

## Mental Health Research Findings

The mission of AHRQ is to improve the quality, safety, efficiency, and effectiveness of health care by:

- Using evidence to improve health care.
- Improving health care outcomes through research.
- Transforming research into practice.

### Introduction

About one in four adults in the United States suffers from a mental disorder in a given year, with about 6 percent suffering from a serious mental illness. These problems typically take a toll on overall health. For example, patients diagnosed with a serious mental disorder die 25 years earlier than the general population. Related behavioral issues such as substance abuse or domestic violence also remain persistent problems. For example, nearly one-third of U.S. adults suffer from some type of mental illness or substance abuse. In addition, an estimated 1.3 million women are physically abused by their intimate partners each year and about 1 million abused children are identified each year. Care costs for these problems are significant. Mental disorders were one of the five most costly conditions in the United States in 2006, with care expenditures rising from \$35.2 billion in 1996 to 57.5 billion in 2006. Treatment settings are also changing. For example, a growing

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number of children and adults are being diagnosed and treated for mental illness by primary care clinicians. Also, use of telepsychiatry and new medications are extending the reach and type of treatment available.



Agency for Healthcare Research and Quality

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The Agency for Healthcare Research and Quality (AHRQ) supports a diverse array of mental health research projects that examine these and other issues. Topics of recently funded projects range from mental comorbidity and chronic illness, feedback systems to improve evidence-based therapies for children with mental disorders, and the impact of atypical antipsychotic use on elderly health care use to electronic personal health records for mental health consumers and assessment and intervention for elder self-neglect.

The Agency continues to expand funding for research to improve mental health care through health information technology (IT) and primary care delivery. AHRQ has also developed a new focus on the complex patient – the patient with multiple chronic illnesses, who also often battles substance abuse, depression, and other mental health problems.

This program brief presents findings from a cross-section of AHRQ-supported extramural and intramural research projects on mental health, which were published between 2007 and 2009. An asterisk at the end of a summary indicates that reprints of an intramural study or copies of other publications are available from AHRQ. See the last page of this program brief to find out how to get more detailed information about AHRQ's research programs and funding opportunities.

## Abuse (Intimate Partner and Family Violence)

An estimated 1.3 million women are physically abused by their intimate partners each year. Also, about one in every four women seeking care in emergency rooms has injuries resulting from domestic violence. More than one

in four men have also been victims of intimate partner violence during their lifetime. About 1 million abused children are identified in the U.S. each year, with 1,500 dying of abuse and neglect each year. What's more, an estimated 551,000 older adults are victims of family abuse or neglect. The physical and psychological fallout from intimate partner and family violence are reflected in the high use of health care services by the abused, as well as high rates of depression, substance abuse, suicide, and poor pregnancy outcomes among women, and behavior problems, developmental delay, and school failure among abused children.

- *Domestic violence victims have higher health care use and costs than other women, even long after the abuse has ended.*

Women who suffer from intimate partner violence (IPV) typically have more headaches, chronic pain, gastrointestinal and gynecologic problems, depression and anxiety, and injuries than other women. They also have significantly higher health care use and costs than other women. Forty-six percent of 3,333 women aged 18 to 64 years enrolled in a large HMO in Washington State and northern Idaho reported IPV in their lifetime. Although health care use decreased over time after the IPV stopped, it was still 20 percent higher 5 years after the abuse ceased compared with women who had never been abused. After adjusting for several factors, use of health care by women with IPV was about 50 percent higher than women with no history of IPV for emergency department visits, twofold higher for mental health visits, and sixfold higher for use of alcohol or drug services. Abused women also had 14 to 21 percent more primary and specialty care visits and pharmacy use than women

with no history of IPV. Adjusted annual total health care costs were 19 percent higher in women with a history of IPV (amounting to \$439 annually) compared with women without IPV. Rivara, Anderson, Fishman, et al., *American Journal of Preventive Medicine* 32(2):89-96, 2007 (AHRQ grant HS10909).

- *Women who suffer abuse use mental health care services more than women who have never been abused, regardless of when the abuse occurred.*

Researchers surveyed 3,333 women aged 18 to 64 in the Pacific Northwest and found that mental health service use was highest when the physical or nonphysical (verbal threats or controlling behavior) abuse was ongoing. Whether women suffered abuse recently (within 5 years) or 5 years ago or longer, they still accessed mental health services at higher rates than women who were never abused. Compared with women who never experienced abuse, women who were physically abused used more emergency, outpatient, pharmacy, and specialty services (perhaps for injuries resulting from the abuse). Women suffering ongoing physical and nonphysical abuse had total annual health care costs that were 42 percent and 33 percent higher, respectively, than women who never suffered abuse. Bonomi, Anderson, Rivara, and Thompson, "Health care utilization and costs associated with physical and nonphysical-only intimate partner violence," *Health Services Research* 44(3), pp. 1-16, 2009 (AHRQ grant HS10909).

- *Women who were sexually or physically abused are more likely to seek medical care and legal assistance than women who report only psychological abuse.*

The duration and severity of domestic abuse that women endure serve as a

predictor of whether they will seek medical and legal help. Women who were psychologically abused were more inclined to obtain legal than medical services. Sexually abused women were 1.3 times as likely to seek medical care as women who were psychologically abused. The longer the abuse continued, the more likely the woman was to obtain legal help. For example, compared with women who were abused for 0 to 2 years, women who were physically abused for 3 to 10 years were 1.4 times more likely to seek legal services. Those who suffered physical abuse for more than 10 years were 1.9 times as likely to get legal help. The findings were based on telephone interviews with 1,509 women from one health plan, who said they had experienced physical, sexual, or psychological abuse since reaching age 18. Duterte, Bonomi, Kernic, et al., "Correlates of medical and legal help seeking among women reporting intimate partner violence," *Journal of Women's Health* 17(1):85-88, 2008 (AHRQ Grant HS10909).

- *Health care costs are significantly greater for women who were physically or sexually abused as children than for women who left childhood unscathed.*

Health care costs for women with a history of physical and sexual abuse averaged \$3,203 annually, while costs for women who were not abused averaged \$2,413, a nearly \$800 difference. Women who endured both types of abuse also used more mental health, hospital outpatient, emergency department, primary care, specialty care, and pharmacy services than the nonabused group. Thirty four percent of women said they were abused as children. These women were more likely to have smoked, used recreational drugs in the past year, shown symptoms of depression, and have a higher body

mass index than women who had not suffered abuse as children. The researchers interviewed 3,333 women by telephone who received care from one health plan over a 10-year period (1992-2002). Bonomi, Anderson, Rivara, et al., "Health care utilization and costs associated with childhood abuse," *Journal of General Internal Medicine* 23(3):249-299, 2008 (AHRQ grant HS10909)

- *Children of women who are or have been abused by their partners seek more mental and other health care than children of nonabused mothers.*

Health care use and costs were greater for children of mothers with a history of IPV and were significantly greater for mental health services, primary care visits and costs, and laboratory costs. Even after IPV was reported to have ended, children of abused mothers were three times more likely to use mental health services and had 16 percent higher primary care costs than did children of nonabused mothers, although their overall costs were no higher. Even children whose mothers' abuse ended before the children were born used significantly more mental health, primary care, specialty care, and pharmacy services and had 24 percent higher care costs than children whose mothers had not been abused.

Researchers compared health care use and costs of 760 children of mothers with no history of IPV with 631 children of mothers with a history of IPV over an 11-year period (1992-2003). Rivara, Anderson, Fishman, et al., "Intimate partner violence and health care costs and utilization for children living in the home," *Pediatrics* 120:1270-1277, 2007 (AHRQ grant HS10909).

- *More than 200 abused children under age 5 died in U.S. hospitals in 2005.*

Of 6,700 children hospitalized for physical abuse or neglect in 2005, more than 200 died and all fatalities were under age 5, according to a new report from AHRQ. Children less than 5 years old comprised 80 percent of all those under 18 years of age who were admitted that year for abuse or neglect. Hospital care for children who suffered physical, sexual, emotional abuse, or neglect cost almost \$100 million. The average stay for an abused and/or neglected child cost \$14,800—75 percent more than the average pediatric admission. More than one-third of children hospitalized for physical abuse had head injuries, 26 percent had bruises, 21 percent had bleeding behind the eye, 20 percent had epileptic convulsions, and 18 percent had broken legs or feet. Children from the poorest communities accounted for nearly 36 percent of hospitalizations for abuse or neglect, regardless of age. Medicaid was billed for 71 percent of these stays. For more information, see *Hospital Stays Related to Child Maltreatment, 2005*, HCUP Statistical Brief #49 (<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb49.jsp>).

- *Intimate partner abuse has no age limit.*

More than one-fourth of 70 elderly women surveyed, who were enrolled in a West Coast care delivery system, reported being physically or psychologically abused by intimate partners during their adult life. Half the women were 65 to 74 years of age and half were age 75 and older. About 18 percent of the women said that they suffered sexual abuse or physical abuse, and 22 percent were victims of nonphysical abuse, including being threatened, called names, or having their behavior controlled by an intimate



**Women have suffered from domestic abuse for centuries as illustrated by this 16th century woodcut from the Solerno Book of Health.**

partner. The duration of abuse ranged from 3 years for forced sexual contact to 10 years of being put down, called names, or having their behavior controlled. About 60 percent of the victims of physical violence and 71 percent of the women who were subjected to psychological abuse and threats rated the abuse as severe. Only 3 percent of the women said that they had been asked by a health care provider about physical or sexual violence by an intimate partner since age 18. Bonomi, Anderson, Reid, et al., "Intimate partner violence in older women," *Gerontologist* 47(1):34-41, 2007 (AHRQ grant HS10909).

- *Locating homeless services in dilapidated, crime-ridden areas may contribute to the violence against homeless women.*

Homeless women living near skid row in Los Angeles (LA) were 1.5 times more likely to be physically assaulted than homeless women living in other areas of LA. Safer locations for shelters and other assistance programs could reduce violence against homeless women. However, surrounding higher income communities have opposed efforts to relocate programs outside of the skid row district of LA, note the researchers. They interviewed 974 homeless women visiting 64 shelters and 38 meal programs serving homeless women in 8 regions of LA County. For every one standard deviation increase in proximity to skid row, there was an estimated 48 percent increase in a woman's chance of being assaulted. Heslin, Robinson, Baker, and Gelberg, "Community characteristics and violence against homeless women in Los Angeles County," *Journal of Health Care for the Poor and Underserved* 18: 203-218, 2007 (AHRQ grants HS08323 and HS14022).

- *Nearly half of pregnant Latina women report intimate partner abuse.*

Nearly 44 percent of 210 pregnant Latina women studied for 1 year reported intimate partner abuse. This is a problem, because women who are abused while they are pregnant are more likely to attempt homicide, have unplanned pregnancies, forego prenatal care until the second trimester, and suffer complications during birth. The researchers assessed the women for IPV, strength, adverse social behavior, post-traumatic stress disorder (PTSD), and depression. Social support was lower for the 92 abused women, who also reported higher levels of social undermining by their partner and stress. As expected, women who were exposed to abuse were more likely to be depressed (41.3 percent) or have PTSD (16.3 percent) than their nonabused counterparts (18.6 and 7.6 percent, respectively). Rodriguez, Heilemann, Fielder et al., "Intimate partner violence, depression, and PTSD among pregnant Latina women," *Annals of Family Medicine* 6(1):44-52, 2008 (AHRQ grant HS11104).

- *Married women who are abused are more at risk for delivering babies with low birth weights than women who never experience violence.*

A study in Boston found that women who were exposed to violence either before or during their pregnancies were not at increased risk of delivering early or having babies born with low birth weights compared with women who never experienced violence. However, married women who suffered violence were more at risk for delivering babies with low birth weights than women who never experienced violence. Determining the relationship between a mother's experience with violence and its effect on her pregnancy may provide

the medical community with strategies to prevent poor pregnancy outcomes, suggest the Massachusetts researchers. They used data from 1,555 women who enrolled in Boston's Healthy Baby Program, which provides services to pregnant women living in areas with high rates of infant deaths. Fried, Cabral, Amaro, and Aschengrau, "Lifetime and during pregnancy experience of violence and the risk of low birth weight and preterm birth," *Journal of Midwifery and Women's Health* 53(6):522-528, 2008 (AHRQ grant HS 08008).

- *More than in one in four men have been victims of intimate partner violence during their lifetime.*

More than one in four men (29 percent) have been victims of intimate partner violence (IPV) during their lifetime, 10 percent in the past 5 years, and nearly 5 percent in the past year. Men aged 18 to 55 were twice as likely to be recently abused than men aged 55 and older (14.2 vs. 5.3), even though overall rates of physical (ranging from hitting, slapping, and shoving to choking or worse) and nonphysical IPV (threats, anger, and or controlling behavior) were similar. Nearly one-third (32 percent) of men reported mildly violent IPV, and 39 percent reported moderately or extremely violent IPV. Compared with men who never suffered IPV, older men who had experienced IPV suffered from nearly three times more depressive symptoms and had low mental health scores on a standard scale. These findings were based on interviews with 420 English speaking adult men enrolled in a large health care system and surveys that assessed types of IPV, overall health, and mental health. Reid, Bonomi, Rivara, et al., "Intimate partner violence among men: Prevalence, chronicity, and health effects," *American*

*Journal of Preventive Medicine* 34 (6):478-485, 2008 (AHRQ grant HS10909).

## Access to/Cost of Care

Access to mental health care is an ongoing problem for people in rural/frontier areas of the country as well as many other groups. For example, 4 percent of young adults reported foregoing mental health care in the past year, despite self-reported mental health needs. Commonly cited reasons ranged from inability to pay, belief that the problem would go away, and lack of time. Cost of mental health care is also a burden. For example, individuals nationwide spent an average of 10 percent of their family's annual income out of pocket for mental health/substance abuse treatment. Also, mental disorders were one of the five most costly conditions in the United States in 2006, with expenditures at \$57.5 billion.

- *Mental disorders were one of the five most costly conditions for children in 2006.*

The five most costly children's conditions in 2006 were mental disorders, asthma, trauma-related disorders (fractures and other injuries), acute bronchitis, and infectious diseases, according to the latest data from AHRQ. Treating mental disorders in children, such as depression, cost the most at \$8.9 billion compared with \$8 billion for asthma and \$6.1 billion for trauma-related disorders. Mean expenditures per child with expenses were highest for mental disorders at \$1,931. Medicaid paid for more than one-third of the expenditures for mental disorders (35.2 percent), with private insurance paying the largest percentage of expenditures. Out-of-pocket payments were highest for mental disorders at 21.3 percent. These

data are taken from the Medical Expenditure Panel Survey (MEPS), a detailed source of information on U.S. health services use, cost, and sources of payment. For more information, see MEPS Statistical Brief #242, *The Five Most Costly Children's Conditions, 2006: Estimates for the U.S. Civilian Noninstitutionalized Children, Ages 0 to 17*, at [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st242/stat242.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st242/stat242.pdf).

- *Mental disorders led the list of the five most costly conditions overall in 2006.*

Mental disorders, heart conditions, cancer, trauma-related disorders, and asthma ranked highest in terms of direct medical spending in 1996 and 2006, according to the latest data from AHRQ. The number of people accounting for expenses for mental disorders nearly doubled from 19.3 million to 36.2 million during that period. Of the five conditions, out-of-pocket payments were highest for the treatment of mental disorders in both 1996 and 2006 (23.1 and 25 percent, respectively). These data are taken from the Medical Expenditure Panel Survey (MEPS), a detailed source of information on U.S. health services use, cost, and sources of payment. For more information, see MEPS Statistical Brief #248, *The Five Most Costly Conditions, 1996 and 2006: Estimates for the U.S. Civilian Noninstitutionalized Population*, at [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st248/stat248.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st248/stat248.pdf).

- *People with psychotic disorders and bipolar disorder are 45 percent and 26 percent less likely, respectively, to have a primary care doctor than those without mental disorders.*

Researchers compared access and barriers to medical care among 156,475 adults reporting psychotic and mood disorders or no mental disorders, who

completed the National Health Interview Survey (NHIS) and NHIS-Disability Component for 1994 and 1995. People with psychotic disorders, bipolar disorder, or major depressive disorder had 2.5 to 7 times greater odds of any barriers to care, ranging from delaying medical care because of costs to being unable to get needed medical care or a needed prescription medication. However, those with major depression were as likely to report having a regular source of care as those who did not report psychiatric disorders. Bradford, Kim, Braxton, and others, "Access to medical care among persons with psychotic and major affective disorders," *Psychiatric Services* 59(8), pp. 847-852, 2008 (AHRQ grant HS13353).

- *Young adults' mental health problems are compounded by the number of barriers they face when accessing medical care.*

Four percent of young adults reported foregoing mental health care in the past year, despite self-reported mental health needs. Commonly cited reasons ranged from inability to pay, belief that the problem would go away, and lack of time. Among individuals suffering from depressive symptoms, young adults reported significantly lower rates of counseling use than adolescents. Female gender, high maternal education, school attendance, and receipt of routine physical exams were significantly predictive of counseling use among young adults. Young black adults were significantly less likely to receive counseling than their white counterparts. These findings were based on analysis of data from a sample of 10,817 participants in the National Longitudinal Study of Adolescent Health in 1995 and follow-up data 7 years later. Yu, Adams, Burns, et al., "Use of mental health counseling as

adolescents become young adults," *Journal of Adolescent Health* 43:268-276, 2008 (AHRQ grant HS00086).

- *A quality improvement (QI) program that improves access to psychotherapy (QI-therapy) and antidepressant medication (QI-meds) is cost-effective for managing depression in primary care patients.*

The researchers examined the cost effectiveness of managing care of 746 primary care patients with 12-month depressive disorder and 502 patients with current depressive symptoms but no disorder (sub-threshold depression). The patients were randomly assigned to enhanced usual care or to QI-Meds or QI-Therapy for 6 to 12 months.

The cost of the QI program was \$2,028 per quality-adjusted life year (QALY) for those with sub-threshold depression and \$53,716 per QALY for those with depressive disorder. This is similar to the cost effectiveness of many widely used medical therapies. The researchers calculated that the costs of the intervention per se - as distinct from intervention effects on use of services and medication - were \$86 per patient in the QI-Meds group and \$79 per patient in the QI-Therapy group. Wells, Schoenbaum, Duan, et al., "Cost effectiveness of quality improvement programs for patients with sub-threshold depression or depressive disorder," *Psychiatric Services* 58(10):1269-1278, 2007 (AHRQ grant HS08349).

- *Southerners bear a higher financial burden for mental health/substance abuse treatment.*

About 11 percent of people using outpatient mental health and substance abuse (MH/SA) treatment in the South used more than 5 percent of their family's annual income to cover their out-of-pocket treatment costs from

2001 to 2005. Southerners paid the highest percentage of treatment costs out of their own pockets because they were most likely to use prescription medications for their treatment and they paid the greatest share (39 percent) of the costs of these medications. For other regions of the country, between 8 and 10 percent of MH/SA treatment recipients spent more than 5 percent of their family's annual income, and 10 percent did nationwide. Patient out-of-pocket costs included fees for psychiatrists, psychologists, social workers, and other specialty providers; MH treatment provided by primary care physicians; and medications. Prescription medications accounted for almost two-thirds of out-of-pocket spending for outpatient MH treatment. Zuvekas and Meyerhoefer, "State variations in the out-of-pocket spending burden for outpatient mental health treatment," *Health Affairs* 28(3):713-722, 2009 (AHRQ Publication No. 09-R056).\*

- *Managed behavioral health care organizations have reduced the costs of specialty mental health and substance abuse treatment by shifting to outpatient services.*

There remains concern that managed behavioral health care organizations (MBHOs) may shift mental health treatment to primary care and prescription drugs (use of drugs instead of psychotherapy) in order to reach contractual cost-savings goals. However, this study of a single MBHO found no evidence to suggest that it shifted treatment costs in this way. Researchers analyzed claims data from 1991-1995 from an insurer that introduced an MBHO in 1992 to control treatment costs. The use of any psychotropic medication rose 64 percent over the 4-year period among enrollees of the large employer group that had parity for physical and mental health care and by

87 percent in the smaller groups without parity. Often these medications were prescribed in primary care settings. Introduction of the MBHO was not significantly associated with the use of any psychotropic medication alone, and for newer antidepressants, it was associated with a 2.4 percentage point decrease in medication use alone in the large group. Zuvekas, Rupp, and Norquist, “Cost shifting under managed behavioral health care,” *Psychiatric Services* 58(1):100-108, 2007 (AHRQ Publication No. 07-R036).\*

- *Hospital cost and stay duration for the elderly with non-dementia psychiatric illnesses varies by care settings.*

General hospitals, psychiatric units, long-stay hospitals, and skilled nursing facilities (SNFs) are the inpatient settings where non-dementia psychiatric illnesses (NDPI), such as depression, bipolar disorders, and substance abuse, are treated. Medicare’s cost-cutting reimbursement strategies and caps on stay lengths in addition to treatment advances have affected how the elderly receive care for NDPI. Analysis of Centers for Medicare & Medicaid Services data from 1992 to 2002 found that mean inpatient length of stay for NDPI illnesses fell from nearly 14.9 days in 1992 to just 12.1 days in 2002. Similarly, mean Medicare expenditures per stay declined from \$8,461 to \$6,207. Each of the four types of facilities treating these patients was impacted differently during the 10-year period. For example, the portion of NDPI stays that were in general hospitals fell from 34.5 percent to 27.4 percent, and the portion in long-stay hospitals fell from 19.5 percent to 11.3 percent. However, mean Medicare-covered SNF days per NDPI stay remained stable, while mean Medicare-covered costs rose from \$4,153 to \$6,375. Hoover, Akincigil, Prince, et

al., “Medicare inpatient treatment for elderly non-dementia psychiatric illnesses 1992-2002; length of stay and expenditures by facility type,” *Administration and Policy in Mental Health* 35(4): 231-240, 2008 (AHRQ grant HS16097).

- *States vary greatly in nursing home admissions for people with mental illnesses.*

State variation in services for people with mental illnesses and how they are admitted to nursing homes may result in longer-than-average stays for those individuals. Researchers analyzed 2005 data from the Centers for Medicare and Medicaid Services. They found that States varied widely in nursing home admission rates for people suffering from mental illness. For example, nursing homes in Wyoming, Nevada, Arkansas, and South Dakota had the lowest rates for admitting individuals with schizophrenia and bipolar disorder, while Connecticut, Ohio, and Massachusetts had the highest rates. What’s more, in 2004 nearly 46 percent of people with mental illnesses admitted to nursing homes in the United States remained in the facility 90 days after admission compared with 24 percent of people who did not have a mental illness. The way Medicaid pays nursing homes may be one reason for State variations in admissions for people with mental illnesses. For instance, Medicaid pays nursing homes higher rates for people with mental illnesses who have minimal physical problems. Thus, these higher rates may give nursing homes an incentive to admit these patients. Variation could also be a result of some States being able to offer home and community-based services or State psychiatric hospitals in lieu of nursing home care. Grabowski, Aschbrenner, Feng, and Mor, “Mental illness in nursing homes:



Variations across States,” *Health Affairs* 28(3), pp. 689-700, 2009 (AHRQ grant T32 HS00011).

- *Changes in cost to patients reduce new use of antidepressants among the elderly, but have less impact on continued use.*

In January 2002, the British Columbia Government switched from paying the full cost of prescriptions for seniors to requiring a copay of \$25 Canadian (\$10 for low-income seniors). In May 2003, the program began requiring patients to pay a 25 percent coinsurance once an income-based deductible was met. The level of antidepressant initiation increased from 4.3 starts per 1,000 seniors per month in 1997 to 5.0 starts per 1,000 in December 2001. Implementation of the copay policy in January 2002 reduced the antidepressant therapy start level by 0.38 per 1,000 seniors per month without changing the rate of increase over time. Introduction of coinsurance in May 2003 reduced the rate of increase per month by 0.03 per 1,000 seniors. Wang, Patrick, Dormuth et al., “The impact of cost sharing on antidepressant use among older adults in British Columbia,” *Psychiatric Services* 59(4):377–383, 2008 (AHRQ grant HS10881).

## Addiction/Substance Abuse

Substance abuse is a medical problem that requires timely treatment, not only because of its detrimental effects on health, but also because of its link to other adverse effects, such as family violence. Nearly one-third of U.S. adults suffer from some type of mental disorder or substance abuse. The number of people aged 12 and over with alcohol and/or illicit drug dependence or abuse approaches 23 million (9 percent). Yet, of people who

needed treatment for illicit drug use in 2006, only 20 percent of adults 18 to 44 and 11 percent of children 12-17 received it.

- *Different groups of women smoke for different reasons and may respond to different interventions and messages.*

This study identified three subgroups of women who smoked daily. The first group (48 percent of the sample) worked full time, were heavy smokers (more than half a pack a day), and were generally happy. The second group (19 percent) started smoking casually during their college years and exercised regularly. The third group (33 percent), mostly mothers, smoked because they were addicted and received a psychological benefit from smoking. Identifying these groups may help target smoking cessation interventions and messages. For example, women in the first group may respond to messages appropriate to their self-confidence as a means of empowering them to quit. The college-aged women may be receptive to education campaigns on the unacceptability of smoking, its negative health effects, and the danger of addiction. The women in the third group may best be deterred by smoking bans in public places and high taxes on tobacco, and best served by medically supervised cessation programs that address addiction and depression. The findings were based on a study of 443 Midwestern women who participated in a longitudinal tobacco-use study that began in 1980 with follow-ups in 1987, 1993, and 1999. Rose, Chassin, Presson, et al., “A latent class typology of young women smokers,” *Addiction* 102(8):1310-1319, 2007(AHRQ Grant HS144178).

- *Substance use is prevalent and problematic use is frequent among depressed adolescents.*

This study of individuals aged 12 to 21 years old, who had high levels of depression symptoms, found highly prevalent substance use and frequent problematic use. The proportions of both problematic and nonproblematic users rose with increasing ages: at ages 13 to 15, 14 percent were problematic users and 9 percent nonproblematic users; by ages 19 to 21, the proportions had risen to 26 and 25 percent, respectively. In addition to older age, problematic use was associated with male gender, externalizing symptoms, white ethnicity/ race, and having more friends. The most widely used substances were tobacco, alcohol, and marijuana; other substances included amphetamines, barbiturates, cocaine, LSD, tranquilizers, and heroin and other opioids. Primary care clinicians should probe carefully for substance use risk in this group of patients, suggest the researchers. Goldstein, Asarnow, Jaycox, et al., “Correlates of ‘non-problematic’ and ‘problematic’ substance use among depressed adolescents in primary care,” *Journal of Addictive Diseases* 26(3):39-52, 2007 (AHRQ Grant HS09908).

- *Screening for alcohol misuse in the emergency department may provide patients with early evaluation, prevention, and treatment of depression.*

Mostly Hispanic and black young adults seeking care at an urban emergency department (ED) were about twice as likely to suffer depressive symptoms if they had problems misusing alcohol. Researchers examined the association between four levels of alcohol misuse (at-risk drinking, problem drinking, alcohol abuse, and binge drinking) and recent depressive



symptoms among a random sample of 412 adults seen at the ED. Half of these patients (51 percent) reported depressive symptoms during the past week on a 20-item depression scale, such as loss of appetite, lack of energy, and crying spells. This rate is twice that of depressive symptoms in the general adult population (24 percent). Patients with at-risk drinking, problem drinking, drinking abuse, and binge drinking were 2.5, 2.1, 2.6, and 1.9 times more likely to have suffered depressive symptoms in the past week. Hajazi, Bazargan, Gaines, and Jermanez, "Alcohol misuse and report of recent depressive symptoms among ED patients," *American Journal of Emergency Medicine* 26: 537-544, 2008 (AHRQ grant HS14022).

- *Substance abuse and psychiatric illness account for 80 percent of hospital admissions among homeless veterans.*

Homeless veterans admitted to the hospital for psychiatric or substance abuse diagnoses were a median of 10-18 years younger than housed veterans. These findings suggest that homeless veterans have either a more rapid disease course, leading to earlier medical problems, or lower admission thresholds sufficient to prompt hospital admission. Homeless veterans were also more likely to have been admitted for psychiatric and substance abuse diagnoses than housed veterans (80 vs. 29 percent). The confluence of mental illness, substance abuse, and chaotic social situations render homeless people, including veterans, susceptible to early disease, high hospitalization rates, and premature death. Researchers compared the age at hospital admission and primary discharge diagnoses in a national sample of 43,868 veterans who were hospitalized at 141 Veterans Administration medical centers between 1996 and 1998. Adams,

Rosenheck, Gee, et al., "Hospitalized younger: A comparison of a national sample of homeless and housed inpatient veterans," *Journal of Health Care for the Poor and Underserved* 18:173-184, 2007 (AHRQ grant HS11415).

## Cognitive Impairment/Psychosis

Alzheimer's disease (AD) affects 4.5 million Americans and is the most common cause of dementia among the elderly. AD also can include hallucinations, agitation, and other signs of psychosis. Another 2.4 million Americans (1.1 percent of the population) suffer from schizophrenia. These and other types of cognitive impairment can significantly limit the functioning and quality of life of individuals, whose families often carry a high caregiving burden. Research is underway to improve care delivery for patients suffering from these debilitating conditions and to find new medications to alleviate symptoms and slow cognitive decline.

- *Better ways must be developed to get at-risk adults, especially those from ethnic minorities, to participate in memory screening for Alzheimer's disease.*

The Alzheimer's Association convened a think tank meeting on the "Diagnosis and Assessment of Alzheimer's Disease in Diverse Populations" in 2007 in Chicago. Thirty clinicians and researchers met to discuss how Alzheimer's disease (AD) affects various communities differently and how its diagnosis and treatment present challenges specific to certain population groups. A number of major points emerged from the meeting. Researchers need to deconstruct racial and ethnic variables into more meaningful variables, given that studies show that blacks and Hispanics suffer a greater

incidence of AD than whites. Clinics need to provide comfortable culturally sensitive environments for the families they serve in order to keep patients in the screening program. Finally, investigators must learn more about how chronic disease such as hypertension and diabetes interact with AD pathology, especially among ethnic minorities, who suffer disproportionately from these conditions. Dilworth-Anderson, Hendrie, Manly, et al., "Diagnosis and assessment of Alzheimer's disease in diverse populations," *Alzheimer's and Dementia* 4:305-309, 2008 (AHRQ grant HS10884).

- *One in five elderly patients hospitalized for psychiatric conditions ends up back in the hospital within 6 months.*

The hospital readmission rate for elderly patients suffering from schizophrenia and bipolar disorder was about 50 percent higher than for patients who were depressed or had substance abuse disorders. Patients who had two or more psychiatric conditions were at greater risk for readmission than patients who suffered from just one condition. Hospital stays of 5 days or longer decreased the chances that patients with affective disorders (for example, depression or bipolar disorder) would be rehospitalized. Twenty-nine percent of patients with affective disorders who had stays of 4 or fewer days were readmitted, while just 16 percent with nonaffective disorders (for example, anxiety or substance abuse) were rehospitalized. To prevent readmissions, patients, especially those with affective disorders, should not be prematurely discharged, and could benefit from tailored discharge plans and aftercare. The findings were based on analysis of 2002 Medicare data from 41,839 patients. Prince, Akincigil, Kalay, et al., "Psychiatric



**Whirling beds and chairs were a common treatment for psychosis in 19th century Amsterdam.**

rehospitalization among elderly persons in the United States,” *Psychiatric Services* 59(9):1038-1045, 2008 (AHRQ Grant HS16097).

- *Only 50-60 percent of patients treated for schizophrenia follow their medication regimen for an extended period, increasing their risk of hospitalization.*

Only 12 percent of Medicaid-insured patients with schizophrenia stayed on their medications for a full year. Compared with patients who continued to refill their medications, those who missed refilling their medication for as little as 10 days had a 54 percent increased risk of hospitalization for mental health problems and a 77 percent higher risk of hospitalization for schizophrenia. Those patients whose medication gaps were longer than 30 days were 60 percent and 49 percent respectively more likely to be hospitalized for mental health problems and schizophrenia. The researchers analyzed the Medicaid and Medicare claims data of 1,191 patients with schizophrenia from two State Medicaid programs to determine the extent to which gaps in taking atypical antipsychotic medications, medication switching, and augmentation with additional antipsychotics were related to hospitalization risk. Of the individuals whose records were studied, 552 were hospitalized over 3 years. Law, Soumerai, Degnan, and Adams, “A longitudinal study of medication nonadherence and hospitalization risk in schizophrenia,” *Journal of Clinical Psychiatry* 69(1): 47-53, 2008 (AHRQ grant HS10391).

- *Twenty four percent of those caring for persons with Alzheimer’s disease will end up visiting the emergency department or being admitted to the hospital.*

In addition, the use of these acute care services is associated with being depressed. Family and friends caring for individuals with Alzheimer’s disease (AD) were interviewed to provide information on the patient’s behaviors, actions, and activities of daily living, and on their own moods and the use of acute care services. Nearly a quarter (24 percent) of caregivers had either visited an emergency department (ED) or had been hospitalized in the 6 months prior to participating in the study. ED visits and hospitalizations most often occurred among caregivers caring for patients with cognitive, functional, behavioral, and psychological symptoms. These caregivers were also likely to suffer from more symptoms of depression. The researchers note that cognitive decline in a loved one, which is usually expected, is not as stressful to caregivers as the patient’s agitation, aggression, and other symptoms. In this study, 153 patients with AD were recruited from two large primary care practices. Schubert, Boustani, Callahan, et al., “Acute care utilization by dementia caregivers within urban primary care practices,” *Journal of General Internal Medicine* 23(11):1736-1740, 2008 (AHRQ grant HS10884).

- *Rural Alabama caregivers of patients with dementia are typically women from their early 20s to early 80s, who provide an average of nearly 50 hours of care per week.*

Many of these caregivers also work outside of home, and one-fifth of them also care for a second person in the family (for example, a young child or another elderly person) an average of 31 hours a week. Yet the average caregiver rated their caregiver burden as moderate, and most of them rated their quality of life as average or high. Nearly all of them used religion as a coping

mechanism. However, white and black caregivers had significantly different characteristics and coping styles. Compared with black caregivers, white caregivers were more likely to be married, older, have higher incomes, have fewer problems paying bills, and to care for parents. White caregivers were more likely to engage in private religious activities such as praying, while black caregivers were more likely to participate in organized religious activities. White caregivers used more medications and used acceptance and humor to cope more often than black caregivers. White caregivers felt generally more burdened by caregiving than their black counterparts. Both had low use of formal care support services. Kosberg, Kaufamn, Burgio, et al., "Family care giving to those with dementia in rural Alabama," *Journal of Aging and Health* 19: 3-21, 2007 (AHRQ grant HS13189).

## Depression

Nearly 7 percent of U.S. adults suffer from major depression in a given year. Up to 3 percent of children and 8 percent of adolescents also suffer from depression. A growing number of adults and children are being diagnosed and treated for depression by primary care doctors instead of specialists. Also, the link between depression and chronic disease is becoming more evident. The impact of depression on work, school, quality of life, and overall health is enormous. Yet it remains underrecognized and undertreated. AHRQ's substantial portfolio of depression research includes a focus on adolescents, those with chronic disease, the elderly, women, primary care of depression, as well as other topics.

## Adolescents

- *The U.S. Preventive Services Task Force now recommends screening adolescents 12 to 18 years of age for clinical depression only when appropriate systems are in place to ensure accurate diagnosis, treatment, and follow-up care.*

In a separate recommendation, the Task Force found insufficient evidence to assess the balance of benefits and harms of screening children 7 to 11 years of age for clinical depression. Depression can cause difficulties in school and disruptions of family and social relationships as well as diminished quality of life. Children and adolescents with depression are at increased risk of suicide and are more likely to suffer from depression in early adulthood. The Task Force reviewed new evidence on the benefits and harms of screening children and adolescents for clinical depression, the accuracy of screening tests administered in the primary care setting, and the benefits and risks of treating clinical depression using psychotherapy and/or medications in patients 7 to 18 years of age. Petitti, Calonge, DeWitt, et al., "Screening and treatment for major depressive disorder in children and adolescents: US Preventive Services Task Force Recommendations Statement," *Pediatrics* 123(4):1223-1228, 2009.

- *One in four young adults will suffer a depressive episode between the ages of 18 and 25.*

A depressive episode during this stage of "emerging adulthood" can get in the way of reaching developmental milestones such as getting a job or paying one's own rent. It can also cause substantial social problems. Depressed mood, identity concerns, problems with relationships, and problematic transactions with the health care system

prevented adolescents in this study from reaching developmental milestones. Many felt they had wasted time during their depression, while their peers advanced in life. Inability to accomplish these transitional tasks further worsened concerns about their identity as well as their depressed mood. Some still felt optimism about their future when they got over their depression. Researchers used interviews with 15-year-old individuals with depression to gain insight into the troubling issues they face. Kuwabara, Voorheers, Gollan, and Alexander, "A qualitative exploration of depression in emerging adulthood: Disorder, development, and social context," *General Hospital Psychiatry* 29:317-324, 2007 (AHRQ grant HS15699).

## Chronic Disease

- *Individuals with more depressive symptoms are more likely to benefit from training in chronic illness self-management.*

Individuals suffering from chronic illnesses such as diabetes and asthma must manage their condition through behaviors such as control of diet and exercise and measurement of breathing capacity or blood-sugar level. Researchers examined the impact of a training program to enhance patient self-efficacy for self-managing chronic illness among 415 adults with a variety of chronic diseases, impaired activities of daily living, and/or depression. The program focused on medical, role, and emotional self-management tasks and six chronic disease self-management skills (problem solving, decisionmaking, resource utilization, formation of patient-provider partnership, action planning, and self-tailoring). Six weeks later, the training program led to significant increases in feelings of self-efficacy in the one-fourth of individuals

with the highest depressive symptom burden (score of 15-28 on the CES-D), and only when delivered via in-home visits (not by telephone). Jerant, Kravitz, Moor-Hill, and Franks, "Depressive symptoms moderated the effect of chronic illness self-management training on self-efficacy," *Medical Care* 46(5):523-531, 2008 (AHRQ grant HS13603).

- *Patients with diabetes and depression tend to skip self-care behaviors that would help keep their diabetes in check.*

This study found that nearly one-fifth of patients with type 2 diabetes probably suffered from major depression and an additional two-thirds had at least some depressive symptoms. Both the very depressed patients and those with a few depressive symptoms (subclinical depression) were less likely than the 14 percent of patients who were not depressed to perform self-management tasks needed to control their blood-sugar levels. For example, individuals with major depression (including those on antidepressants) spent fewer days than others following the recommended diet (such as eating lots of fruits and vegetables and spacing carbohydrates throughout the day), exercise, and glucose self-monitoring regimens. They were also 2.3 times more likely to miss medication doses in the prior week than patients who were not depressed. The findings were based on a survey of 879 patients with type 2 diabetes from 2 primary care clinics. Gonzalez, Safren, Cagliero, et al., "Depression, self-care, and medication adherence in type 2 diabetes," *Diabetes Care* 30(9):2222-2227, 2007 (AHRQ grant HS14010).

- *Persons with HIV disease commonly suffer from mental health problems and substance abuse, whose care depends, in part, on the structure of their medical clinic.*

Patients who were cared for at HIV specialty clinics or clinics with a combination of care management and affiliated mental health care were twice as likely to be cared for by a mental health specialist as patients at other clinics. Those cared for at clinics with on-site case management and on-site or off-site affiliated substance abuse care were four and three times, respectively, more likely to receive outpatient substance abuse care than patients at other clinics. Case managers may facilitate linkages to mental health care and substance abuse care by making referrals, scheduling appointments, and arranging transportation. The researchers surveyed patients and clinic directors at 200 clinics participating in the HIV Cost and Services Utilization Study, a nationally representative sample of persons in care for HIV. Ohi, Landon, Cleary, and LeMaster, "Medical clinic characteristics and access to behavioral health services for persons with HIV," *Psychiatric Services* 59:400-407, 2008 (AHRQ grant HS10408 and HS10222).

### Elderly

- *Disparities remain in the diagnosis and treatment of depression among nursing home residents.*

Educated females in nursing homes who had ever been married were more likely than other residents to be diagnosed with depression. Black residents were half as likely as white residents to be diagnosed with depression. Residents older than 75 were a third less likely than those aged 65 to 75 to be diagnosed with depression. Residents with severe

cognitive impairment were a third less likely to be diagnosed than residents with normal cognitive functioning. Disparities were also found in the treatment realm. Residents who were aged 75 and older, black, had severe mental illness, were entirely dependent on assistance with activities of daily living, and had severe cognitive impairment were all less likely to receive treatment for their depression than patients with higher education levels, who were or had been married, and had one or more physical ailments. These findings were based on analysis of 2000 data on 76,735 residents of 921 Ohio nursing homes. Levin, Wei, and Akincigil, "Prevalence and treatment of diagnosed depression among elderly nursing home residents in Ohio," *Journal of the American Medical Directors Association* 8(9):585-594, 2007 (AHRQ Grant HS011825).

- *Depressive symptoms are linked to greater cognitive decline among the elderly.*

Elderly persons with depressive symptoms at the beginning of the study had a greater decline in cognitive skills during the 7-year period than did those without such symptoms. The link between depressive symptoms and cognitive decline was independent of age, gender, education, baseline cognitive score, limitations in the activities of daily living, diabetes, stroke, heart attack, and vision impairment. It is not clear whether treating depression will reduce the onset of cognitive decline, note the study authors. They examined a group of 2,812 Mexican Americans over age 65 for 7 years to determine links between depressive symptoms and cognitive decline. Raji, Reyes-Ortiz, Kuo, et al., "Depressive symptoms and cognitive change in older Mexican Americans," *Journal of Geriatric Psychiatry and*

*Neurology* 20(3):145-152 , 2007  
(AHRQ Grant HS11618).

- *Elderly use of antidepressants does not seem to increase hospitalization for pneumonia.*

Hospitalization for pneumonia and aspiration pneumonia was 1.6 and 1.45 times respectively more common among elderly antidepressant users. However, antidepressants did not seem to increase hospitalization for pneumonia, after adjustment for other factors such as chronic neurological and pulmonary conditions. Patients prescribed antidepressants suffered from pneumonia during the expected wintertime peak in late January typical of elderly persons not taking antidepressants (controls). Researchers analyzed 12,044 cases of hospitalization for pneumonia and 48,175 controls from a database of medical records from about 2,000 general practitioners in the United Kingdom from 1987 to 2002. They also identified 159 cases of hospitalization for aspiration pneumonia and 636 controls. Bilker, Leonard, et al., "Observed association between antidepressant use and pneumonia risk was confounded by comorbidity measures," *Journal of Clinical Epidemiology* 60:911-91, 2007 (AHRQ Contract No. 290-005-004; AHRQ Publication No. 08-R011).\*

### General

- *New report finds little evidence to determine the usefulness of genetic tests in the treatment of depression*

There is insufficient evidence to determine if current gene-based tests intended to personalize the dose of medications in a class of drugs called selective serotonin reuptake inhibitors (SSRIs) improve depression outcomes or aid in treatment decisions in the clinical setting, according to a new evidence report supported by AHRQ

and the Centers for Disease Control and Prevention's National Office of Public Health Genomics. The report found that tests evaluating differences in genes belonging to the Cytochrome P450 (CYP450) family, which affect the rate at which a person metabolizes SSRIs, are largely accurate. They noted that other genetic factors and non-genetic factors such as diet and other medical conditions may have an impact on a patient's response to treatment. Most studies included a small number of people, did not test for all variations of the enzymes, and were poorly designed, according to the researchers. The report was prepared by a team of researchers at the Duke University Evidence-based Practice Center in Durham, North Carolina. *Testing for CYP450 Polymorphisms in Adults With Non-Psychotic Depression Treated With SSRIs* can be found online at <http://www.ahrq.gov/clinic/tp/cyp450tp.htm> (AHRQ Publication No. 07-E002).\*

- *Sleep deprivation, lack of leisure time, and other stresses of resident training lead to depression and burnout among many medical residents.*

One in five residents participating in this study met the criteria for depression and 74 percent met the criteria for burnout. Residents with depression made 6.2 times as many medication errors per resident month as residents who were not depressed (1.55 vs. 0.25). Burnt-out residents and non-burnt-out residents made similar rates of errors per resident month (0.45 vs. 0.53). In addition, residents who were depressed or burnt out reported poorer health than peers who did not have these problems. The findings indicate that the mental health of medical residents may be a more important contributor to patient safety than previously suspected. The findings were



based on responses to questionnaires administered to 123 residents in 3 pediatric residency programs at 3 children's hospitals. Fahrenkopf, Sectish, Barger, et al., "Rates of medication errors among depressed and burnt-out residents: Prospective cohort study," *British Medical Journal* 336(7642):488-491, 2008 (AHRQ grant HS1333).

- *Depression Prognosis Index can predict depression among primary care patients.*

Coexisting physical and mental problems, a history of depression treatment, minority race, and other factors predict poor depression outcome. Low social functioning and support, being older and male, and being unemployed are also predictors of poor depression outcome, found the Depression Prognosis Index (DPI) used in this study. The researchers enrolled 1,471 patients with major depression being treated in 108 primary care practices. They ranked patients in quartiles based on their self-reported characteristics. At the 6-month followup, 64 percent of those with the poorest prognosis had a likely diagnosis of major depression while only 14 percent of those in the healthiest group had a similar diagnosis. Thus, the ability of the DPI to predict 6-month depression outcomes compared favorably with that of prognostic indicators of general medical problems. Rubenstein, Rayburn, Keeler, et al., "Predicting outcomes of primary care patients with major depression: Development of a Depression Prognosis Index," *Psychiatric Services* 58(8), 2007 (AHRQ grant HS08349).

## Primary Care

- *Up to one in four primary care patients suffer from depression; yet, primary care doctors identify less than one-third (31 percent) of these patients.*

Primary care clinicians are slightly more likely to diagnose depression among patients with suicidal thoughts or who sleep all the time (hypersomnia) or can't sleep (insomnia). Of the 304 patients in this study (mostly Latinos and blacks), 75 percent were significantly depressed, and 58 percent had both significant depression symptoms and functional impairment (such as insomnia). Suicidal thoughts increased 5.4 fold the likelihood of physician diagnosis of depression, and hypersomnia or insomnia doubled the likelihood of diagnosis. Other depression symptoms (for example, fatigue, poor appetite, excessive guilt, and agitation) and chronic medical conditions had no effect on physician diagnosis of depression. Ani, Bazargan, Hindman, et al., "Depression symptomatology and diagnosis: Discordance between patients and physicians in primary care settings," *BMC Family Practice* 9(1), 2008 (AHRQ grant HS14022).

- *Black patients are less likely to express their depression than white patients (10.8 vs. 38.4 statements) during primary care visits.*

This study also found that physicians uttered fewer rapport-building statements during visits with black patients than white patients (30.7 vs. 29.7 statements) and made fewer depression-related statements during visits with black patients (4.3 vs. 13.4 statements). Yet, even in visits where communication about depression occurred, physicians considered fewer black than white patients as suffering significant emotional distress (67 vs. 93 percent). There were no differences in depression communication by

concordance of physician-patient race or gender. The researchers studied primary care visits of 46 white and 62 black, nonelderly adults with depressive symptoms, who were receiving care from 1 of 54 physicians in urban community-based practices. Ghodes, Roter, Ford, et al., "Patient-physician communication in the primary care visits of African Americans and whites with depression," *Journal of General Internal Medicine* 23(5):600-606, 2008 (AHRQ grant HS13645).

- *Primary care patients suffering from major depression, who are involved in decisions about their care and receive mental health treatment, are more satisfied with their care.*

Fewer than half (43 percent) of the patients in this study received appropriate care for depression (25.9 percent received antidepressants, 27.6 percent counseling, and 10.2 percent both). On average, patients rated their provider a 3.3 out of 5 on the shared decisionmaking scale. Primary care patients who received mental health treatment (antidepressants and/or therapy) were 1.6 times more likely to be satisfied with their care than those who did not receive such care. Those who shared decisionmaking with their doctors were nearly three times more likely to be satisfied with their care than those who were not involved in decisions. The findings were based on analysis of responses to surveys administered to patients in the collaboration and usual care groups at baseline and 6 months later. Swanson, Bastani, Rubenstein, et al., "Effect of mental health care and shared decisionmaking on patient satisfaction in a community sample of patients with depression," *Medical Care Research and Review* 64(4):416-430, 2007 (AHRQ grant HS11407).

- *Antidepressants and therapy may be cost-effective for patients with medically unexplained symptoms.*

Individuals complaining of physical problems for which there is little or no disease explanation (somatization) make up 5 to 10 percent of primary care patients. These individuals, many of whom are depressed, often embark on a quest to find a disease that they fear but do not have. This typically results in numerous laboratory tests, consultations, and treatments of nonexistent conditions. Not only is this a costly enterprise, but physicians often ignore these patients' emotional distress, note the researchers. They randomized 206 HMO patients with medically unexplained symptoms to usual care or multimodal treatment (antidepressants and therapy). This reduced patient depression and improved satisfaction with providers, decreased physical disability, boosted use of antidepressants, and reduced use of addicting agents such as painkillers. This approach also resulted in insignificantly higher care costs (\$1,071) over the 1-year period for the treatment versus the usual care group. Luo, Goddeeris, Gardiner, and Smith, "Costs of an intervention for primary care patients with medically unexplained symptoms: A randomized controlled trial," *Psychiatric Services* 58(8):1079-1086, 2007 (AHRQ grant HS14206).

## Women

- *The symptoms of major depression are essentially the same in women who are pregnant and women who are not.*

Depressed pregnant women and depressed nonpregnant women have similar severity of depressive symptoms. Depressed pregnant women have fewer intense feelings of suicide and guilt, and significantly less difficulty falling asleep, but are more likely to show slowed

movement and/or speech, found this study. The findings are consistent with previous findings that childbearing alone has a modest, clinically insignificant effect on psychiatric symptoms. The researchers recommend that symptoms of psychological distress should not be written off as a normal part of pregnancy and that more attention should be focused on screening and identifying depressed pregnant women. They recruited the two samples of pregnant women (61 depressed and 41 nondepressed) from a larger study at Stanford University and recruited 53 depressed nonpregnant women from a larger study of acupuncture treatment of depression. Manber, Blasey, and Allen, "Depression symptoms during pregnancy," *Archives of Women's Health* 11:43-48, 2008 (AHRQ grant HS09988).

- *Identifying a patient with depression is often missed amid the bustling activity of an emergency department. Yet that environment may be a good venue for detecting it.*

Researchers reviewed audio recordings of conversations between providers and 871 women aged 18 to 65 who visited either a city or suburban hospital's emergency department (ED) between June 2001 and December 2002. Of the 486 women randomized to complete a health risk survey on a computer, nearly half of them (48 percent) reported they felt sad or depressed for more than 2 weeks during the past month, and 28 percent said they felt sad or depressed for most of the prior 2 weeks. Providers were more likely to address depression and other psychosocial issues when the patient self-disclosed these risk factors on the computer. However, even when prompted to do so by the computer, providers addressed depression with only 70 patients (8 percent) and had significant discussions with only 20 patients (2 percent). It was not

uncommon for ED providers to dismiss patients concerns, be judgmental, interrupt their response, or ask multiple questions at one time. On a positive note, in most significant discussions, providers expressed empathy (85 percent) and asked well-worded sensitive questions (90 percent). Rhodes, Kushner, Bisgaier, and Prenoveau, "Characterizing emergency department discussions about depression," *Academic Emergency Medicine* 14(10):908-11, 2007 (AHRQ grant HS11096).

## Disparities

AHRQ's 2008 National Healthcare Disparities Report shows that the racial and socioeconomic disparities in mental health care declined in some areas but remained the same in others. For example, the gap in treatment for illicit drug use shrunk between blacks/Hispanics and whites, declined between those with less than a high school education and those with some college education, but remained the same between poor and high-income people. The percentage of adults with a major depressive episode in the past year, who received treatment for it, was significantly lower for blacks than for whites (58.9 vs. 71.1 percent) and for Hispanics than whites (51.8 vs. 73.3 percent). The percentage of adults who received minimally adequate treatment for mood, anxiety, or impulse control disorders was lower among blacks and Hispanics than whites, and was lower among those with less than a high school education than high school graduates. While the quality of health care is slowly improving for the nation as a whole, it is getting worse for Hispanics, especially those who speak little or no English.



- *New Spanish-language consumer guides compare treatments for depression and other conditions.*

Spanish speakers who want to know how soon they can expect to feel better when taking an antidepressant can get this and other treatment information from a new Spanish-language consumer guide on depression released by AHRQ. The Agency also released consumer guides in Spanish that compare treatments for five other conditions ranging from arthritis to high blood pressure. The new Spanish-language consumer guides are produced by AHRQ's Effective Health Care Program, the leading Federal effort to conduct comparative effectiveness research. The program is intended to help patients, doctors, nurses, pharmacists, and others choose the most effective treatments. To access the online Spanish-language consumer guides, as well as AHRQ's English-language consumer guides and companion guides for clinicians, go to <http://effectivehealthcare.ahrq.gov/>. Audio versions of many guides also are available.\*

- *Medicaid-insured blacks are less likely to be treated for mood disorders than their white counterparts.*

Nearly all adults who commit suicide suffer from major psychiatric illness, predominantly serious mood disorders such as bipolar disorder. Yet in the year preceding their suicide, blacks insured by Tennessee's Medicaid program (TennCare) were less likely than their white counterparts to have been treated for mood disorders. Overall, 29 percent of blacks had filled an antidepressant prescription compared with 51 percent of whites. Yet there was no significant difference between the two groups in filled prescriptions for antipsychotic medications. Nearly half of blacks and

whites who committed suicide were enrolled in TennCare because of disability. Preceding the suicide, 37 percent of blacks and 49 percent of whites had inpatient admissions or outpatient visits indicating psychiatric disorders. The findings were based on examination of the medical records of TennCare-insured adults who had committed suicide between 1986 and 2004. Ray, Hall, and Meador, "Racial differences in antidepressant treatment preceding suicide in a Medicaid population," *Psychiatric Services* 58(10):137-1323, 2007 (AHRQ Grant HS10384).

- *The time spent in office visits with psychiatrists has equalized among blacks and whites in recent years.*

This study reveals progress in eradicating racial differences in the time office-based psychiatrists spend with patients. For example, from 2001 to 2003, black patients had office-based visits with psychiatrists that were an average of 4.4 minutes shorter than visits by whites (28.3 vs. 32.7 minutes). This difference was reduced to 3.5 minutes after accounting for other factors that could affect visit length. However, by 2004 to 2006, the time spent with the psychiatrist was about the same for black and white patients. Between these periods, there were longer visits by black patients rather than shorter visits by white patients. This suggests that the change was not mediated by the pattern of psychotherapy or medication visits. The findings were based on data from the 2001-2006 National Ambulatory Medical Care Survey on 7,094 office visits to psychiatrists made by white patients and 504 visits by black patients. Olfson, Cheery, and Lewis-Fernandez, and Lewis-Fernandez, "Racial differences in visit duration of



outpatient psychiatric visits,” *Archives of General Psychiatry* 66(2):214-221, 2009 (AHRQ grant HS16097).

- *The gap between whites, blacks, and Hispanics in use of mental health services is likely caused by underuse by minorities and not overuse by whites.*

Racial-ethnic groups differ in their tendency to associate mental health problems with symptoms and their use of mental health-related medications. The researchers used respondents' self-reported mental health (SRMH) assessment and a survey that provides a summary score for emotional functioning to study 55,025 person-year observations. Nearly 70 percent of those surveyed reported “excellent” or “very good” SRMH, with just 7 percent reporting “fair” or “poor” SRMH. Whites were more likely than blacks or Hispanics to associate their mental symptoms with their mental health status. The probability of whites using medication increased from .09 when they reported “excellent” SRMH to .41 when they reported “poor” SRMH. For blacks, the probability rose from .03 for “excellent” SRMH to just .17 for “poor” SRMH; for Hispanics, the probability increased from .05 for “excellent” SRMH to .23 for “poor” SRMH. The findings were based on analysis of AHRQ’s Medical Expenditure Panel Survey data from 2001 to 2004. Zuvekas and Fleishman, “Self-rated mental health and racial/ethnic disparities in mental health service use,” *Medical Care* 46(9):915-923, 2008 (AHRQ Publication No.09-007).\*

- *White children are about twice as likely to use stimulants as black and Hispanic children with similar mental health problems.*

In this study, 5.1 percent of white children compared with 2.8 percent of black and 2.1 percent of Hispanic

children purchased at least one stimulant medication during the year for conditions such as attention deficit hyperactivity disorder. Stimulants most commonly used by children were methylphenidate and amphetamine-dextroamphetamine. Differences in family or individual characteristics accounted for about 25 percent of the differences between whites and Hispanics, but for none of the difference between whites and blacks. Specifically, characteristics such as health insurance, health status, and access to care, for which whites fared better, helped to explain some of the differences between whites and Hispanics. Researchers examined stimulant use among U.S. children aged 5-17 in the Medical Expenditure Panel Survey between 2000 and 2002. Hudson, Miller, and Kirby, “Explaining racial and ethnic differences in children’s use of stimulant medication,” *Medical Care* 45(11):1068-1075, 2007 (AHRQ Publication No: 08-R044).\*

## Health Information Technology

Health IT shows promise for improving mental health care delivery. For example, electronic communication can enable behavioral health providers to follow the entire treatment path of patients from mental hospitals, protective custody, or crisis centers to various providers in urban or rural community settings. A health information exchange might aid care coordination. Other health IT initiatives that show promise include telepsychiatry and electronic health records. AHRQ recently funded several new projects to explore use of health IT to improve mental health care delivery, but they have not yet generated findings.

- *Telepsychiatry can improve access to therapy for veterans suffering from combat-related posttraumatic stress disorder (PTSD), who live in rural or underserved areas.*

Veterans who had 14 weekly 90-minute treatment sessions by telepsychiatry (therapy with a psychiatrist via videoconferencing) or in a room with a psychiatrist had similar outcomes and satisfaction with treatment 3 months later. Researchers interviewed the veterans before treatment and 3 months later, including measures of PTSD, overall psychiatric functioning, depression, and the quality of social relationships. All veterans received cognitive-behavioral group therapy for veterans with PTSD, which focused on social and emotional rehabilitation. In this type of therapy, the psychiatrist helps the person identify thoughts (such as traumatic flashbacks) causing distress, in order to change their emotional state or behavior. Researchers randomized 38 veterans with combat-related PTSD to telepsychiatry (17) or same-room therapy (21). Frueh, Monnier, Yim, et al., “A randomized trial of telepsychiatry for post-traumatic stress disorder,” *Journal of Telemedicine and Telecare* 13:142-147, 2007 (AHRQ grant HS11642).

## Pharmaceuticals

Research on medications for mental health disorders is focusing more closely on the impact of certain medications on priority populations such as children, adolescents, the elderly, and pregnant women. Another area of focus is the comparative effectiveness of various drugs on certain subgroups for certain conditions and their side effects, which will expand in the coming years. For example, AHRQ’s Centers for Education and Research on Therapeutics (CERTs) are examining

the impact of newer classes of antidepressants called selective serotonin reuptake inhibitors on various subgroups, including children, and the risk of suicide. The Agency is also examining use of antipsychotics among various populations and their off-label use, as well as a variety of other psychotropic medications.

- *Adults taking atypical antipsychotics are at higher risk of sudden death from cardiac arrhythmias and other cardiac problems.*

Patients ages 30 to 74 who took atypical antipsychotics such as risperidone, quetiapine, olanzapine, and clozapine had a significantly higher risk of sudden death from cardiac arrhythmias and other cardiac problems than patients who did not take these medications. The risk of death increased with higher doses of the drug taken. Researchers at one of AHRQ's CERTs found that current users of atypical antipsychotic drugs had a rate of sudden cardiac death twice that of people who didn't use the drugs. This is similar to the death rate of patients taking typical antipsychotics, including haloperidol and thioridazine. They conclude that atypical antipsychotics are not a safer alternative to typical antipsychotics in preventing death from sudden cardiac causes. Ray, Chung, Murray, et al., "Atypical antipsychotic drugs and the risk of sudden cardiac death," *New England Journal of Medicine* 360:225-235, 2009 (AHRQ grant HS10384).

- *Direct-to-consumer advertising seems to boost the number of new users of antidepressants.*

Economists at AHRQ used data from the 1996-2003 AHRQ Medical Expenditure Panel Survey to investigate the impact of direct-to-consumer advertising (DTCA) and consumer

cost-sharing (out-of-pocket costs) on the demand curve for several newer-generation antidepressants (such as fluoxetine, paroxetine, bupropion, and trazodone). The number of antidepressant users increased steadily between 1996 and 2003, while the average number of prescriptions filled per user increased only slightly. Refills were influenced by DTCA only at very low or no out-of-pocket costs. The researchers concluded that DTCA increases the likelihood that an individual will initiate antidepressant use, but has minimal effect on drug compliance at higher price levels. They note that, since most people with depression are untreated, bringing more of them into treatment might benefit both the individual and the public. Meyerhoefer and Zuvekas, "The shape of demand: What does it tell us about direct-to-consumer marketing of antidepressants?" *Berkeley Electronic Journal of Economic Analysis and Policy* 8(2), 2008 (AHRQ Publication No. 08-R062).\*

- *Study reveals a more than twofold jump in use of antidepressants among low-income pregnant women insured by Tennessee Medicaid (TennCare).*

The proportion of pregnant women using antidepressants increased from 5.7 percent of pregnancies in 1999 to 13.4 percent in 2003, after adjustment for maternal age, race, parity, and other factors. This was largely due to greater use of selective serotonin reuptake inhibitors (SSRIs), which more than tripled from 2.9 percent of pregnancies in 1999 to 10.2 percent in 2003. For women giving birth in 2003, 10 percent took antidepressants during the first trimester, 6.4 percent during the second, and 5.9 during the third. The use of SSRIs during both early and late pregnancy has been linked to neonatal problems such as neurological and

cardiovascular abnormalities. Researchers linked the pharmacy records of 105,335 predominantly young, low-income pregnant women enrolled in TennCare from 1999-2003 to birth certificates. Cooper, Willy, Pont, et al., "Increasing use of antidepressants in pregnancy," *Journal of Obstetrics and Gynecology* 196(6):544e1-544e5, 2007 (AHRQ grant HS10384).

- *Newer class of antidepressants are similarly effective, but side effects differ.*

Today's most commonly prescribed second-generation antidepressants are similar in effectiveness to each other, but differ when it comes to possible side effects, according to this report. The findings, based on a review of nearly 300 published studies of second-generation antidepressants, show that about 6 in 10 adult patients get some relief from the drugs. The same proportion also experience at least one side effect, ranging from nausea to dizziness and sexual dysfunction. About one in four of those patients will improve with the addition or substitution of a different drug in the same class. Overall, current evidence on the drugs is insufficient for clinicians to predict which medications will work best for individual patients, conclude the authors. They analyzed the benefits and risks of a dozen second-generation antidepressants: bupropion, citalopram, duloxetine, escitalopram, fluoxetine, fluvoxamine, mirtazapine, nefazodone, paroxetine, sertraline, trazodone, and venlafaxine. The report, *Comparative Effectiveness of Second-Generation Antidepressants in the Pharmacologic Treatment of Adult Depression*, from AHRQ's Effective Health Care program, can be found at <http://effectivehealthcare.ahrq.gov>.

- *Evidence is lacking to support many off-label uses of atypical antipsychotic drugs.*

Some newer antipsychotic medications approved to treat schizophrenia and bipolar disorder are being prescribed to millions of Americans for depression, dementia, and other psychiatric disorders without strong evidence that such off-label uses are effective, according to this report. The review of these drugs—called atypical antipsychotics—identified the medications’ potential for serious side effects (ranging from stroke and sedation to gastrointestinal problems), while pointing to an urgent need for more research into new treatments for the growing population of dementia. The review was authored by AHRQ’s Southern California/RAND Evidence-based Practice Center. The center examined 84 published studies on atypical antipsychotics and summarized evidence about dementia, depression, obsessive-compulsive disorder, post-traumatic stress disorder, personality disorders, and Tourette’s syndrome. The report, *Efficacy and Comparative Effectiveness of Off-Label Use of Atypical Antipsychotics*, from AHRQ’s Effective Health Care program, can be found at <http://www.effectivehealthcare.ahrq.gov>.

- *Maine Medicaid policy requiring prior authorization for new users of atypical antipsychotics increased patient risk of treatment discontinuity.*

In July 2003, Maine implemented a Medicaid policy requiring prior authorization for new users of atypical antipsychotics, medications commonly prescribed for conditions such as schizophrenia or bipolar disorder. As a result of the Maine policy, patients experienced a 29 percent greater risk of treatment discontinuity than patients who were able to receive atypical antipsychotics, before the

preauthorization policy was implemented. There was a 3 percent increase in preferred atypical antipsychotic use and a 5.6 percent decrease in nonpreferred atypical antipsychotic use, which led to an overall decrease in spending for atypical antipsychotics. Disruptions in antipsychotic medications can lead to psychotic episodes and hospitalizations among individuals with schizophrenia. In fact, Maine suspended the prior authorization policy in March 2004 after many reports of adverse effects. Soumerai, Zhang, Ross-Degnan, et al., “Use of atypical antipsychotic drugs for schizophrenia in Maine Medicaid following a policy change,” *Health Affairs* 27(3):w185-w195, 2008 (AHRQ grant HS10391).

- *Patients who receive follow-up care from a psychiatrist or take the newer antidepressants are more likely to continue taking antidepressant medication.*

This study found that only half of patients with depression adhered to antidepressant therapy for the first 4 months of treatment and only 42 percent of patients kept taking their antidepressants from 17 to 33 weeks after starting treatment. Patients who received follow-up care from a psychiatrist (28 percent of patients) were more likely to continue taking their antidepressant medication. Those who took the newer antidepressants (selective serotonin reuptake inhibitors), which have fewer side effects and are easier to tolerate than older drugs, were also more likely to continue taking their medication. Younger age, alcohol or other substance abuse, coexisting cardiovascular or metabolic conditions, use of older generation antidepressants, and residence in lower-income neighborhoods were associated with lower medication adherence during the

**Today’s patients typically have less complex and more effective drug therapies than this gentlemen did in 1902.**



first 4 months of treatment. Akincigil, Bowlblis, Levin, et al., "Adherence to antidepressant treatment among privately insured patients diagnosed with depression," *Medical Care* 45 (4):363-369, 2007 (AHRQ grant HS16097).

- *Far more people receive prescriptions for antidepressants from primary care physicians than psychiatrists.*

More than 70 percent of patients reported receiving their antidepressant prescription from their primary care provider in the past year. These patients were typically at least 65 years old, female, and residents of non-urban areas. Nearly 30 percent of patients received their prescriptions for antidepressants from psychiatrists, usually in higher doses. The patients tended to meet established criteria for major depressive, bipolar, panic, or post-traumatic stress disorders or social phobia, and to have a large number of mood and anxiety symptoms. The conservative approach by primary care providers may be because of side effects associated with older tricyclic antidepressants. These findings were based on examination of antidepressant prescribing patterns of psychiatrists and primary care providers for 928 patients ages 18 and older. Mojtabi and Olfson, "National patterns in antidepressant treatment by psychiatrists and general medical providers," *Journal of Clinical Psychiatry* 69(7):1064-1074, 2008 (AHRQ grant HS16097).

- *Adverse drug events and medication errors involving psychiatric medications are common among patients at psychiatric hospitals.*

Despite the movement of mental health patients out of psychiatric hospitals, more than a quarter of all hospital admissions are for psychiatric hospitalizations. Of 1,559 patients admitted at 1 psychiatric hospital in

2004 and 2005, mostly for mood disorders and schizophrenia, the rate of adverse drug events (ADEs) and serious medication errors (MEs) were 10 and 6.3 per 1,000 patient days, respectively. Preventable ADEs accounted for 13 percent of the 191 ADEs. Atypical antipsychotics accounted for over one-third of ADEs (37 percent). Two thirds of ADEs were significantly harmful, 31 percent were considered serious, and 2 percent were considered life-threatening events. Nonpsychiatric drugs were associated with nearly one-third of all preventable ADEs and near misses. The most common types of MEs were wrong dose (24.6 percent), drug-drug interaction (17.2 percent), and omitted medication (13.8 percent). The researchers identified MEs and ADEs from medical charts, progress notes, and test results; nursing and physician reports; and pharmacy intervention reports. Rothschild, Mann, Keohane, et al., "Medication safety in a psychiatric hospital," *General Hospital Psychiatry* 29:156-162, 2007 (AHRQ grant HS11534).

- *The incidence of medication errors in the outpatient treatment of attention deficit hyperactivity disorder (ADHD) is significant.*

Researchers searched the U.S. Pharmacopeia MEDMARX® database for reports involving medications used in the outpatient treatment of attention-deficit hyperactivity disorder (ADHD) in children between 2003 and 2005. Of 361 error reports, 329 involved medications used only in the treatment of ADHD and 32 involved medications used for ADHD and other conditions. Among first-listed generic medications, methylphenidate (MPH) and its derivatives (43 percent) and dextroamphetamine, alone and combined with amphetamine salts (41 percent), accounted for more than four out of five error reports. Improper dose,

wrong dosage form, and prescribing errors were the 3 most common errors listed in the 361 reports. Improper dose was a significantly more common error with MPH. Wrong dosage form was the second most common error type. This is more likely when multiple formulations of the same medication have names that sound or look similar. Bundy, Rinke, Shore, and others, "Medication errors in the ambulatory treatment of pediatric attention deficit hyperactivity disorder," *Joint Commission Journal on Quality and Patient Safety* 34(9), pp. 552-560, 2008 (AHRQ grant HS16774).

## Other Findings

- *Report shows that people treated for depression in primary care clinics that coordinate mental and physical health services fare better.*

The AHRQ evidence report, *Integration of Mental Health/ Substance Abuse and Primary Care*, also found that patients treated in specialty mental health centers appear to benefit when the facilities offer general medical care, but the number of studies was too limited to draw firm conclusions. Prepared by the AHRQ-supported University of Minnesota Evidence based Research Center in Minneapolis, the report did not find sufficient evidence to draw conclusions about the impact of integrating mental health and physical medicine services on patients with anxiety disorders, alcohol use disorders, or other mental or behavioral health problems. It did identify financial barriers to combining mental health and physical health services. These included lack of reimbursement for consultations, communication activities between providers, telephone conversations with patients, and other care management functions, such as payment to care coordinators. To view the full evidence report, go to

<http://ahrq.gov/research/jan09/0109RA21.htm> (AHRQ Contract No. 290-02-009; AHRQ Publication No. 09-E003).\*

- *Hospitalized trauma victims expressing three or more concerns after injury are more likely to suffer from post traumatic stress disorder (PTSD).*

Of 120 hospitalized injury survivors, 84 percent expressed 1 or more severe concerns and 14.3 percent expressed 3 severe concerns. Physical health concerns (68 percent) were predominant, with the patients focusing on extent of their injury, pain, and worries about being able to take care of themselves. These concerns were followed by work and finance (59 percent); social, such as the impact of the trauma on family and friends (44 percent); medical (8 percent); and legal (5 percent) concerns. Patients who reported three severe concerns had significantly elevated scores on a PTSD checklist (17-item questionnaire) compared with other groups 1,3,6, and 12 months after injury. Researchers interviewed adult survivors of unintentional (e.g., motor cycle accidents) or intentional (e.g., assault) injuries within an average of 3 days following hospital admission. Zatzick, Russo, Rajotter, et al., “Strengthening the patient-provider relationship in the aftermath of physical trauma through an understanding of the nature and severity of posttraumatic concerns,” *Psychiatry*, 70(3):260-273, 2007 (AHRQ grant HS11372).

- *Emergency departments vary in their approach to psychiatric emergencies, underscoring the need for standards.*

With the lack of State psychiatric facilities and community support, persons in psychiatric crisis often end up at the hospital emergency department (ED). Yet, there are no

established best practices for managing these ED patients. A hospital’s approach to ED psychiatric emergencies tended to be largely influenced by its available resources and circumstances. For example, hospitals with an ED psychiatric emergency service (EDPES) had more inpatient psychiatric beds and a larger share of the market and served a greater volume of psychiatric patients compared with those without an EDPES. Hospitals that used a contractual EDPES had the slowest response time and were more likely to contract for other clinical services as well. The survey of ED administrators at 71 hospitals in 2 States found that 45 percent of hospitals used an in-house psychiatric service, 41 percent had a contractual structure, and 14 percent had no psychiatric services. Brown, “A survey of emergency department psychiatric services,” *General Hospital Psychiatry* 29:475-480, 2007 (AHRQ grant HS13859).

- *Nearly one-fourth of all adult stays in U.S. community hospitals involve depressive, bipolar, schizophrenia, and other mental health disorders or substance use-related disorders.*

This report presents the first documentation of the full impact of mental health and substance abuse disorders on U.S. community hospitals. According to the report, about 1.9 million of the 7.6 million stays were for patients who were hospitalized primarily because of a mental health or substance abuse problem. In the other 5.7 million stays, patients were admitted for another condition but they also were diagnosed as having a mental health or substance abuse disorder. Nearly two-thirds of costs were billed to the government (Medicare and Medicaid). Patients who had been diagnosed with both a mental

health condition and a substance abuse disorder accounted for 1 million of the nearly 8 million stays. In addition, 240,000 women hospitalized for childbirth or pregnancy had mental health or substance abuse problems. Suicide attempts accounted for nearly 179,000 hospital stays. The report is based on 2004 data from AHRQ’s Healthcare Cost and Utilization Project Nationwide Inpatient Sample, a nationally representative database of hospital inpatient stays. For more details, see <http://www.ahrq.gov/data/hcup/factbk10/> (AHRQ Publication No. 07-0008).\*

- *When people with mood disorders are hospitalized for treatment, between 20 and 50 percent of them return to the hospital within a year.*

Nearly a quarter of people with major depression, bipolar disorder, or both conditions were hospitalized from 1999 to 2000. Twenty-four percent of the people hospitalized with mood disorders were rehospitalized within 3 months after they were discharged. Thirty-six percent of people hospitalized for mood disorders also had received diagnoses of alcohol or drug abuse. People with mood disorders who abused drugs or alcohol had a risk of readmission that was 58 percent and 46 percent greater, respectively, than those who did not abuse drugs or alcohol. Researchers at the Rutgers University Center for Education and Research on Therapeutics analyzed Medicaid claims data from five States from 1999 to 2000. Prince, Akincigil, Hoover, et al., “Substance abuse and hospitalization for mood disorder among Medicaid beneficiaries,” *American Journal of Public Health* 99(1):160-167, 2009 (AHRQ grant HS16097).



- *Diagnosis of bipolar disorder among U.S. youth jumped 40-fold during office visits between 1994 and 2003.*

The number of office visits in which youth were diagnosed with bipolar disorder rose from 25 to 1,003 visits per 100,000 population between 1994 and 2003. Youth and adults were equally likely to have coexisting mental disorders, but youth were 10 times more likely to be also diagnosed with attention deficit hyperactivity disorder (ADHD). Visit duration and frequency of psychotherapy were also similar for youth and adults. Nearly two-thirds of youth and adults were likely to receive a combination of drugs such as a mood stabilizer and antidepressant or a mood stabilizer and antipsychotic. Diagnosis of bipolar disorder in youth can be more difficult due to the overlap of symptoms with other more prevalent psychiatric disorders. Researchers analyzed bipolar diagnostic patterns from annual data from the National Ambulatory Medical Care Survey. They examined 154 youth visits and 808 adult visits to physicians in which this diagnosis was received. Moreno, Laje, Blanco, Jiang, et al., “National trends in the outpatient diagnosis and treatment of bipolar disorder in youth,” *Archives of General Psychiatry* 64(9):1032-1039, 2007 (AHRQ grant HS16097).

- *The 1990s brought many changes in psychiatric care, including tighter admission criteria for hospital stays and a wealth of new drug therapies.*

Despite no significant decline in mental disorders during the 1990s, the overall rate of psychiatric admissions was 28 percent lower. A reduction in stays for depression accounted for nearly half of that decrease, and stays for substance use disorders declined as well. However, inpatient stays for bipolar disorder and schizophrenia did not change during the study period, most likely because these patients exhibit severe symptoms,

such a psychosis or lack of behavior control. The authors observe that this pattern of use fits with an intensive care model. Average hospital stays dropped from nearly 18 days in 1992 to just 12 in 2002, and costs per stay went from about \$6,500 to \$6,000. These findings were based on analysis of Medicare data from 1992 and 2002 for patients over age 65 who had psychiatric conditions and were insured by fee-for-service plans. Akincigil, A, Hoover, D.R, Walkup, J.T, and others, “Hospitalizations for psychiatric illness among community-dwelling elderly persons in 1992 and 2002,” *Psychiatric Services* 59(9):1046-1048, 2008 (AHRQ grant HS16097).

- *Eating disorders are sending more Americans to the hospital.*

The number of men and women hospitalized due to eating disorders that caused anemia, kidney failure, erratic heart rhythms, or other problems rose 18 percent between 1999 and 2006, according to AHRQ data. AHRQ’s analysis also found that between 1999 and 2006:

- Hospitalizations for eating disorders rose most sharply for children under 12 years of age—119 percent, followed by a 48 percent rise among patients ages 45 to 64.
- Hospitalizations for men increased by 37 percent, but women continued to dominate hospitalizations for eating disorders (89 percent in 2006).
- Admissions for anorexia, the most common eating disorder, remained relatively stable. People with anorexia typically lose extreme amounts of weight by not eating enough food, over-exercising, self-inducing vomiting, or using laxatives.

- In contrast, hospitalizations for bulimia declined 7 percent. Bulimia is binge eating followed by purging by vomiting or use of laxatives and can lead to severe dehydration or stomach and intestinal problems.
- Hospitalizations for less common eating disorders increased 38 percent. Those disorders include pica, an obsession with eating nonedible substances such as clay or plaster, and psychogenic vomiting, which is vomiting caused by anxiety and stress.

For more information, see *Hospitalizations for Eating Disorders from 1999 to 2006*, HCUP Statistical Brief #70 (<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb70.jsp>).

## More Information

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