicating these essential strategies are concerns about defining who is responsible for providing treatment to dual-eligible patients and the potential loss of vital services at various levels, including transition of care or the possible discontinuation of or severe limitations on reimbursement for key services.

CONCLUSION: Condition management strategies should be developed to deal with the unique needs of the dual-eligible population to ensure continuity of care. Additionally, an organizational infrastructure is necessary to give providers useful tools to help them deliver better-coordinated care to the dual-eligible population that struggles with depression.

KEYWORDS: Managed care, Mental illness, Dual eligible

J Manag Care Pharm. 2006;12(2)(suppl):S24-S29

Mental illness is a very real concern in the Medicare population. Approximately 2.5 million people (38%) of patients dually eligible for Medicare and Medicaid benefits have mental or cognitive impairment. In this population, with its older age, prevalence of disabilities, and other demographics, mental illness is often comorbid with one or more chronic illnesses.

Patients with comorbidities who are dually eligible for Medicaid and Medicare services are among the most vulnerable segments of our health care population. Adequate care of these patients involves coordinating multiple subspecialists, numerous medications, several services, and, consequently, very complex Medicare and Medicaid claims. True condition management strategies to improve overall health outcomes in these patients are concerned with addressing patient cost-sharing obligations if present, minimizing the disruptions in access to medications, and monitoring for potential adherence issues. However, providing adequate continuity of care in this clinically complex population is laden with overwhelming obstacles and requires a more tailored approach to management and implementation strategies.

FIGURE 1


64% >65 Years, While 36% Were Nonelderly (<65 Years) With Disabilities
3X More Likely to Be African American or 2X More Likely to Be Hispanic vs. Nonduals
3% in an Institution vs. 3% of Nonduals
62% Were Females vs. 35% of Nonduals
17% of All Medicare and 16% of All Medicaid
62% Were Females vs. 35% of Nonduals
17% of All Medicare and 16% of All Medicaid
23% in an Institution vs. 3% of Nonduals

Demographic Assessment—Who Is the Dual-Eligible?
Managing Depressed Patients With Comorbidities and Dual-Eligibility Benefit Status

**Table 1**

| Health Status Among Dual-Eligible Patients and Other Medicare Beneficiaries, by Age, 2000 |
|------------------------------|-----------------|-----------------|-----------------|
| % With <65 | >65 | <65 | >65 |
| Fair/poor | 63 | 46 | 66 | 20 |
| Hypertension | 45 | 63 | 53 | 57 |
| Heart disease | 16 | 31 | 24 | 23 |
| Stroke | 11 | 16 | 13 | 10 |
| Diabetes | 80 | 27 | 60 | 35 |
| Arthritis | 84 | 60 | 55 | 59 |
| Pulmonary | 23 | 18 | 21 | 13 |
| Mental disorders | 59 | 12 | 35 | 0 |
| Alzheimer's | 8 | 6 | 3 | 3 |


**Table 2**

<table>
<thead>
<tr>
<th>Assessment—What Is the Dual-Eligible Responsible For</th>
<th>Accumulative Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Full and non-full duals</td>
</tr>
<tr>
<td>Premium and Deductible</td>
<td>Cost Sharing</td>
</tr>
<tr>
<td>Population</td>
<td>No premium</td>
</tr>
<tr>
<td>No premium</td>
<td>No deductible</td>
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<tr>
<td>No premium</td>
<td>No deductible</td>
</tr>
<tr>
<td>Up to 15% FPL</td>
<td>No premium</td>
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<tr>
<td>15% to 150% FPL</td>
<td>No premium</td>
</tr>
<tr>
<td>&gt;150% FPL</td>
<td>No premium</td>
</tr>
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</table>

From Federal Medicare Prescription Drug Coverage: www.dshs.state.tx.us/ dbprograms/medicaid/medicare hac/medicare_plan_summary.pdf; Texas Department of State Health Services; FPL—federal poverty level.

**Dual-Eligible Beneficiaries**

By definition, a dual-eligible beneficiary is someone who is eligible for both Medicare and Medicaid benefits. Most of these patients are older than 65 years (64%), female (62%), of low socio-economic status, and 3 times more likely to be African American and 2 times more likely to be Hispanic (Figure 1). The dual-eligible beneficiaries who are not elderly have disabilities (36%). More than 60% of dual-eligible individuals live below the poverty level, with 94% of this subgroup living below 200% of the poverty level. Most dual-eligible patients live with a family member, 16% with a spouse and 31% with their children. However, 31% of dual-eligible patients live alone and another 23% reside in an institution.

Relative to non-dual-eligible individuals, dual-eligible beneficiaries have more health issues. Slightly more than 20% of the dual-eligible population reports being in poor health as compared with less than 10% of the non-dual-eligible population. Dual eligibles are also more likely to have greater limitations in activities of daily living (ADLs)—e.g., bathing and dressing—than non-dual eligibles. One third of dual eligibles have impairments in 3 to 6 ADLs. Dual-eligible beneficiaries are also often burdened with one or more chronic illnesses such as hypertension, heart disease, stroke, diabetes, arthritis, and pulmonary conditions as well as behavioral health conditions (Table 1). In the year 2000, 45% of the dual-eligible patients younger than 65 years had hypertension. Of those older than 65 years, 63% had hypertension. On the other hand, 59% of the patients younger than 65 years had mental disorders, whereas 12% of people older than 65 years had a diagnosis of mental illness. It should be noted that while 12% may seem like an insignificant rate for the elderly, it is still twice the rate of mental illness in the same-age non-dual-eligible population.

**Responsibilities of the Dual-Eligible Population**

Dual-eligible patients have one of two types of eligibility—full eligibility and partial eligibility. The full dual-eligible patients have 100% coverage, with benefits including a waiver program, skilled nursing facilities, and other services. Full dual-eligible patients are entitled to Medicaid benefits that Medicare does not cover, including Medicaid drug coverage. Partial dual-eligible patients are only eligible for Medicaid payments that cover Medicare premiums, deductibles, and coinsurance for Medicaid services. They are not entitled to Medicaid prescription drug coverage. Benefits for these partial dual-eligible patients are stratified according to their needs and, hence, eligibility is limited in several categories of Medicaid coverage. Partial dual-eligible patients may maintain certain responsibilities, usually fiduciary responsibilities.

The responsibilities of the dual eligible, particularly full dual-eligible beneficiaries, changed considerably when their prescription drug benefits shifted from Medicaid to Medicare under the Medicare Modernization Act of 1993 (MMA) that went into effect January 1, 2006. The new legislation mandates that
Managing Depressed Patients With Comorbidities and Dual-Eligibility Benefit Status

states. Dual-eligible patients in an institution have no cost sharing, no premium, and no deductible. There is a new low-income subsidy group in which members have incomes as low as 133% of the federal poverty level; patients in this group may or may not have a premium or deductible but do have some cost-sharing obligations. Data from the Texas Department of Health Services presented in Table 2 illustrate how the new legislation has changed the specific responsibilities of the full and partial dual-eligible population.

![Diagram](image)

**FIGURE 2** Relationship Between the Pharmacy Benefits Manager (PBM) and Various Parties to a Prescription Drug Benefit

- **Enrollee**
  - **Prescription**
    - **Physician**
      - **Information**
      - **POD Review**
    - **Pharmacy**
      - **Information**
      - **POD Review**
    - **Distributor**
      - **Drugs**
      - **Manufacturer**
      - **Health Plan**

The pharmacy benefits manager (PBM) and the primary care provider (PCP) will be the central players in the process of delivering prescriptions. The PBM will be responsible for the cost-sharing impact on treatment, while the PCP will be responsible for the care of the dual-eligible population. The diagram in Figure 3 illustrates 3 levels of care—

- **Inpatient Care**
  - **Medical Care**
    - **Surgery**
  - **Psychiatric Care**
    - **Behavioral Health**

- **Outpatient Care**
  - **Primary Care**
    - **Elderly**
  - **Behavioral Health**
    - **Psychiatric**

- **Community Care**
  - **Community Impact**
  - **Social Worker**
  - **Case Management**
  - **Home Health Care Delivery**

Dual-eligible patients are more likely to be less educated, with only 28% having a high school diploma compared with 62% of the non-dual-eligible population. This is a significant concern when we consider how providers will educate and treat these patients.

The relationships between a pharmacy benefits manager and various parties pertaining to a prescription benefit are shown in Figure 2.10 When caring for the dual eligible, the picture becomes more complex as we follow thetrail of the prescription—trying to determine where the prescription is going, who is writing it, and who is rendering care. As mentioned previously, 38% of dual-eligible individuals have a mental or cognitive impairment. According to the National Mental Health Organization, 37% of older adults show signs and symptoms of depression when they visit their primary care physician (PCP). In addition, older adults have the highest rate of suicide of any age group in the country. More than half of all Medicare recipients younger than 65 years who have disabilities also have problems with mental health functioning. Additionally, the demographic characteristics of the group indicate a health literacy deficit. Dual-eligible beneficiaries are more likely to be less educated, with only 28% having a high school diploma compared with 62% of the non-dual-eligible population. This is a significant concern when we consider how providers will educate and treat these patients.

The PCP is just one of the many individuals who may be responsible for the care of the dual-eligible population. There are many types of specialty providers who can potentially treat the comorbid conditions of the dual-eligible population. Unfortunately, this population is at risk of losing valuable services and benefits, a loss that could also make effective drug delivery difficult. The diagram in Figure 3 illustrates 3 levels of care—the providers who delist or coordinate care, those who provide support care such as home health, and finally, those who provide...
such services as pediatric, vision, or dental care or social case management. Care given by this last group of providers is at risk because their funding could be eliminated at the state level.16

Consider the clinical impact resulting from the lack of such ancillary services as pediatrics or vision care. Imagine, for example, the problem of telephone outreach for hearing-impaired patients who do not have coverage for hearing aids or providing printed educational materials to low-vision patients who would have difficulty reading them without reading aids. Elimination of these services can become an impediment to the PCP who is trying to achieve optimal outcomes when treating dual-eligible diabetes patients.17 The refinement and maintenance of such an ancillary services infrastructure is vital for these interventions to be appropriate, timely, and effective. Fortunately, from a patient advocacy perspective, groups such as Families USA and the National Council for Community Behavioral Healthcare can provide a voice for health care consumers and support these services.

In addition, the dual-eligible population may come to and from multiple sites of care, including hospitals and skilled nursing facilities. Although the decision to transition patients may depend on the affordability of their care, this transition must be better coordinated. Patients who transition to a long-term health care facility from a hospital or to their homes need increased attention paid to maintaining their pharmaceutical care. This requires a coordination activity that primarily centers on maintaining, if not enhancing, the prescribed pharmacotherapy regimen to streamline treatment. For example, medications not only need to be delivered after a discharge from a hospital or home to the next facility that is delivering care—e.g., a rehabilitation unit—but they must also be assessed for the appropriateness of the medication use in the facility. This may include matching fixed strengths of 2 medications to a combination regimen or considering an extended-release formulation. Both of these examples can lead to more efficient care and reduce the cost impact for the patient or payer. If there is a disruption in the provision of medications, it is uncertain who is responsible for remediating these pharmacotherapies. Thus, while changing the level of service may lead to a more optimal site-of-care or cost savings, the delivery of pharmaceutical care may be disrupted and delayed.

Tailoring Condition Management Strategies for the Dual-Eligible Population

Tailoring the designs of the condition management strategy to the unique needs of the dual-eligible population is key. Implementing a “best-in-class” strategy in this population specifically requires considering shifts away from traditional cost control trends such as 3-tier plan design, PCP-centered provider unit cost profiling, counter-detailing, and prior authorization interventions (Figure 4).18

Newer cost-containment approaches might include preferred drug-to-condition lists, rebate systems, health funds, and more practical systems to disseminate information to PCPs, including e-messaging from hand-held personal digital assistant devices.

With these shifts come questions about accountability. The traditional unit-cost mentality has taken a very incremental approach to the treatment of dual eligibles in which the prevailing philosophy of a return on investment is based on the best decision that applies specifically at that time to that patient. The newer unit cost of a condition for dual eligibles should integrate step therapy, formulary, and shift analysis with accountability based on the prevailing unit cost tied to metrics; it should be tied to at least 1 financial metric; but, ideally, also to 2 quality metrics. The 2 quality metrics envisioned are a combination of the overlap of a nationally recognized but locally accepted medical-community guideline component and a patient-perceived benefit. These additional considerations may enhance the outcomes of the chronic care model.

Management strategies focused on addressing accountability must review the functionality of depression screening, member-specific adherence to medication, and utilization reports in this particular dual-eligible population. Such specific evaluations of patient adherence are necessary to optimize condition management and drug use. As one of the many individuals who may be responsible for the care of the dual-eligible population, the PCP needs to screen for depression just as for other chronic disease states. Since most screening for depression takes place within the primary care setting,19,20 PCPs must receive adequate reimburse-
The most responsive infrastructure must be able to support either a chronic care model for care delivery or resources for PCPs to help them tailor their services to the dual-eligible population. Organizational resources need to be dedicated to monitoring of patient adherence to medications, with clinicians receiving patient-specific utilization reports that detect medication omissions and discontinuation rates. Once developed and routinely used in clinical practice management, such tools will allow clinicians to deliver continuous, better informed, quality care to their dual-eligible patients.1

FIGURE 5 Community Assessment—What Is the Status of the Dual Eligible?

16% Live With a Spouse vs. 55% of Nonduals
66% Live Below Poverty Level and 94% Live Below 200% Poverty Level
31% Lived Alone vs. 28% Nonduals
31% Lived With Their Children* vs. 14% of Nonduals


DISCLOSURES
This article is based on the proceedings of a symposium held on October 6, 2005, at the Academy of Managed Care Pharmacy’s 2005 Educational Conference in Nashville, Tennessee, which was sponsored by an educational grant from Wyeth. The author did not receive an honorarium from Wyeth for participation in the symposium. He discloses no potential bias or conflict of interest relating to this article.

REFERENCES

Conclusion
While dual-eligible patients comprise only 16% of all Medicaid patients, they consume 42% of all Medicaid expenditures.1 While the dual-eligible population is a demographically unique population and notably distinct from the overall Medicare population (Figures 1 and 5),7 although significant changes may not appear to be possible, we must still ensure that the infrastructure to support these individuals can overcome their barriers to care and be sustained.1 Cultural competencies must be in place to accommodate the economic, ethnic, and educational diversity of this population.

The more integral role of family in the care of this population necessitates a combined infrastructure of community outreach and health delivery systems to support both the patient and the family member who often serves as an at-home caregiver. Furthermore, we must monitor the implementation of the recent MMA-mandated shift in drug benefit to insure that adequate provisions are made for prominent subgroups of this population—such as those with disabilities, those older than 85 years, and those with exceedingly low incomes—for whom increased financial obligations might impede access to appropriate drug coverage. An organizational infrastructure that supports either a chronic care model for care delivery and provides resources for PCPs will deliver better-coordinated care to the dual-eligible population that struggles with depression.
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Challenges of Program Implementation in a Managed Care Environment: A Case Study in Measuring Medication Persistence

BLAKE CHRISTIANSEN, BSPharm, MS

ABSTRACT

OBJECTIVE: To describe the challenges of implementing a disease management program in a managed care environment.

SUMMARY: A key element in the successful management of depression is ensuring persistent consumption of medication throughout the duration of a standard course of therapy.1 This is also one of the most difficult elements for treating physicians to track because they rarely have easy access to the exact records necessary to determine medication persistence. Prescription claims databases do contain this information. Properly identifying problem consumption patterns from these data is one of the most valuable services that managed care pharmacists can provide in a disease management program. The experiences of Aetna Inc. in implementing a depression management program illustrate some of the most important factors to be considered when designing a program: obtaining approval from senior management, measuring baseline performance before program initiation, selecting plan members and physicians based on patterns of consumption in prescription claims data, and quantifying effectiveness.

CONCLUSION: A visual representation of prescription refill dates and quantities available in prescription claims databases allowed member physicians to determine, at a glance, which patients had been receiving medication for the period during which each patient was taking medication according to prescription claims data. This arrangement allowed physicians to determine, at a glance, which patients had been receiving medication for the period of time recommended in treatment guidelines.

Implementing such a program requires several steps with which all managed care pharmacists are familiar. The Aetna program will be used as a case study to illustrate some of the most important factors to be considered when designing a program: obtaining approval from senior management, measuring baseline performance prior to program initiation, selecting plan members and physicians based on patterns of consumption in prescription claims data, and quantifying effectiveness by measuring results.

Plan Member Populations and Medications Examined

It is important, during the design phase of a disease management program, for the development team to discuss the specific characteristics of the member population to be included. These characteristics will vary depending on the specifics of the disease state targeted. For example, with depression programs, there should be some consideration about whether pediatric patients should be included; because of the ambiguity within the medical literature regarding the most appropriate therapy for these patients. These members were not included in the Aetna program.

Another point to be discussed is whether to include members under the care of a specialist. It may be argued that such members have more complex disease states and that treating psychiatrists are already very familiar with the standard treatment guidelines, which they adapt to the more unusual conditions of their individual patients. But they do still face the problem of lack of easy access to prescription refill records and may find concise information on...
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Antidepressant medications are indicated for several conditions other than depression, including obsessive-compulsive disorder, panic disorder, anxiety conditions, and posttraumatic stress disorder. For example, if tricyclic antidepressants (TCAs) are included in the program, this list of indications may include chronic pain, urinary incontinence, and several other conditions. Likewise, if trazodone is included, then insomnia may be the most relevant indication. It would be confusing to the member and physician if educational materials were sent on depression treatment for patients who were prescribed the medication for another condition. While this problem of misidentification is a general limitation of algorithm-driven programs, the problem can be minimized by combining pharmacy claims data with medical claims data. If this is not available, then the list of antidepressant drugs used as triggers of member identification should be limited to only those that are not frequently prescribed for conditions other than depression.

Since medical claims data was available in the Aetna program, only the members with an International Classification of Diseases, Ninth Revision (ICD-9) diagnosis code specific to depression were included (ICD-9 codes 296.2, 296.3, 300.4, 301.12, 311). If the data available are restricted to pharmacy claims, then it is important for the cover letter or educational materials to include a disclaimer indicating that some of the patients identified by the program may be taking the medication for conditions other than depression.

This is an example of the graphical representation of medication persistence physicians received from Aetna Inc. as part of a depression management program. The graph shows bars on a calendar representing the time period during which each patient was taking medication according to prescription claims data.
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inhibitor. Once members have been identified as being treated for depression, however, other medications such as TCAs or trazodone should be included in the overall examination of the patient's pattern of consumption. If the claim is made that the member was not taking antidepressant medications during a specific time period, and the treating physician knows that the member was in fact taking a tricyclic, then the overall credibility of the information may be questioned.

■ Measuring Baseline Performance

Obtaining a baseline measurement of the number of plan members who receive a full course of therapy and maintain adequate medication persistence, before a program is implemented, is important both in selling the program to senior management and in determining whether the program was effective. Factors that must be considered when measuring this baseline include changes in overall consumption patterns over time, changes based on the location of plan membership, and changes based on the drug mix being consumed.

Figure 2 depicts graphical representations of various effects of time on claims data. In 2A, there is some random variation in the percentage of members who remained persistent for 6 months of treatment, depending on the month at which the data were measured, but there is no discernable overall pattern. If the data were to show instead a steady change over time, as in the hypothetical pattern shown in 2B, then that change must be accounted for. If the program were implemented in December in this case, it would be very difficult to claim that the increase seen from December through the following July was due to the program, rather than being a continuation of the underlying trend seen before.

If such a pattern were to be seen, then it would be important to determine the cause in order to decide whether that underlying trend would be expected to continue during the period following the intervention. Ideally, some subset of members to whom the program did not apply (for reasons such as plan design or plan sponsor “no-touch” requests) should be used as a control group. A fitted trend, such as the Hodrick-Prescott filter, can then be calculated for the control group; if this trend matches for the study and control groups prior to the intervention, then the trend for the control group after the intervention can be removed from the study group.

While the hypothetical pattern seen in 2B would be very unlikely in real data, the pattern in 2C is more likely, and was, in fact, typical of certain metropolitan areas at more northern latitudes within the Aetna program. Cities at southern latitudes did not display this pattern, leading to the hypothesis that some of the patients starting antidepressant treatment in the autumn and winter may have been suffering from seasonal affective disorder and may have discontinued their medication early once spring brought more hours of daylight. In these cases, a program started in August or September may artificially appear to actually reduce duration of treatment, a fact that must be accounted for in determining program effectiveness.

In this case, it would be important to compare postintervention results with preintervention results from only the same time period during prior years, not with the time period immediately preceding it.
before the intervention. If enough data is available to use autoregressive time-series statistical techniques, then seasonality can be accounted for by using a model such as ARIMA (AutoRegressive Integrated Moving Average), which allows for seasonal adjustment, to project a forecast of what the results would have been without the intervention. This forecast can then be compared with the actual postintervention data to determine whether the results fell outside the confidence interval of the predicted results.

This approach does require a substantial amount of data prior to the intervention (generally at least 3 years, during which there have been no major shifts in standard treatment for the condition being studied); it also is limited to results that are expected to appear quite soon after the intervention because the confidence interval for the predicted results widens substantially for each successive time period after the intervention.

Similarly, if there were changes in the location of the membership population during the program period or the baseline measurement period, then it is possible that those changes could skew the results. This could happen, for instance, if the plan underwent a merger or acquired a new client that brought into the program a large number of new members in a city where membership previously had been low. Local medical practices may affect treatment patterns in different metropolitan areas, so if there was a substantial change in membership, then that possibility should be accounted for in the data analysis by restricting postintervention data to the same populations that received the intervention and using multivariate statistical techniques that include geography in the regression model.

Changes in the drug mix used for treatment may also potentially skew the results. It is possible that certain drugs are more frequently associated with longer duration of treatment than other drugs within the same therapeutic category.

If a change in the drug mix consumed by the population were to occur (e.g., due to introduction of new medications to the market, supply difficulties by a particular manufacturer, or changes in the health plan formulary or policy), then that change should be explained.

### Measuring Persistence

Converting pharmacy claims data into useful information on medication persistence requires the dedication of computer programming resources, which are typically scarce within any organization. This challenge to program implementation may appear extremely difficult to overcome. Many desktop applications, however, include access to a programming language that is both powerful enough to handle this task and safe enough to fit within corporate security guidelines designed to prevent corruption of network data by unauthorized computer programs. Microsoft Visual Basic for Applications, which is available within the standard desktop implementations of Microsoft Excel and Microsoft Access programs, was the language used for the Aetna program. Managed care pharmacists who are reasonably astute in computer usage may well be able to teach themselves enough about embedded languages to develop such an application.

Because of the need to accomplish this in order to implement any medication persistence program, some time will be spent here discussing the technical details of how it is done.

Figure 3A shows typical prescription claims data, and 3B shows these data converted into a format useful for measuring persistence. Usually this format is placed within the programming data structure known as an array, although some programmers may prefer a linked list or other data structure. For purposes of this figure, it is perhaps easiest to think of the 2 rows of data in 3B as 2 rows in a spreadsheet. The first box in the top row, which contains a Y, would correspond to cell A1 of the spreadsheet. The Y refers to the fact that, yes, this member did have medication available on the date referred to by this cell.

Row 2 labels the days for each cell in row 1. Thus, cell B1 corresponds to 01/01/2005, the first 10 days of row 1 all contain a Y. The next prescription was filled on 01/14/2005, and was also for a 10-day supply, the first 10 columns of row 1 all contain a Y. The next prescription was filled on 01/19/2005, and was also for a 10-day supply, so the cells corresponding to this date are marked with a Y. This leaves a gap during which the member had no medication available for days 11, 12, and 13. Much of the art of measuring persistence lies in interpreting this gap and specifically assessing whether its duration indicates an interruption in medication usage to an extent representing nonadherence.

### Measure Persistence Gap

Rewriting Prescription Claims to Measure Persistence Gap

<table>
<thead>
<tr>
<th>Weekday</th>
<th>Drug</th>
<th>Date</th>
<th>Qnt</th>
<th>Rec. Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPROD</td>
<td>Flurazepam 30 mg</td>
<td>01/01/2005</td>
<td>10</td>
<td>B</td>
</tr>
<tr>
<td>AMIBUDE</td>
<td>Flurazepam 25 mg</td>
<td>01/14/2005</td>
<td>10</td>
<td>B</td>
</tr>
</tbody>
</table>

This is an example of the graphical representation of medication persistence physicians received from Aetna Inc. as part of a depression management program. The top (A) of this figure represents how pharmacy claims data appear. The bottom (B) is a calendar representation of the days since the patient began taking medication.

Changes in the drug mix used for treatment may also potentially skew the results. It is possible that certain drugs are more frequently associated with longer duration of treatment than other drugs within the same therapeutic category. If a change in the drug mix consumed by the population were to occur (e.g., due to introduction of new medications to the market, supply difficulties by a particular manufacturer, or changes in the health plan formulary or policy), then that change should be explained.

### Challenges of Program Implementation in a Managed Care Environment: A Case Study in Measuring Medication Persistence

Converting pharmacy claims data into useful information on medication persistence requires the dedication of computer programming resources, which are typically scarce within any organization. This challenge to program implementation may appear extremely difficult to overcome. Many desktop applications, however, include access to a programming language that is both powerful enough to handle this task and safe enough to fit within corporate security guidelines designed to prevent corruption of network data by unauthorized computer programs. Microsoft Visual Basic for Applications, which is available within the standard desktop implementations of Microsoft Excel and Microsoft Access programs, was the language used for the Aetna program. Managed care pharmacists who are reasonably astute in computer usage may well be able to teach themselves enough about embedded languages to develop such an application.

Because of the need to accomplish this in order to implement any medication persistence program, some time will be spent here discussing the technical details of how it is done.

Figure 3A shows typical prescription claims data, and 3B shows these data converted into a format useful for measuring persistence. Usually this format is placed within the programming data structure known as an array, although some programmers may prefer a linked list or other data structure. For purposes of this figure, it is perhaps easiest to think of the 2 rows of data in 3B as 2 rows in a spreadsheet. The first box in the top row, which contains a Y, would correspond to cell A1 of the spreadsheet. The Y refers to the fact that, yes, this member did have medication available on the date referred to by this cell. Row 2 labels the days for each cell in row 1. Thus, cell B1 corresponds to 01/01/2005, the first day in this member’s drug history, and cells A1 and B1, taken together, indicate that on this date the member had drug available. Since the prescription filled on this date was for a 10-day supply, the first 10 columns of row 1 all contain a Y.

The next prescription was filled on 01/14/2005, and was also for a 10-day supply, so the cells corresponding to this date are marked with a Y. This leaves a gap during which the member had no medication available for days 11, 12, and 13. Much of the art of measuring persistence lies in interpreting this gap and specifically assessing whether its duration indicates an interruption in medication usage to an extent representing nonadherence.

While the Yes-No approach illustrated in Figure 3 is useful, it accords neither for the possibility of insufficient dosage nor for the handling of member histories that include multiple types of antidepressant medication. Consider Figure 4. In A the member has 2 different types of medication, fluoxetine and amitriptyline, with 2 different strengths of amitriptyline. In B, this history is placed onto the spreadsheet, with one row representing each drug and strength (or into a 2-dimensional array, with each row of the array representing one drug and strength). Rather than a binary VN to designate if the drug is available or is not available, as demonstrated in Figure 3, each cell now contains a number...
corresponding to the number of doses of the particular drug available on the particular date. The member received 60 tablets of amitriptyline 10 mg on 01/01/2005, which was a 30-day supply; 60 is divided by 30 to yield 2 tablets per day, so 2 was placed into the cells in row 1 for each of the 30 days from 01/01/2005 through 01/30/2005.

To translate this into useful information on persistence, a table such as that shown in Figure 4C was developed. The medical literature indicated that, for an adult, a daily dose of 50 mg of amitriptyline is required to effectively treat depression, so one tablet of 10 mg would represent 20% of the minimum adult dose. The 2 tablets in row 1 of Figure 4B were therefore multiplied by 0.2 and placed into the appropriate cells in the array in Figure 4D. This was repeated for each drug in the member's history. All of the cells in each column corresponding to a single day were summed into the final array shown in Figure 4E. The gap days being measured were then considered to be all days having a total of less than 1 in the final array.

Sometimes, using this approach will present a data cleanup problem that must be corrected. In Figure 5, when the prescriptions were originally filled, the days' supplies were entered incorrectly as a 2-day supply for each claim. The algorithm then dutifully performed the same calculations as shown in Figure 4, with the resulting assumption that on days 1 and 2, the member consumed 1,100% of the standard adult minimum dose, with a gap extending from days 3 through 12. Such situations are rare, but if the population being examined includes more than a few thousand members, the problem is bound to come up at least a few times.

It is possible to include a table of standard daily dosages in the computer program in order to correct this, but it is simpler to clean up the data before using them. Divide the quantity dispensed by the days supply, then sort the results in descending order and manually examine the top claims. In general, the human eye can spot problem claims better than a computer program, and the day supply field can be corrected by hand. The problem is rare enough that this approach is practical even when analyzing very large datasets.

Once the final array has been produced indicating which days in the member's history are considered treatment gaps, then it is necessary to decide what patterns of treatment gaps constitute inadequate persistence. A useful overview of this topic can be found in a 2005 study by Sikka and colleagues.8 They reported no standard in the medication persistence literature, with permissible gaps ranging from 15 days to 120 days.

Some studies look only at individual gaps, with a patient considered nonpersistent if any single gap exceeds the permissible number of days. This approach does not allow for the cumulative effect of multiple gaps that are close together in time. For instance, a member may receive a 30-day supply on July 30, then another 30-day supply on September 25. If a 30-day permissible gap is used, then none of the gaps exceeds the...
In some studies of programs designed to improve persistence with chronic medications, the behavior of a member during the pre-study period can be compared with the behavior of the same member during the post-study period, providing an effective control group. But to use this methodology (i.e., the “patient-as-their-own-control” design), the level of persistence for each member in the poststudy period must be independent of the level of persistence for that member during the prestudy period. This is not the case with antidepressants because it is normal for a patient to complete a course of therapy and then discontinue the medication. It is possible to create a control group by deliberately withholding a set of members from the program for that purpose, but this is not generally considered appropriate. The approach used in the Aetna study was to compare prestudy and poststudy populations of all members being treated by physicians who were included in the educational portion of the intervention. The assumption was that physicians contacted during the program stress persistence more often with patients who were newly started on antidepressant medications, shortly after they received educational information. Figure 6 illustrates this assumption. A comparison of patients treated by program physicians before and after intervention showed a modest but statistically significant improvement in persistence with antidepressant medications.

### Conclusions

Ensuring medication persistence throughout a standard course of therapy is critical to the successful management of depression. Prescription claims databases contain the information, such as exact records of prescription refill dates and quantities, necessary to measure these effects. This is necessary for determining the effectiveness of interventions designed to improve persistence with chronic medications.
to determine medication persistence. Treating physicians rarely have access to these data and may not know the intricacies of interpreting it. Properly identifying problem consumption patterns from these data is one of the most valuable services that managed care pharmacists can provide in a disease management program. A visual representation of prescription claims database information can be tailored to help member physicians determine, at a glance, each patient’s medication persistence. Such representations of data are valuable for helping identify problem consumption patterns that require further analysis, such as treatment that is not continuous, low usage, and nonpersistence. However, such data are not recommended for use in a vacuum—that excludes considerations such as therapeutic indication and environment.

DISCLOSURES

This article is based on the proceedings of a symposium held on October 6, 2005, at the Academy of Managed Care Pharmacy’s 2005 Educational Conference in Nashville, Tennessee, which was sponsored by an educational grant from Wyeth. The author did not receive an honorarium from Wyeth for participation in the symposium. He discloses no potential bias or conflict of interest relating to this article.

REFERENCES

Continuing Education

Burden of Illness:
Costs and Consequences of Our Fragmented Mental Health Care System

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1. Posttest form for this program, “Burden of Illness: Costs and Consequences of Our Fragmented Mental Health Care System,” on the AMCP.org Online Learning Center site—to receive CE credit, you must receive a score of at least 70%. You will have 2 opportunities to pass the posttest.
2. Program Evaluation form

Upon successful completion of this program, you will automatically receive your CE statement. Your CE credits will be automatically archived and tracked for you on the AMCP.org Online Learning Center site. All information is kept confidential.

Note: There will be a $10 processing fee for nonmembers. (See payment instructions on site.)

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Posttest Worksheet: Burden of Illness: Costs and Consequences of Our Fragmented Mental Health Care System

1. Which of the following are accurate statements from the WHO Global Burden of Disease study (2001)?
   a. DALY (disability-adjusted life-year) combines measures of mortality and disability.
   b. Depression is the second-ranked disease in overall burden in developed countries.
   c. Behavioral health conditions represent 4 out of the top 5 sources of disability among people aged 15 to 44 years.
   d. All of the above

2. Since the introduction of publicly reported HEDIS depression measures, there has been significant improvement of health plan performance on these measures.
   a. True
   b. False

3. The recent RAND report in the New England Journal of Medicine suggests that, on average, the probability of an individual getting appropriate evidence-based care for their illness in the United States is
   a. 85%.
   b. 60%.
   c. 50%.
   d. 25%.
   e. 10%.

4. The following is not an aim from the Institute of Medicine’s Crossing the Quality Chasm report to improve the health care delivery system: the system should be
   a. safe.
   b. effective.
   c. timely.
   d. inexpensive.
   e. patient-centered.
   f. equitable.
   g. All of the above
5. The conclusions of the Institute of Medicine Committee on Quality of Health in America indicate that the current health care system can be restored if there is more cooperation and effort among all players involved.
   a. True
   b. False

6. According to the Institute of Medicine Committee on Quality of Health in America, future strategies to cure the ills of the current health care system should
   a. include a continuous quality improvement process.
   b. develop bridges between behavioral health and primary care.
   c. eliminate clinical and financial barriers between systems.
   d. look at the “mind” and the “body” as a whole.
   e. All of the above
   f. None of the above

7. Which of the following is not a component of the chronic care model?
   a. Decision support
   b. Clinical information systems
   c. Pay for performance
   d. Practice redesign
   e. Patient activation/self-management support
   f. All of the above are necessary

8. Which aspect of caring for their depressed patients do primary care physicians feel least confident in providing?
   a. Diagnosing depression
   b. Managing treatment with one antidepressant
   c. Managing treatment with two or more antidepressants
   d. Referring patients for specialty care
   e. Describing services offered by specialty mental health care

9. What is the primary difference between patients with depression treated by primary care physicians and those treated by mental health care physicians? Patients with depression treated by primary care physicians
   a. are more willing to attempt antidepressant therapy.
   b. are less willing to attempt antidepressant therapy.
   c. have more-severe depression.
   d. have lesser-severe depression.
   e. are easier to refer for specialty mental care.

10. Physicians having more managed care contracts are generally less able to provide access to timely high-quality specialty mental care than physicians with fewer contracts.
    a. True
    b. False

11. Which of the following is not necessary to successfully incorporate the chronic care model for depression in the primary care setting?
    a. Full organizational commitment
    b. Easily accessible evidence-based guidelines and protocols for depression
    c. Depression registry to track symptoms and treatments received
    d. Specialty training for a depression care manager responsible for leading and coordinating team-based care
    e. Patient responsibility and autonomy in self-management of symptoms
    f. Incorporated community resources and links
    g. All of the above are necessary

12. Which of the following does not reflect the responsibilities of the care manager?
    a. Patient follow-up
    b. Telling patient and family about available resources
    c. Tracking outcomes using the information system
    d. Delegating all activities related to the mental health packet to a mental health specialist
    e. None of these—care managers perform all of the above tasks.

13. The patient's family should not be involved in the diagnostic and treatment phases of the chronic care model used to treat depressed patients.
    a. True
    b. False

14. What roles are pharmacists on the depression team not able to assume in the primary care setting for chronic depression?
    a. Filling and refilling prescriptions
    b. Prescribing medications
    c. Training physicians
    d. Counseling patients
    e. Counseling family

15. What tool(s) and/or criteria is/are used to determine whether patients should enter routine collaborative or mental health specialty care?
    a. Mental health information packet
    b. Mental health registry
    c. Information systems, such as electronic medical record (EMR)
    d. All of the above
    e. None of the above
16. Consideration of the health care spending of family members is important in order to conduct an accurate economic analysis of mental health integration programs for depression care.
   a. True 
   b. False

17. The typical elderly dual eligible is likely to be male and live with his wife or children.
   a. True 
   b. False

18. Effective drug consumption in the dual-eligible population would be unaffected if case management services and dental, podiatric, and vision benefits are reduced or denied.
   a. True 
   b. False

19. What percentage of the dual-eligible population presents with mental or cognitive impairment?
   a. 2% 
   b. 11% 
   c. 23% 
   d. 38% 
   e. 59%

20. The status of dual-eligible patients, whether they are treated as outpatients or have been placed in a nursing facility, has little impact on their ability to pay for medication.
   a. True 
   b. False

21. In the Utah Youth Suicide Study (Moskos et al.), it was determined that the main barrier to mental health treatment is
   a. lack of insurance coverage. 
   b. transportation. 
   c. stigma. 
   d. inability to find services in the community.

22. The main barrier(s) for patients to obtain medication treatment is/are
   a. formularies. 
   b. lack of information about the medication, side effects, and compliance. 
   c. stigma associated with taking medication for mental illness. 
   d. All of the above

23. Mental health care should be patient- (or consumer-) driven.
   a. True 
   b. False

24. Mental health integration benefits the patient because
   a. there is already a comfort level with the primary care physician. 
   b. there is a “safety-net” in place for the patient. 
   c. primary care visits are covered by insurance. 
   d. All of the above

25. Which of the following is the last step in implementing a pharmacy management program?
   a. Measuring the baseline 
   b. Designing a program 
   c. Recruiting corporate management buy-in 
   d. Measuring results 
   e. Selecting members or physicians

26. Physicians and pharmacists can retrieve all of the information necessary to determine medication persistence of patients from prescription claims databases.
   a. True 
   b. False

27. When using computer programming resources to convert pharmacy claims data into useful graphical representations of persistence gaps, the following approach will yield the only truly accurate picture:
   a. A binary Y-N approach, in which a Y indicates “Yes, the member had access to medication on the day indicated” or “No, the member did not have access to medication on that day”
   b. A 2-dimensional array approach, with each row of the array representing one drug and strength
   c. Use of a consumption algorithm that considers the cumulative effect of multiple persistence gaps in a single patient 
   d. All of the above 
   e. None of the above

28. What information about baseline measurements might change the interpretation about the success or failure of a pharmacy management program?
   a. There were formulary changes over the period of observation. 
   b. The observation period was between April and October 2004. 
   c. A merger increased the population in one geographical area. 
   d. All of the above 
   e. None of the above
29. In which of the following circumstances would you consider the most recent time period to define patient compliance rather than the period beginning on the day that treatment is initiated and ending when a gap indicates that the patient is no longer taking medication in a persistent manner?
   a. When measuring program effectiveness 
   b. When measuring the population baseline 
   c. When reporting individual patient histories to treating physicians 
   d. All of the above 
   e. None of the above

30. Pharmacy claims data of patients taking depression medication accurately identifies the population of patients who should be selected in a pharmacy management program for depression.
   a. True  
   b. False 

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