Robert Wood Johnson Foundation

THE SYNTHESIS PROJECT
NEW INSIGHTS FROM RESEARCH RESULTS

ISSN 2155-3718

POLICY BRIEF NO. 21 | FEBRUARY 2011
Also see companion report available at *www.policysynthesis.org*

Mental disorders and medical comorbidity

By Sarah Goodell, M.A.[1]
Benjamin G. Druss, M.D., M.P.H.[2] and
Elizabeth Reisinger Walker, M.A.T., M.P.H.[2]
based on a research synthesis
by Druss and Reisinger Walker

[1] The Synthesis Project
[2] Emery University

SUMMARY OF KEY FINDINGS

> **Comorbidity is the rule rather than the exception.** When mental and medical conditions co-occur, the combination is associated with elevated symptom burden, functional impairment, decreased length and quality of life, and increased costs.

> **The pathways causing comorbidity of mental and medical disorders are complex and bidirectional.** Medical disorders may lead to mental ones, mental conditions may place a person at risk for medical disorders, and mental and medical disorders may share common risk factors.

> **Models that integrate care to treat people with mental health and medical comorbidities have proven effective.** Despite their effectiveness, these models are not in widespread use.

Why is this issue important to policy-makers?

In the wake of national health care reform, an unprecedented number of people will become newly insured. Given the high rates of uninsurance among people with mental illness and the high rates of comorbidity between mental and medical conditions, policy-makers will be confronted by how best to serve this newly insured population.

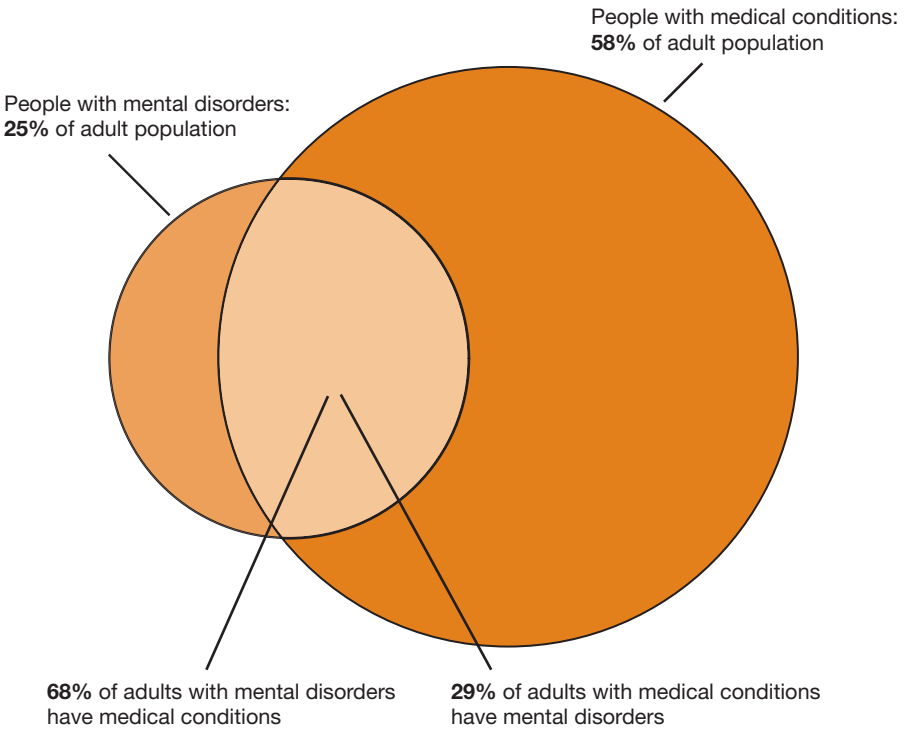
Health reform has increased attention on ways to improve quality and reduce the costs of health care. Expenditures and gaps in care delivery are not evenly distributed across the population, however. To improve quality and reduce costs, policy-makers must focus on particular subgroups most at-risk for high cost and poor quality. Persons with mental health and medical comorbidities represent just such a population.

For the purposes of this brief, comorbidity is defined as the co-occurrence of mental and physical disorders in the same person, regardless of the chronological order in which they occurred or the causal pathway linking them (Reference 1).

What is the prevalence of comorbidity between mental and medical conditions?

Comorbidity between mental and medical conditions is the rule rather than the exception. In the 2003 National Comorbidity Survey Replication (NCS-R), more than 68% of adults with a mental disorder had at least one medical condition, and 29% of those with a medical disorder had a comorbid mental health condition (Figure 1) (Reference 2).

Figure 1: Percentage of adults with mental disorders and/or medical conditions, 2001–2003



Source: Adapted from the National Comorbidity Survey Replication, 2001–2003 (Reference 2)

Having a mental disorder is a risk factor for developing a chronic condition,

COMORBIDITIES AND TREATMENT

Many of the most common treatments for diseases may actually worsen the comorbid condition. Many psychotropic medications can cause weight gain, a risk factor for type 2 diabetes (Reference 3). At the same time, many treatments for common medical conditions have psychological side effects that may exacerbate or complicate underlying psychiatric conditions (Reference 4).

Many chronic medical conditions require patients to maintain a self-care regimen in order to manage symptoms and prevent further disease progression, which may be hampered by comorbid mental conditions. For example:

> Depression may decrease the motivation and energy needed to perform self-management behaviors and may adversely impact interpersonal relationships, including collaboration with physicians (Reference 5).

> The odds of noncompliance with medical treatment regimens are three times greater for depressed patients compared with non-depressed patients (Reference 6).

> People with severe mental illness often exhibit poor adherence to both antipsychotic medications and medications for medical conditions (Reference 7).

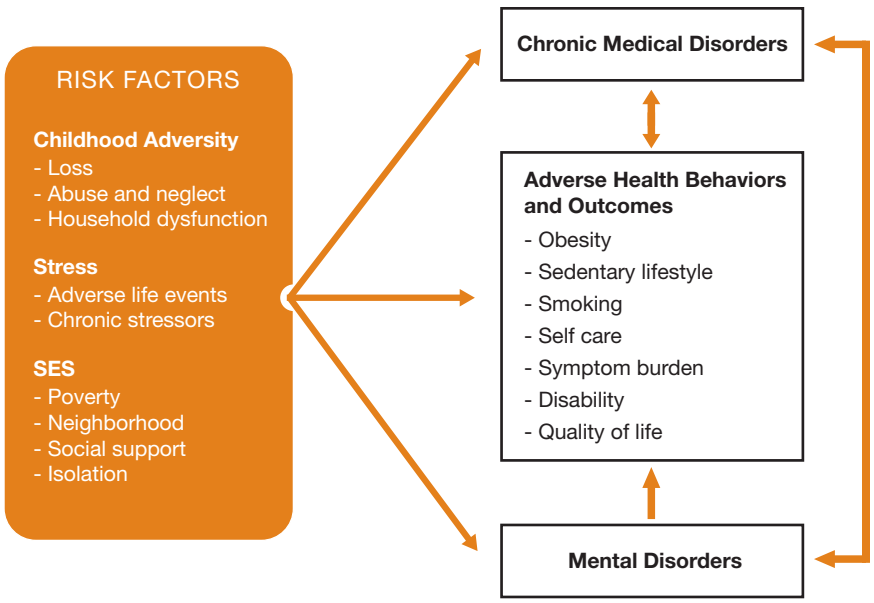
Why is the rate of comorbidity so high?

An important driver of the high rate of comorbidity is the high prevalence of both mental disorders and chronic conditions. Approximately 25 percent of American adults suffer from a diagnosable mental disorder in any given year and close to half of the adult population have one or more chronic medical conditions (Reference 8).

Having a mental health disorder is a risk factor for developing a chronic condition and vice versa. In the National Health Interview Survey, the likelihood of depression increased with each additional comorbid chronic medical disorder (Reference 9). Similarly, people with schizophrenia and bipolar disorder are up to three times more likely to have three or more chronic conditions compared with people without these mental disorders (Reference 10).

The pathways causing comorbidity of mental and medical disorders are complex and bidirectional (Figure 2). Medical disorders may lead to mental disorders, mental conditions may place a person at risk for certain medical disorders, and mental and medical disorders may share common risk factors. For instance, medical conditions that are accompanied by a high symptom burden, such as migraine headaches or back pain, can lead to depression (Reference 11). At the same time, major depression is a risk factor for developing medical conditions, such as cardiovascular disease, that are characterized by pain or inflammation (Reference 12).

Figure 2: Model of interaction between mental and medical disorders



Source: Modified from Katon (Reference 5)

and having a chronic condition is a risk factor for developing a mental disorder.

Exposure to early trauma, chronic stress, socioeconomic factors, and adverse health behaviors are all associated with both mental and medical disorders (Figure 2). These factors are responsible for much of the high rates of comorbidity, burden of illness, and premature death associated with chronic illness (Reference 13).

What is the cost and mortality burden of comorbidities?

When mental and medical conditions co-occur, the combination is associated with elevated symptom burden, functional impairment, decreased length and quality of life, and increased costs (Reference 17). The impact of having comorbid conditions is at least additive and at times may be synergistic, with the cumulative burden greater than the sum of the burden of individual conditions.

Comorbid mental and medical conditions are associated with substantial costs. Melek and Norris used a national claims database to look at 10 common chronic conditions. The presence of comorbid depression or anxiety significantly increased total health care costs (Reference 18). Perhaps surprisingly, the costs attributable to mental health services account for only about 16% of the increase.

Mental disorders are associated with roughly a twofold-to-fourfold elevated risk of premature mortality (Reference 19). From a population perspective, the bulk of these deaths are due to "natural" causes such as cardiovascular disease rather than accidents and suicides.

ADDRESSING COMORBIDITY

The most effective treatment for persons with comorbid mental and medical conditions involves a "collaborative care" approach that uses a multidisciplinary team to screen and track mental conditions in a primary care setting (Reference 14).

Two key components of this model are the use of care managers and the use of "stepped care" approaches to illness management. Care managers provide patient education, aide patients with treatment decision-making, monitor symptoms, provide follow-up care, and communicate with the team. Stepped care involves tracking and monitoring medical and mental outcomes, and adjusting services or moving to a higher level of intensity as needed.

Collaborative care approaches have been found to be highly cost-effective from a societal perspective (Reference 15). Cost-effectiveness indicates a good value for society, but does not necessarily mean that cost-effective programs will save money, or result in a "cost-offset." However, more recent research has suggested that cost savings may be achievable over the long term, particularly among the costliest and most complex patients such as those with comorbid diabetes and depression (Reference 16).

Policy Implications

Given the high rates of uninsurance and underinsurance among people with mental disorders, the expansion of health insurance under the Patient Protection and Affordable Care Act has the potential to benefit persons with comorbid mental and medical disorders. Many of these newly insured patients are likely to enroll in Medicaid. This gives policy-makers the opportunity to address mental and medical comorbidities in a manner that improves patient care, reduces system fragmentation and disseminates evidence-based approaches to treating comorbid conditions in routine care settings.

Insurance coverage and new financing models

> A benefits package that includes essential mental health services would help ensure that expansion of health coverage translates into improved access to services.

> Membership in newly designed models such as Accountable Care Organizations could provide the opportunity for mental health/substance use treatment providers to integrate vertically with other components of the health care system.

Care delivery redesign

> Medical homes will need the capacity to provide mental health services or coordinate with mental health providers.

> Allowing mental health and substance abuse systems to be part of the newly formed health information exchanges while preserving appropriate privacy of data will improve communication.

Prevention and promotion

> Primary prevention efforts will be needed to address common risk factors for comorbid conditions, such as adverse health behaviors and substance use, in their social and environmental contexts.

> Secondary prevention could include screening for common mental disorders in primary care settings, or screening for common medical health conditions in specialty medical settings.

THE SYNTHESIS PROJECT (Synthesis) is an initiative of the Robert Wood Johnson Foundation to produce relevant, concise, and thought-provoking briefs and reports on today's important health policy issues.

PROJECT CONTACTS

David C. Colby, Ph.D., the Robert Wood Johnson Foundation
Brian C. Quinn, Ph.D., the Robert Wood Johnson Foundation
Sarah Goodell, M.A., Synthesis Project

SYNTHESIS ADVISORY GROUP

Linda T. Bilheimer, Ph.D., National Center for Health Statistics
Jon B. Christianson, Ph.D., University of Minnesota
Paul B. Ginsburg, Ph.D., Center for Studying Health System Change
Jack Hoadley, Ph.D., Georgetown University Health Policy Institute
Haiden A. Huskamp, Ph.D., Harvard Medical School
Julia A. James, Independent Consultant
Judith D. Moore, National Health Policy Forum
William J. Scanlon, Ph.D., National Health Policy Forum
Michael S. Sparer, Ph.D., Columbia University
Joseph W. Thompson, M.D., M.P.H., Arkansas Center for Health Improvement
Claudia H. Williams, U.S. Department of Health and Human Services

REFERENCES

1 Feinstein A. "Pre-therapeutic classification of co-morbidity in chronic disease." *Journal of Chronic Disease. vol. 23, no. 7,* 1970; Valderas JM, Starfield B, Sibbald B, Salisbury C, Roland M. "Defining comorbidity: Implications for understanding health and health services." *Annals of Family Medicine, vol. 7, no. 4, 2009*; van den Akker M, Buntinx F, Metsemakers JFM, Roos S, Knottnerus JA. "Multimorbidity in general practice: Prevalence, incidence, and determinants of co-occurring chronic and recurrent diseases." *Journal of Clinical Epidemiology,* vol. 51, no. 5, 1998.

2 Alegria M, Jackson JS, Kessler RC, Takeuchi D. *National Comorbidity Survey Replication (NCS-R), 2001–2003.* Ann Arbor: Inter-university Consortium for Political and Social Research, 2003.

3 Muench J, Hamer AM. "Adverse effects of antipsychotic medications." *American Family Physician,* vol. 81, no. 5, 2010.

4 Patten SB, Barbui C. "Drug-induced depression: A systematic review to inform clinical practice." *Psychotherapy and Psychosomatics,* vol. 73, no. 4, 2004.

5 Katon WJ. "Clinical and health services relationships between major depression, depressive symptoms, and general medical illness." *Biological Psychiatry*, vol. 53, no. 3, 2003.

6 DiMatteo MR, Lepper HS, Croghan TW. "Depression is a risk factor for noncompliance with medical treatment: Meta-analysis of the effects of anxiety and depression on patient adherence." *Archives of Internal Medicine,* vol. 160, no. 14, 2000.

7 Piette JD, Heisler M, Ganoczy D, McCarthy JF, Valenstein M. "Differential medication adherence among patients with schizophrenia and comorbid diabetes and hypertension." *Psychiatric Services,* vol. 58, no. 2, 2007.

8 Kessler RC, Demler O, Frank RG, et al. "Prevalence and treatment of mental disorders, 1990 to 2003." *New England Journal of Medicine,* vol. 352, no. 24, 2005. Hoffman C, Rice D, Sung HY. "Persons with chronic conditions. Their prevalence and costs." *Journal of the American Medical Association,* vol. 276, no. 18, 1996.

9 Egede LE. "Major depression in individuals with chronic medical disorders: prevalence, correlates and association with health resource utilization, lost productivity and functional disability." *General Hospital Psychiatry,* vol. 29, no. 5, 2007,

10 Carney CP, Jones L, Woolson RF. "Medical comorbidity in women and men with schizophrenia: A population-based controlled study." *Journal of General Internal Medicine,* vol. 21, no. 11, 2006; Carney CP, Jones LE. "Medical comorbidity in women and men with bipolar disorders: A population-based controlled study." *Psychosomatic Medicine,* vol. 68, no. 5, 2006.

11 Patten SB. "Long-term medical conditions and major depression in a Canadian population study at waves 1 and 2." *Journal of Affective Disorders,* vol. 63, no. 1–3, 2001.

12 Patten SB, Williams JVA, Lavorato DH, Modgill G, Jette N, Eliasziw M. "Major depression as a risk factor for chronic disease incidence: Longitudinal analyses in a general population cohort." *General Hospital Psychiatry.* vol. 30, no. 5, 2008.

13 Felitti VJ, Anda RF, Nordenberg D, et al. "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults—The Adverse Childhood Experiences (ACE) study." *American Journal of Preventive Medicine,* vol. 14, no. 4, 1998; Lantz PM, House JS, Lepkowski JM, Williams DR, Mero RP, Chen JM. "Socioeconomic factors, health behaviors, and mortality: Results from a nationally representative prospective study of US adults." *Journal of the American Medical Association,* vol. 279, no. 21, 1998; Centers for Disease Control and Prevention. Chronic diseases and health promotion. 2010; *www.cdc.gov/chronicdisease/overview/.* Accessed August 9, 2010.

14 Gilbody S, Whitty P, Grimshaw J, Thomas R. "Educational and organizational interventions to improve the management of depression in primary care: A systematic review." *Journal of the American Medical Association,* vol. 289, no. 23, 2003; Thielke S, Vannoy S, Unutzer J. "Integrating mental health and primary care." *Primary Care,* vol. 34, no. 3, 2007; Butler M, Kane R, McAlpine D, et al. *Integration of Mental Health/Substance Abuse and Primary Care.* Minneapolis: Minnesota Evidence-based Practice Center, 2009; Bower P, Gilbody S, Richards D, Fletcher J, Sutton A. "Collaborative care for depression in primary care—making sense of a complex intervention: Systematic review and meta-regression." *British Journal of Psychiatry,* vol. 189, no. 6, 2006.

15 Schoenbaum M, Unutzer J, Sherbourne C, et al. "Cost-effectiveness of practice-initiated quality improvement for depression: results of a randomized controlled trial." *Journal of the American Medical Association,* vol. 286, no. 11, 2001; and Katon WJ, Schoenbaum M, Fan MY, et al. "Cost-effectiveness of improving primary care treatment of late-life depression." *Archives of General Psychiatry,* vol. 62, no. 12, 2005.

16 Unutzer J, Katon WJ, Fan MY, et al. "Long-term cost effects of collaborative care for late-life depression." *American Journal of Managed Care,* vol. 14, no. 2, 2008; Katon WJ, Russo JE, Von Korff M, Lin EH, Ludman E, Ciechanowski PS. "Long-term effects on medical costs of improving depression outcomes in patients with depression and diabetes." *Diabetes Care,* vol. 31, no. 6, 2008.

17 Katon WJ, 2003; Egede LE. "Major Depression in Individuals with Chronic Medical Disorders: Prevalence, Correlates and Association with Health Resource Utilization, Lost Productivity and Functional Disability." *General Hospital Psychiatry,* vol. 29, no. 5, 2007; Stein MB, Cox BJ, Afifi TO, Belik SL, Sareen J. "Does co-morbid depressive illness magnify the impact of chronic physical illness? A population-based perspective." vol. 36, no. 5, 2006.

18 Melek S, Norris D. *Chronic Conditions and Comorbid Psychological Disorders.* Seattle: Milliman, 2008.

19 Eaton WW, Martins SS, Nestadt G, Bienvenu OJ, Clarke D, Alexandre P. "The burden of mental disorders." *Epidemiological Review,* vol. 30, no. 1, 2008; Felker B, Yazell JJ, Short D. "Mortality and medical comorbidity among psychiatric patients: A review." *Psychiatric Services,* vol. 47, no. 12, 1996; Colton CW, Manderscheid RW. "Congruencies in increased mortality rates, years of potential life lost, and causes of death among public mental health clients in eight states." *Preventing Chronic Disease,* vol. 3, no. 2, 2006.

Robert Wood Johnson Foundation

THE SYNTHESIS PROJECT

NEW INSIGHTS FROM RESEARCH RESULTS

POLICY BRIEF NO. 21
FEBRUARY 2011

The Synthesis Project
The Robert Wood Johnson Foundation
Route 1 & College Road East
P.O. Box 2316
Princeton, NJ 08543-2316
E-Mail: synthesisproject@rwjfmail.org
Phone: 888-719-1909