SCHIZOPHRENIA: A COMPLEX CHALLENGE IN HEALTH ECONOMICS

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Introduction

The 1994 Nobel Prize in Economics was awarded to John Nash for his outstanding contributions to the field of game theory. His groundbreaking work helped establish contemporary theoretical foundations in a variety of applications, ranging from economic models to nuclear arms strategy. In the early 1960s, Nash was diagnosed with schizophrenia and became academically unproductive for the following two and a half decades. In a New York radio broadcast made shortly after the 1994 Nobel Prize winners were announced, a fellow game theorist applauded the Nobel Assembly for acknowledging that severe mental illness is a burden that does not disqualify an individual from making meaningful contributions to society.

Schizophrenia is among the most debilitating of mental illnesses. It is a persistent disorder characterized by early onset. As it affected John Nash's work, schizophrenia affects many other individuals' ability to think, feel, work, and relate to others and to their environment. Schizophrenia is considered a psychosis, a mental disorder characterized by a lost or highly distorted view of reality in addition to severe cognitive impairment. It is also a disease that imposes significant economic stress on the affected individual, the individual's family, and society in general. In 1985, schizophrenia cost the American economy $28.8 billion, entailing 0.4% of total health care expenditures for that year. Experts attribute 48.8% of these expenses to direct costs such as treatment and support, 35.6% to morbidity costs (the value of unrealized productivity), and 4.5% to mortality costs (the loss of productivity resulting from personal death) (Rice and Miller 1996, 321). Schizophrenia is not only a disease that affects the economy on a large national scale, but one that impairs the ability of those affected by the disease to maintain contributory consumer roles, social networks (including family and friends), and relationships with potential caretakers and proxy decision-makers (Norquist et al. 1996, 96).

Health care economics establishes a framework for understanding policy decisions concerning the delivery of care for persons afflicted with schizophrenia. The nature of the illness is such that many of the assumptions that differentiate health economics from classical economics affect mental health services with particular force. There is a wide variety of available

treatments for schizophrenia, and the diversity of information on the disease is equally profound. It is this broad range of information and options that makes the allocation of resources necessary for diagnosis and treatment difficult. Economics plays a large role in the treatment and recovery of schizophrenics on both a personal and national level. Therefore, a better organized and implemented economic policy would increase the effectiveness of the health care system to treat those suffering from schizophrenia.

Defining Schizophrenia

There are difficulties associated with defining schizophrenia. Both schizophrenia and afflicted individuals exhibit a wide range of characteristics, making it difficult to trace a universal cause of clinical manifestations or predict a specific illness course and prognosis. Its borderline classification as both a functional and organic disorder demonstrates the need to better understand the neurochemical basis of the disorder and how it relates to the everyday stresses of social interaction. There is controversy over whether schizophrenia is even a specific disease or merely a blanket term that needs to be further subdivided as a spectrum of subset disorders. These controversies reflect a growing body of knowledge concerning schizophrenia that continues to be refined with ongoing research. Understanding schizophrenia on a fundamental level is essential to the development of increasingly sophisticated options concerning the care and management of the disease. This is of critical importance to those attempting to maintain a balance between both efficacious treatments and overall cost-benefits.

The Diagnostic and Statistical Manual (DSM-IV) is considered the most authoritative resource for the characterization of mental health disorders. The Manual divides the symptomology of the disease into two broad categories: positive symptoms and negative symptoms. Positive symptoms are behavioral abnormalities that include “hallucinations, delusions, impaired perception, impaired inferential thinking, incoherence, illogical thought progression, irrational behavior,” and unregulated emotions (DSM-IV 273-278). The “negative symptoms” are behavioral deficits that may include a lack of energy, drive, initiative, and interest, in addition to poor concentration and attention, social withdrawal, emotional unresponsiveness, and impaired social and daily living skills. Most afflicted individuals are young male adults and episodes typically peak between the ages of 19 and 25, with a later and broader peak for women between the ages of 26 and 45. Although there is controversy concerning the degree to which symptoms are treatable, there is agreement that while these symptoms are manifest, they are substantial obstacles to self-fulfillment that may render afflicted

persons totally incapable of self-care because many affected are hesitant to seek help. The disease is further complicated by the unwillingness of those affected by the disease to report the symptoms of their illness. In addition to the costs of treatment and lack of productivity, the devastating consequences on an individual's family life, social relations, and productive cognitive capacities affect his or her future employment prospects (Andreasen and Schultz 1996, 15-22).

Clinical Diagnosis

An accurate diagnosis is essential for timely treatment and appropriate care. The International Classification of Disease (ICD-10) and the Diagnostic and Statistical Manual (DSM-IV) are widely used standardized diagnostic tools that provide clinicians with a comprehensive list of criteria for making accurate diagnostic assessments. The American DSM-IV provides the narrowest definition, requiring both one month of active symptoms and an additional six months of exhibiting the overall syndrome. Prior to the introduction of negative symptoms into the DSM-IV definition, the symptoms were defined collectively as a "residual state," a condition relative to a baseline established on pre-morbid conditions and were unaccounted for in clinical follow-ups. Observations concerning the psychiatric state of patients with schizophrenia are typically categorized into three groups: delusions and hallucinations, thought disorder and bizarre behavior, and deficit negative symptoms. According to a study performed by Nancy Andreasen and Susan Schultz, an adequate clinical database would include diagnostic information, severity and symptom types, symptoms courses, and an index of psychopathology and cognitive function (Andreasen and Schultz 1996, 21-22). Ideally, a person with extensive psychiatric training would be available to collect the diagnostic information. Accurate diagnosis is particularly important for chronic diseases requiring long-term attention and management. In institutional settings, administrative decisions affect treatment protocols and organizational distribution of financial resources. This includes funding for pharmaceuticals, personnel, and facility usage, all of which affect accurate diagnosis. Thus, concern of accurate diagnosis precedes that of distribution of care because inaccurate diagnosis may result in further disease progression and may drastically increase the cost of both primary care and superfluous costs, some of which include the sale of unnecessary monthly drug prescriptions.

Remission

Relapses are considered costly medical events because they often incur the same costs accrued during the acute phases of the disorder. These costs include hospitalization, emergency medical

treatment, and incidents involving local law enforcement authorities. In addition to making a correct initial diagnosis, it is important that clinicians be responsible and show restraint in determining remission. In the past, such decisions have been made using global assessments like “recovered’ and “unchanged.” In the United States, the Brief Psychiatric Rating Scale (BPRS) is the most extensively used tool for determining remission. The BPRS was the assessment used in analyzing the efficacy of using clozapine as drug therapy. However, because the core of its definition relies heavily upon the manifestation of active, positive symptoms, the BPRS may not be the best tool for determining relapse. Current tools for determining relapse define it as a 20% deterioration of symptoms from a poorly defined baseline, yet remission is defined as a 20% improvement from the same unclear baseline. This presents a persistent problem that will hopefully be remedied by future studies aimed at developing improved precision assessment techniques for clinical settings (Knapp 1996, 385-394).

Treatment Outcomes and Quality of Life

Assessing outcome of care is an important consideration in determining which health care policies to research and adopt. Quality of life assessments, in addition to treating the positive and negative symptoms of the disease, are important in the determination of the patient’s desired outcomes. Such assessments attempt to evaluate individual outlooks and perceptions following the psychological trauma and lifestyle deterioration that follow psychotic episodes. Quality of life assessments in widespread use include: the Community Adjustment Form, Quality of Life Checklist, Satisfaction with Life Domains Scale, Oregon Quality of Life Questionnaire, Lehman Quality of Life Interview, Quality of Life Scales, Client Quality of Life Interview, California Well-Being Project Client, and Lancaster Quality of Life Profile. A study conducted by Lehman concludes that of these, the Oregon Quality of Life Questionnaire, the Lehman Quality of Life Interviews, the Lancaster Quality of Life Profile, and the Heinrichs-Carpenter Quality of Life Scale are the most comprehensive and best-characterized assessments from a psychometric view (Lehman 1996, 39-43, 47).

Quality of life improvements that qualify beyond that of basic management care are subject to cost-benefit analysis, and in order to ensure efficient health care is provided resources must not be consumed if they could be better be utilized elsewhere. We must consider whether or not, from a utilitarian standpoint, the notion of a “social contract” in which individual needs are met only to the extent that they meet the demands of society applies to individuals suffering from severe mental illness. Although societal demands are diminished by the very nature of the illness and

difficulties develop when assessing the allocation of scare resources, social utility and opportunity costs are still valid. The importance of establishing assessments for quality of life lies in the need to precisely determine the desired target outcomes before assessing optimal resource allocations that would achieve the target objectives of treatment (Henderson 2002, 2-4, 524, 563-568).

Establishing Epidemiological Data

Prevalence is the total number of disease cases occurring within a defined geographic locale or population; studies over the years have yielded a range of prevalence for schizophrenia. Estimating prevalence provides data useful in calculating costs and service utilization. According to a study done by the National Institute of Mental Health, estimates of the prevalence for a six-month period of active clinical manifestations have ranged from 0.4%-0.7%. Prevalence for those affected over a one-year period has ranged from 0.2%-1.0%, while those representing lifetime prevalence have ranged from 0.1% to 1.0%. A study led by Povl Jørgenson and published in 1996 concluded, “differences in diagnostic criteria, case findings, and limited sample sizes” result in a range of figures. Data for these estimates are collected using information requested from case registers, key informants, and facility reports (Jørgenson 1996, 103-108).

Mortality is another important consideration in estimating prevalence because the higher the mortality, the lower the prevalence. In Denmark, the mortality rate of persons with schizophrenia has doubled in the past two decades; most deaths occurred in recently diagnosed young men. This trend is also common among patients with other functional psychoses (Fenton 1996, 79-89).

The monitoring methodology used for collecting epidemiological data varies across institutions. According to a study published in a series of international publications centered at the Danish Psychiatric Central Register, there are certain characteristics that define a comprehensive and complete monitoring system. The most important feature of an ideal monitoring system is person-specific information used to identify the specific needs of a given individual. Also important is cumulative data specific to time and place. High validity and reliability among national and international institutions would also prove useful, especially among those relying on similar methods to describe schizophrenia. Computerized data, easy input and access, secure patient confidentiality, and a means for collecting regular feedback about the principles and registered utilization are equally desirable aspects for such a monitoring system. Improvements in these areas will have broad-ranging effects on the economics of

schizophrenia. Ideally, the data would be updated regularly and would prove easily accessible to registries, researchers, and researching institutions (Jørgenson 1996, 105-108).

Hospital Care

Although patients with schizophrenia may seek in-patient care at some point in their lives, most receive the majority of their treatment during sort-term hospital stays and rarely stay for more than 30 to 45 days. However, approximately 20% of those admitted require 90-day stays or longer during the course of their lives, and another 20% never recover and are committed to state mental health institutions for custodial care (Bradley and Hirsh 1986, 68-71). Teaching hospitals, community hospitals, and city hospitals typically are not equipped to treat schizophrenia and only contribute by reducing acute crises followed by quick referrals to hospitals that provide long-term health care. Although living standards have improved and the overall number of permanent residents has diminished, current hospitals that treat severe mental health disorders are still similar in structure and function to those of 150 years ago. The primary difference in organization is the eligibility criteria for admissions, which may include residency, veteran status, and financial resources. The quality of administrative organization and availability of financial resources affect the level and quality of the services available to the hospital (Keefe and Harvey 1994, 191-211).

Environmental influences within institutional settings have been identified as detriments that exacerbate the negative symptoms of schizophrenia. This is an especially important consideration because negative symptoms are resistant to most forms of psychopharmacological modification. Also, due to the concern that long-term hospitalization fosters dependence, large and environmentally impoverished living conditions seem to have marginal effects on the well-being of patients. Longer hospital stays may actually decrease the quality of care by increasing the likelihood that patients will develop iatrogenic illness from becoming over-accustomed to hospital care. This suggests that quality of care will be low for extremely short periods of in-patient care, which are characterized by an absence of psychiatric attention, as well as extremely long periods which require indefinite custodial care (Frank and Lave 1986, 334-345). Evidence that long-term inpatient admissions often incur the highest costs and receive the least attention is another cause of concern (Bebbington 1996, 68).

In addition to improving the cost-effectiveness of patients remaining in state hospitals, efforts to deinstitutionalize mental health care are designed to combat dependence on hospital services and to promote a more rapid re-entry into society. However, there

are studies indicating that even minor, seemingly insignificant events may have unsettling effects on people with schizophrenia. Because the events that trigger episodes are not necessarily severe, rapid reintroduction into society may result in relapses that incur substantial financial costs (Bartel 1986, 253-256).

Drug Therapy

Before the discovery of neuroleptics, most hospital admissions for persons with severe mental illnesses required exceptionally long stays. Neuroleptics, a class of antipsychotic drugs characterized by similar chemical structures and physiological effects, have been in widespread use since the discovery of clozapine in 1957 (Keefe and Harvey 1994, 144-148). About 70% of people treated with these drugs experience significant improvement, while 30% experience no improvement and are termed resistant or refractory. Approximately 30-40% of patients treated with these drugs experience chronic symptoms and are considered partial responders. As few as 15% of the population receive optimal clinical benefits with the use of typical neuroleptics (Bentley 1998, 389). Although typical neuroleptics have proven effective as a primary treatment for positive symptoms, they do little to alleviate the negative symptoms of schizophrenia, which appear resistant to most forms of psychopharmaceutical therapies. In addition, these drugs may have serious side effects, including involuntary muscular motion and minor cognitive impairments that persist after cessation of drug treatment (Keefe and Harvey 1994, 137-143). This leads to the concern that current drug therapies exist as low-cost "chemical strait jackets" in state-sponsored mental health institutions.[1] However, dramatic improvements in the positive symptoms of schizophrenia due to drug therapy enable certain afflicted individuals to recover important cognitive faculties that diminish their need for close monitoring in an institutional setting (Bowes 2002). Evidence suggests that drug therapy functions in part as an effective substitute for psychiatric assistance. Studies have shown that pharmaceutical intervention decreases the severity and frequency of need for psychiatric care, thus freeing up clinicians (who are in short supply) to treat severe mental illness. This impact on health care delivery has made drug therapy indispensable not only because of its effectiveness in addressing disease symptoms, but also because it relieves strain on human resources (Frank and McGuire 1999, 15).

Recent developments in pharmacology suggest that next-generation anti-psychotics may prove more effective as primary treatments that lower long-term costs. Atypical anti-psychotic drugs treat the negative symptoms with substantially

lower levels of problematic side effects. It is possible that savings due to shorter hospital stays, fewer relapses, and improvements in productivity may outweigh the higher initial costs of these drugs. However, there are few economic evaluations comparing the cost-effectiveness of atypical anti-psychotics over typical neuroleptics. Most that do exist are either sponsored or conducted by the companies that produce the drugs, which leaves the studies susceptible to strong bias. Although it is uncertain whether they are indeed more cost-effective on a longitudinal scale, there is agreement that atypical anti-psychotics more effectively reduce the active symptoms of severe mental illness than other interventions available to clinicians (Dranove and Meltzer 1994, 419-422, Drumond and Davies 1996, 399-407).

Rehabilitation and Community Support

Rehabilitation programs for chronic mental illnesses became more prevalent after those for developmental disabilities proved successful. These programs aim to reintroduce patients into social environments and help them become productive again. According to the World Health Organization's Collaborative Study of the Assessment and Reduction of Psychiatric Disability, work-related performance was the most impaired of functions for persons with schizophrenia, ranking above even those of self-care and family functions. However, the study also notes that those persons' interest in securing a job rated closer to the control population than any other role associated with social contact. The initial estimate of 43% employment for individuals diagnosed with schizophrenia has been deemed "optimistic at best," and other studies indicate that 10-26% of that population are primarily employed in unskilled occupations (Salvador-Carulla and Velazquez 1996, 41-59).

The growing need for patient rehabilitation has led to numerous government interventions, of which the Americans with Disability Act of 1990 appears to have been the most successful. Due to differences among international job markets, these policy measures appear to be more effective in the United States than anywhere else (Norquist et al. 1996, 98). In a study done by Morgan and Cheadle in 1975, researchers concluded that unemployment rates above 2% greatly hamper entry into the job market for persons with chronic mental illnesses, while unemployment above 6% makes entry for those individuals nearly impossible. Unemployment rates in the United States contrast sharply with those of European countries, where unemployment can exceed 10%. In Europe, many countries have adopted a "quota scheme" that requires certain companies to employ a given number of people with mental disabilities (Salvador-Carulla and Velazquez 1996, 61-62).

Although vocational integration is an important aspect of rehabilitation, the ultimate goal of treatment is for the patient to enjoy life as much as possible without the trauma associated with illness. Further research and closer cooperation across disciplines can make treatment more effective and less costly.

Social Attitudes as Barriers to Rehabilitation

The diagnosis of schizophrenia is complicated by the sensitive issue of social stigmas. People with schizophrenia are often treated as dangerous, unpredictable, and of little value to society, making widespread discrimination against the mentally ill a concern. In a study examining attitudinal changes over time, Matas et al. evaluated the treatment of mental illness in public media and concluded that despite "minor, cosmetic changes," on the whole, "content and attitudes have changed little" (Frank and McGuire 1999, 4). As a result, schizophrenics, particularly the homeless, are often ignored or misunderstood. Due to public attitudes towards the mentally ill—attitudes which may be irrational or mistaken—treatment of the disorder has historically been placed at the fringes of health care policy. In the past, public health policy has been shaped not only by differences in the types of treatments available, but also by the diversity of those with the disease. However, the cost of the illness complicates policy concerns. In the case of schizophrenia, the individuals with the most complex mental health needs often have the fewest financial resources (Hargreaves 1996, 347, Salvador-Carulla and Velazquez 1996, 60-62).

Homelessness

The homeless population is over-represented in terms of the prevalence of schizophrenia. It is estimated that over 200,000 homeless persons suffer from a severe mental illness. These persons represent approximately 5% of the population, and of these, an estimated 25-40% experience clinical symptoms of schizophrenia. The deinstitutionalization of the 1960s resulted in progressive reductions of mental hospital capacity and the shifting of hospital patients from institutional care to nursing homes, jails, and the streets. However, deinstitutionalization is not believed to be a major cause of the homeless in the United States. Rather, the population of the homeless grew during the 1980s as housing options rapidly diminished (Treatment Advocacy Center 2003).

Researchers have found that homeless people with severe mental disorders, including schizophrenia, share characteristics that separate them from others in the homeless population. They are usually homeless for longer periods of time and tend to be more visible, residing on the streets and in parks and subways. Approximately half of these people also have a co-occurring

substance abuse problem and are in poorer physical health than other homeless persons. In addition, while most are eligible, few receive a government sponsored income plan such as Supplemental Security Income (SSI) and public assistance. Most are willing to accept mental health treatment but are initially more receptive to help that meets basic survival needs. Furthermore, research suggests an association between homelessness and the early onset of mental disease, co-occurring personality disorders, and a history of childhood disturbances (Treatment Advocacy Center 2003).

For people with schizophrenia, homelessness may be a factor that renders rehabilitation virtually impossible. Economic stresses and survival concerns are exacerbated by additional barriers to employment. Frequent contact with the legal system may complicate living concerns. However, it is estimated that only 5-7% of homeless people with schizophrenia need to be institutionalized. Most can live within a community that offers appropriate housing. However, the shortage of appropriate and affordable housing to accommodate those in this situation is often a problem when it comes to rehabilitation (Rice and Miller 1996, 321).

Criminal Activity

Re-entry of persons with schizophrenia into public settings is complicated by the issue of social stigmas and concerns about the individual as a danger to public safety. In a study taking socioeconomic considerations into account and comparing released psychiatric patients with a control population, the psychiatric patients showed significantly higher incidences of weapon use and violent behavior. However, from a study conducted in 1998, Henry Steadman concluded that individuals suffering from mental health disorders and free of substance abuse problems are no more likely to commit crimes than other neighborhood residents without substance abuse problems (Frank and McGuire 1999, 8). Another study, conducted by the National Institute of Mental Health, suggests that the majority of psychiatric patients released into society are not dangerous, but that there is evidence that individuals within the group with co-occurring substance abuse problems are far more likely to be involved in violent behavior. It is true, however, that released persons with severe mental illness are more likely to have substance abuse problems than individuals without such disorders (Frank and McGuire 1999, 8-10).

The Funding of Mental Health Care

Financial responsibility for providing health care for the treatment of schizophrenia rests primarily with the federal and state governments. Medicaid has played a particularly important role in financing mental health care (Frank and Lave 1986,

321-323). State and local government funding (including state and local block grants and Medicaid) represent the majority of funds for the treatment of mental health and substance abuse, which is approximately 42.1% more than the 26.3% they pay for general health services (Frank and McGuire 1999, 12-13). The federal government funds 25% of the general health expenditures, but only 20% of the mental health and substance abuse costs (Hu et al. 1996, 359). State mental health hospitals, accounting for 55% of the costs of all specialty mental health services spent in 1969, accounted for only 25% of these costs in 1994. Over time, the importance and financial responsibility of Medicaid has grown (Maynard 1996, 425-429).

The role of local level government in addressing the social problem of severe mental disorders like schizophrenia predates the existence of public and private insurance arrangements. Before the nineteenth century, mental health was not formally considered a part of the medical field. Although care was administered for "lunatics" and the "disturbed" through informal institutions like poor houses and almshouses, local and state governments did not provide public funding until the 1820s (Frank and McGuire 1999, 71-72). These institutions served to provide involuntary treatment and isolation for individuals as well as to protect the general public from the individuals. The transfer of financial responsibility from the local to state level boosted enthusiasm for asylums in such a way that in some institutions, the spectrum of persons considered to be suffering from chronic mental disease began to include the old and senile. Due to the success of this shift in responsibility, the states have continued to play a primary role in determining mental health care policy in the United States since the mid-nineteenth century (Digby 1983, 218-222).

Today, funding for the care of persons with severe mental health disorders like schizophrenia is a complex matter primarily handled on the state level. This arrangement presents certain difficulties in determining an optimal model for delivery of care. For one, different organizations may focus on varying aspects such as substance abuse problems and rehabilitation, and each may have a separate contract agreement (Maynard 1996, 425-431). In addition, established systems of public financing may inhibit the growth of more innovative ways of financing care and treatment because the historic role of the state in managing severe mental illnesses predates modern insurance arrangements. Finally, the state is liable for public safety considerations. States may feel responsible for directly managing the treatment and care of the mentally ill to satisfy its role as guardian of public safety (Frank and McGuire 1999, 71-73).

The states make the majority of spending decisions concerning treatment. As a result, the available economic literature

focuses primarily on guiding state decisions. Many of these papers view the decisions as choices made by planners trying to coordinate mental health services for the poor and indigent while simultaneously taking into account budget considerations that affect programs like education. The primary concerns of these choices involve an interrelation between the provision of welfare for the poor and spending within state budget constraints. The constraints on these choices include the income of the state, the size of the public mental health care system, the available alternatives to state funding, and the federal rules that govern Medicaid, namely the federal matching of state spending and the provision of limited private specialty care.

The federal government's financial responsibility in the treatment of schizophrenia takes into account responsibilities and incentives for cost shifting and further state involvement and support. During the 1960s, the movement towards deinstitutionalization resulted in the shrinking or closure of hospitals and the transfer of care from a centralized institution to a diverse set of providers. A single payer system emerged from the market for those services, one in which the state governments paid a significant sum of the costs. Only a part of those costs are paid for by private insurers, in part thanks to the insurance arrangement provided by the Medicaid program.

The Effects of Federal Financing

Federal government financing has had an impact on the economic burden the state assumes in treating severe mental illnesses like schizophrenia. It relieves economic stress by matching state expenditures and allows for the availability of care in settings funded by Medicaid (Weisbrod 1981, 525). It has also expanded the insurance coverage of psychiatric services and private care. However, Medicaid is believed to be the most important factor leading to the deinstitutionalization of state hospitals, due to the shifting of mental health care costs away from state budgets. Mental health hospitals experienced a 1.5% reduction in costs per year from 1955-1966; and after Medicaid launched in 1966, the rate jumped to a 6% reduction per year (Frank and Mcguire 1999, 65). The movement has resulted in the development of innovative pharmacological solutions in addition to the growth of community mental health centers.

However, federal financing is not the only factor affecting the use of mental health services within a state. A cross-sectional study of the fifty states in 1976 indicated a positive correlation between a state's medical spending and per capita spending. In addition, the size of the state has a large influence on total costs (Frank and Lave 1986). The study noted that the existence of mandated health insurance statutes reduced mental health

spending, perhaps by creating new opportunities for cost shifting. Another study, conducted by Michael et al. in 1980, suggests that the availability of nursing homes reduced state mental hospital usage and that there is a large and positive correlation between the number of hospitals within a district and hospital use itself (Frank and McGuire 1999, 66-68).

Cost shifting creates tension between federal and state governments in establishing health care policies. Medicare and Medicaid initially included a condition that prevented the reimbursement for care provided in an "institution of mental disease" and limited inpatient benefits to 190 days per lifetime. The purpose of these provisions was to prevent the states from shifting the costs of mental health care completely onto the federal government. It now appears that the federal government provides the broad outlines for proper financing of mental health care, and state and local decision makers flesh out that outline to meet the costs of treating the disease throughout distinct localities, thus deriving maximum financial support on the federal level (Frank and McGuire 1999, 70-75).

Conclusion

Schizophrenia poses a substantial and complex economic burden, and efforts are being made to better understand the onset, course, and treatment of the illness. Closer cooperation across disciplines and greater communication between theory and application will result in better delivery of care. Policy makers require information concerning the costs, outcomes, and needs associated with the treatment of schizophrenia. Such data is important because the decisions being made involve high costs and regular utilization.

General trends in the treatment of persons with schizophrenia reflect a decreased dependence on in-patient hospital care and the growth of decentralized out-patient care.
Funding for severe mental disorders is provided by the states through Medicaid because afflicted persons may no longer be capable of self-care and may become a danger to society. There is a growing need for rehabilitation opportunities that reflect the desire of patients to become productive members of society. There is also a need for growth in community-based systems as more and more individuals are being sustained by welfare outside of an institutional setting.

Medical care delivery systems have always had difficulty accommodating individuals with chronic diseases. In the case of severe mental illnesses such as schizophrenia, the costs of treatment are high and the duration of care is indefinite. Existing therapeutic approaches to treating the illness are difficult to assess in terms of outcome and efficiency. This leads to a greater need for

commitment to researching the optimal allocation of resources available for the treatment of severe mental illness.

The areas for possible reform are numerous and still need to be explored further. Issues involving data standardization hamper information sharing between states, limiting the scope of statistical proofs and making it difficult to produce literature on health policies relating to schizophrenia. Service networks designed to effectively integrate patient care with community resources have yet to be realized on state levels. There is consensus that the medical community still needs better communication between research theory and health policy practice, increased efforts and funding for the research of mental health care reform, and the development of methods for empirically comparing the efficiency of the myriad of available therapeutic approaches. The benefits of such investments are numerous. Clearer diagnostic standards will lead to more accurate diagnoses, and data comparisons between varying drug treatment regimens will help clinicians optimize the effectiveness of existing drug therapies. Correlations between frequency of visits and the amount of time and type of attention afforded by health care personnel with recovery and relapse will help decision makers determine how available facilities should be used. Cost-effective delivery of care will make it easier for patients to rehabilitate and rejoin the workforce. Research that affects the delivery of care will allow clinical settings to maximize their financial resources and will encourage decision-makers responsible for directing federal and private sponsorship to take the practical availability of care into consideration when analyzing the potential of medical research proposals, particularly those proposals outlining novel therapeutic options.

Note

[1] I am indebted to Dr. James Henderson, a professor of health economics at Baylor University, for this observation.

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