The chapter entitled "Major Mental Disorders and Behavior" from Health and Behavior: Frontiers of Research in the Biobehavioral Sciences (Hamburg, Elliott, & Parron, 1982) takes a highly biological view of major mental illness in the United States. This biological orientation to mental health reflects several decades of research and clinical experience in the statistical and neurobiological sciences in this country and other Western nations. From the work in these sciences a great deal has been learned about the function of the brain in health and illness. The last several decades of work have produced a revolution in psychopharmacological treatments for major mental disorders, a phenomenological approach to diagnosis, a new understanding of neurochemistry, diurnal rhythms, neuroendocrinology, brain physiology, and functional neuroanatomy. There now exists a much improved understanding of the genetics of mental illness and the social environment of the psychiatric patient from the majority American culture, particularly those patients living in cities. These fields promise to contribute even more substantially to our understanding of human behavior in the near future.

In contrast to the impressive body of work in the neurosciences with the majority American culture, relatively little is actually known about major mental disorders among American Indian and Alaska Native people. In the majority culture, decades of research have produced highly refined diagnostic categories for major mental illness. The development of a system of good phenomenological diagnosis, based on statistical clustering of symptoms rather than assumed etiological similarities, has provided a foundation upon which, for example, to describe familial patterns of mental illness, diagnostic instruments that could accurately identify and distinguish cases from noncases were needed. In order to identify aberration in neurotransmitter systems in the brain, diagnoses needed to have sufficient refinement to produce homogeneous groups of subjects with the same symptoms of illness.

Because of the difficulties of accurately diagnosing mental illness in Indian people, for reasons discussed below, the very foundation for the application of these biological and statistical insights to Indian people is lacking. Diagnoses of major mental illness in Indian cultures are not yet sufficiently refined to permit the applications of many of the sophisticated biological models of "Major Mental Disorder and Behavior" to Indian patients.
American Indian and Alaska Native people represent a staggering multitude of different cultures. If culture influences the patient’s expression of symptoms, it is reasonable to expect a similarly large number of presentations for even a single biological mechanism of illness if that mechanism were present in all Indian cultures. Even if there were only one biological substrate for all major mental illness among Indians, diagnostic instruments would have to take into account the effect of culture upon the presentation of symptoms before being sufficiently reliable to permit epidemiological, genetic, or other biological research.

The assumption of a unitary biological basis of any major mental illness among all American Indian and Alaska Native populations must also be questioned. American Indian gene pools have been separated from European gene pools, and even from each other, in some cases, for thousands of years. Yet, it is from European or majority American gene pools that most of the studies of the genetics and biochemistry of mental illness have taken their subjects. Even if symptom patterns were the same for Indians as for the majority culture, it would remain to be proven that the biochemistry and genetics associated with identical symptom patterns were the same, and not simply "final common pathways" for the different biological phenomena in the brain. It remains to be proven that different genetic or chemical abnormalities do not produce similar or identical symptoms. Treatments developed to ameliorate a group of symptoms resulting from one biological mechanism may not be effective on the same symptom complex if caused by a different biological defect. Treatment outcome studies and investigations of the basic biological mechanisms of mental illness would need to be replicated with Indian populations before it is certain that the underlying biological mechanisms of mental illness are the same for Indian populations as for the non-Indian American population.

The discussion in "Major Mental Disorders and Behavior" of risk factors that predispose to the development of major mental illness is also of questionable applicability to Indian populations. Psychosocial factors that create a risk for the development of mental illnesses among Indian people may be substantially different than those of the majority culture. Family structure and dynamics, pervasive lack of economic and vocational opportunities, different cognitive-linguistic frameworks, and a variety of other cultural differences in Indian communities may create entirely different patterns of risk for Indian people developing mental illnesses.

Cultural expectations of the healing process may create a different set of expectations for therapeutic interventions among Indian patients than the therapeutic expectations of patients from the majority culture (Kleinman, 1978). Indian patients' expectations of the healing process may influence the entire spectrum of interventions available to clinicians serving Indian populations.
Some forms of therapy may be significantly more effective with Indian patients than others, but this remains relatively unexplored.

Decades of intense theoretical and clinical research have contributed to the models of mental illness and psychiatric treatment described in "Major Mental Disorders and Behavior." This research has clearly been beneficial to the treatment of mental illness in patients from the majority culture. Its applicability to Indian patients is, at best, unclear. In contrast to the level of refinement of the research summarized in "Major Mental Disorders and Behavior," research efforts in Indian mental health are at a more basic, pioneering level. Years of research and clinical work will be needed before an Indian mental health program can take full advantage of the technology now available to the majority culture.

A number of potentially fertile areas for investigation in Indian mental health are suggested by "Major Mental Disorders and Behavior." With well-coordinated research efforts aimed at resolving the most fundamental questions in Indian mental health, it is likely that a wealth of treatment technology and basic theoretical knowledge could become available to Indian mental health programs. Before anticipating the most promising research efforts, however, it is necessary to examine the status of current knowledge of Indian mental health, particularly the areas of epidemiology and diagnostic nosology.

Modern concepts of mental illness incorporate genetic, social, psychological, biochemical, cognitive, characterological, and functional neurophysiologic dimensions to understand the mechanisms of mental illness. In the majority American culture these dimensions of mental illness have been explored over the past century, but in the field of Indian mental health, most of these dimensions remain in large part unexamined. The diagnosis of mental illness among Indians becomes suspect unless diagnostic instruments are designed to adjust for cultural bias. Though significant work on the dimension of culture has been performed (Shore & Manson, 1983), much more work is needed in this and other as yet unexplored dimensions of major mental illness in Indian people.

In attempting to understand the dimensions of mental illness in Indian people, much more work is needed to understand other biological, environmental, and developmental substrates of major mental illness. Personality theories developed to fit the majority culture may or may not have applicability to Indian people. This remains to be explored, as do a myriad of questions about patterns of cognitive function, responses to stress, and other characterological factors.

A variety of culture-bound syndromes exist among American Indians and Alaska Natives (Trimble, Manson, & Dinges, 1983). The combinations of environmental, genetic, characterologic, and other factors that produce these syndromes are not fully understood. Investigations of these syndromes, where they exist, may surely contribute to our basic understanding of the interplay of genetic, environmental, and developmental factors that cause mental disorders in
any culture. Systematic investigation beyond simple descriptive work is needed in order to more thoroughly understand the etiological contributions of genetic and environmental forces in shaping these syndromes. In addition, investigation of some of these rare syndromes may shed light on the causes and treatment of other mental disorders among Indian people.

This chapter will examine the extent and quality of current knowledge of mental health and illness syndromes among American Indians and Alaska Natives. This knowledge is derived from the service delivery system and the research literature in the field. Both sources of information have strengths and weaknesses which will be discussed. New developments in both the service delivery system and in research methodologies will be identified, and the possibilities of each explored. Finally, developments in the mainstream of mental health research and therapeutics will be briefly explored insofar as they suggest new directions for future studies of major mental illness and behavior among American Indians.

Data About Indian Mental Health and Illness

Basic information about the mental health of Indian people and Alaska Natives derives from two sources: the service delivery system and academic research. The type of information from each has been very different. The service utilization system has produced general information about large numbers of patients. The research literature has generally focused on specific questions on small groups of subjects, usually from a single culture. Both sources of data yield clues to patterns of major mental disorders in Indian cultures, but neither kind of data is currently able to provide a comprehensive picture of the overall mental health of American Indian and Alaska Native people.

The Service Delivery System

The last 2 decades have witnessed the development of a service delivery network for American Indians and Alaska Natives suffering from major mental disorders, paralleled by the beginnings of the study of Indian mental health and illness as a discrete area of research. The mental health programs of the Indian Health Service began in 1965 with the allocation of congressional funding for a demonstration mental health program on the Pine Ridge Reservation in South Dakota. From this small beginning, mental health services have expanded rapidly to include virtually all the nation’s more than 90 reservations (Beiser & Attneave, 1978). Many of these programs now include services delivered by psychologists, social workers, and psychiatrists in addition to paraprofessional mental health technicians and community health representatives. Since 1980, the
growth of these programs has declined, due largely to budgetary restrictions. Nevertheless, most reservation-based Indian people currently have access to at least outpatient mental health services.

The majority of the services provided to reservation-based Indian people are office- or community-based services, although the Indian Health Service operates inpatient psychiatric facilities at Gallup, New Mexico; Anchorage, Alaska; and Rapid City, South Dakota. Although the Indian Children’s Program in Albuquerque, New Mexico, provides some services for emotionally disturbed children, the large majority of mental health services are oriented towards adults (Beiser & Attneave, 1978; Bloom, 1972; Rhoades, Marshall, Attneave, Echohawk, Bjork, & Beiser, 1980). Conversations this author has had with Indian Health Service and tribal mental health providers indicate that the largest proportion of services across the nation seems to be office-based individual therapy and counseling. Group therapy, home-based therapy, and family therapy were reported to be infrequently utilized. The provision of relatively specialized services, such as day hospitalization and organized case management, are rare to non-existent.

For a number of reasons, information regarding Indian mental health and illness is linked to the status of the service delivery system, in particular, to the Indian Health Service. For researchers, the IHS provides access to Indian communities and can either encourage or impede research efforts on reservations. The distrust of "anthropologic" studies that remains after the intense period of ethnologic and ethnographic work on many reservations in the 1960s and early 1970s still persists to the point that gaining the approval of a tribal council or tribal health board to initiate a research project may be next to impossible without IHS sponsorship. Even with that sponsorship, and assurances that the research is anticipated to benefit the provision of health care directly, some communities remain sufficiently skeptical that research, no matter how potentially useful, is all but impossible. For this reason, the attitudes of Indian Health Service and tribal mental health staff toward scientific investigation of mental health issues is critical to the establishment of community-supported research projects. A concerted effort is needed to educate Indian Health Service and tribal mental health staff on the importance of Indian mental health research.

Mental health service providers. The IHS is organized fundamentally as a service provision network. Although operations are supervised by a National Headquarters in Rockville, Maryland; a Mental Health Program Headquarters in Albuquerque, New Mexico; and 12 Area and Program Offices, the bulk of the staff and operations remain at the IHS’s Service Units on the reservations. Doctoral level professionals are generally stationed at Headquarters and at the Area Offices, while the Service Units operate most often with Masters level professional staff and technicians from a variety of backgrounds. Mental health
programs, operated by various tribes under the contract authority of the Indian Self-Determination and Education Assistance Act (Department of Health, Education, & Welfare, 1975; P.L. 92-638), generally operate locally with the same staffing patterns as IHS programs.

The daily contact between providers in the service delivery system and Indian patients affords perhaps the best opportunity for identifying trends and unanswered questions in Indian mental health. Unfortunately, this group of providers has not contributed regularly to the technical literature primarily because of the intensity of the workload, the attitudes of Indian communities toward research, and the relative shortages of research-oriented mental health professionals. The Indian Health Service has been cooperative, but has not actively promoted its own research into major mental illness among Indian people. Studies of service utilization depend upon accuracy of the diagnoses recorded by these providers. While some are comfortable with utilizing structured diagnostic labeling of patients, others have a high degree of discomfort with either the structured interview setting necessary to arrive at accurate diagnoses or a general discomfort with diagnostic labeling. For example, discomfort of the Billings Area mental health staff has resulted in the use of nondiagnostic procedural codes in patient records. This will be discussed further below.

On most reservations, general medical services are provided by physicians with either an internship or specialty training in one of the primary care medical specialties, particularly family practice or internal medicine. To date, no systematic analysis of the role of nonpsychiatric medical providers in the delivery of mental health services to Indian people has been performed. If patterns in the delivery of health care for Indians resemble those of medicine for the majority culture, a large portion of Indian mental health patients are seen by nonpsychiatric physicians (Fauman, 1983; Orleans, George, Houpt, & Brodie, 1985; Reiger, Goldberg, Burns, Hankin, Hoeper, & Nycz, 1982) in ambulatory and inpatient medical settings at the Service Units. This may be particularly true for patients with physiological complaints related to psychological disturbances (Kleinfeld, Bloom, & Weed, 1982). Relatively little attention has been paid to the role of nonpsychiatric physicians in treating Indian patients with major mental illness, even on the key issue of the ability and willingness of nonpsychiatric practitioners to recognize and accurately diagnose major mental illnesses.

In 1984, the Indian Health Service formed a study group (composed of representatives of the IHS, tribal groups, and the academic community) to investigate the current and potential roles of paraprofessional community health representatives in the delivery of mental health services to reservation communities. The results of the study indicated that in at least several locations,
community health representatives had developed significant mental health roles. In programs that have developed specialized mental health positions, these providers have played a major part in delivering high quality services including direct therapeutic, counseling, screening, outreach, and case management to their communities (Indian Health Service/Community Health Representative Study Group on Mental Health, 1984). Much of the data from the efforts of these community health representatives is unavailable for examination due to difficulties in activity reporting systems. Nevertheless, it appears that these community health representatives play a significant, if inadequately measured, role in the mental health service delivery system.

As a result of the limitations in the growth of funding for Indian mental health programs, for a number of years there have been no general IHS or tribal national meetings dedicated to the sharing of technical and clinical information. It is possible that a number of innovations and discoveries have been made through the local service delivery networks, but remain unknown to the national service delivery system because of the lack of a forum for presentation of the results. The anecdotal information about programmatic variability and differences in treatment techniques, gleaned from the Community Health Representatives’ Study Group, indicates this may well be the case. There is clearly a need for periodic national Indian mental health meetings for the purpose of sharing research and clinical findings.

The reporting system. Because of the difficulties in performing community-wide epidemiologic studies of major mental disorders on reservations, the Indian Health Service has relied upon service utilization data to estimate the mental health needs of Indian communities. A number of computerized reporting systems are currently in use by the tribes and the IHS. The two main information systems, the Ambulatory Patient Care (APC) system, and the Patient Care Information System (PCIS), are in general use. The APC system uses a standard list of 11 categories of mental disorders and 3 categories of neurological disorders on a checklist form. These classifications include the general categories of neuroses, schizophrenia and other psychoses, organic brain syndromes, personality disorders, etc., and do not allow for a more specific coding of disorders. Because of the lack of conformity with more modern diagnostic terminology and the inability to tabulate APC data with more specificity than these broad categories allow, it has been difficult to draw epidemiologic conclusions from this system.

Three of the 12 IHS Areas and Program Offices—Alaska, Tucson, and Billings—utilize the PCIS system. This system utilizes diagnostic coding from the International Classification of Diseases, (9th rev.) (ICD-9) (Commission on Professional and Hospital Activities, 1979), which, with only minor differences, incorporates the classifications of the Third Diagnostic and Statistical Manual
(DSM-III) of the American Psychiatric Association (1980) along with other medical diagnostic and procedural codes. This has allowed for better service utilization data, though major methodological limitations have existed in interpreting data generated even with this improved system, in part because of the lack of training for staff to use these diagnostic categories. Additional difficulties have been encountered in writing the BASIC computer language programs needed to retrieve data from this system resulting from antiquated hardware and limited access to the database. Data from the current data systems is stored at a single location in the country. Field programs must currently telephone this facility and request that this small and overworked staff write a special program in BASIC for each new question asked of the system.

Currently the IHS is converting to a new patient care information system based on the MUMPS computer language (an acronym for Massachusetts General Hospital’s Utility Multiprogramming System). It is anticipated that this new information system will allow for better access to data by clinicians and may, therefore, encourage clinicians to examine their own service utilization data. It may also allow for better comparisons of diagnostic data among Service Units in order to identify reservation-specific trends in mental health that merit further study or description. Because the MUMPS language is "transportable" between large and small computers with different operating systems (Walters, 1982), it becomes possible to formulate a national IHS mental health service utilization database. If funding is adequate for software development and hardware acquisition at the Service Unit level, it is very likely that the mental health programs may one day be able to provide diagnostic software that guides professional and paraprofessional mental health workers through a hierarchical series of diagnostic questions in order to arrive at reliable diagnoses, much like the decision trees in the DSM-III. If this data system develops to allow such applications it may solve some of the current problems in standardization of diagnostic criteria and nomenclature.

If the IHS is successful in implementing the new MUMPS system, much more useful data will become available. If the MUMPS system is correctly designed to support health care delivery operations, rather than simply serving as a work load measurement tool, a revolution in the quality of services and service utilization may take place. The MUMPS system is capable of interacting with health care providers and patients in the interview or examination setting. Programs can easily design structured databases and examination protocols that meet the clinical and research needs of the population being served. Structured interviews and screening tools such as those used by the World Health Organization (Murthy & Wig, 1983) could easily be placed on office-based computers running MUMPS. With the new powerful computers that can fit into a briefcase, it is entirely possible to place MUMPS-based, self-guiding,
structured interviews into the hands of paraprofessionals working in community outreach and screening roles.

Unlike current IHS information systems, MUMPS-based systems can easily be made to interact with providers with minimal training. A MUMPS program can easily be designed to interact with the health care provider during a patient visit, asking for more information about the patient, or guiding the provider through a complex differential diagnosis. For the first time, a provider may have access to large amounts of his or her own program's patient care data. Treatment outcome measurement, if well designed, can also be incorporated into the database on groups of patients. The ease of measuring treatment outcomes may at last permit comparisons of treatment outcomes with non-Indian populations.

The future usefulness of the MUMPS patient care information system is by no means certain, however. Funding for the development of this massive system is provided by Congress in a yearly appropriation. Funding for the development of the system has been minuscule in comparison to other agencies such as the Veterans Administration that are also converting to MUMPS patient information systems. The expenditure of funds to buy computer hardware has provided the nucleus of a working system, but has by no means been sufficient in these early years of development of the system to place data terminals in examining and interview rooms, and portable machines in the hands of community outreach workers. The proportion of the funding devoted to software development and training of staff in the use of the system has been small thus far, and more emphasis on these aspects will be needed in the future. The potential exists to entice clinicians into readily using these computer systems only if sufficient emphasis is placed upon building "user-friendliness" into the MUMPS patient information system.

The possibility of a truly useful patient information system for Indian mental health is very real. Defects of the existing systems must be carefully considered in designing the new systems, however. The current systems are designed primarily to measure work load. Because of the need to report work loads to Congress to justify funding, the present systems have evolved into work load measurement tools rather than primarily supporting patient care operations. This need to monitor work will always be present, but with only a little more effort and funding, the system can also serve the clinical needs of patients and health care providers.

Service utilization. Several analyses of the IHS mental health system have examined the mental health services delivered to American Indians and Alaska Natives. Rhoades et al. (1980) analyzed APC-generated IHS health care data and found that 2.1% of the 2,759,000 visits to IHS facilities were for mental disorders. Neuroses, alcoholism, psychoses, and drug abuse and dependence
were the leading diagnostic categories. It should be noted that disorders now classified as affective disorders were included in the category "neuroses."

Another analysis of the IHS service utilization was presented by Tower and Neligh of the Billings Area's IHS to the 1984 Plenary Session of the Indian Health Service Mental Health Program Review. This data, generated by the PCIS system, appears in Tables 1 through 4.

The data presented in these tables represents a year's patient contacts by mental health staff on the eight reservations in Montana and Wyoming which constitute the Billings Area of the Indian Health Service. The Billings Area is 1 of the 12 Areas and Programs that subdivide the continental United States and Alaska. The tribes of the Billings Area are primarily Plains tribes, though Great Basin and some Northwest Coastal cultural influences are present in the Kootenai and Salish people of the Flathead Tribe. The reservations in the Billings Area have from 2,000 to 6,000 people each. These reservations are generally located in remote areas and are sparsely populated. The unemployment rates on these reservations are high. Traditional cultural values are widely held and tribal languages are still widely spoken.

The Billings Area mental health staff includes a psychiatrist, a psychologist, a psychiatric nurse clinician, a number of psychiatric social workers, and a variety of mental health technicians from several different training backgrounds. This staff has received several continuing education sessions regarding the use of the DSM-III and periodic feedback and consultation about their diagnostic skills. Except for this training and feedback, the staff remains largely unsupervised on the accuracy of their diagnostic groupings. All have been instructed on the need to check diagnoses against the specific diagnostic criteria in the DSM-III. Diagnostic data were recorded by this staff on the basis of individual contacts with mental health providers, and compiled through computer-generated PCIS reports in the form of cross listings of the contacts. These lists were hand counted, and then entered onto another computer and retabulated.

A total of 17,044 patient contacts were recorded for 1983 by the Billings Area mental health staff. Only contacts for the IHS staff are recorded here; tribal mental health workers recorded their data using other systems. In recording patient contacts, individual cases may have been counted several times and recorded under several categories, for example under a DSM-III diagnostic code and a procedural "V" code of the ICD-9. However, using this system only one primary diagnosis or procedure code per visit is entered into the data system. Difficulties of the current PCIS system did not permit the counting of individual cases.

Thus, data presented here represents only a measure of effort expended by the Billings Area IHS mental health staff for the period of a year, and not epidemiologic estimates of the incidence or prevalence of major mental illness in
the Indian communities in the Billings Area. Caution must be exercised in attempting to draw any epidemiologic conclusions from service utilization data. For reasons discussed below, patients suffering from a specific mental illness may be more or less inclined to seek treatment and thereby have contact with the mental health system than their counterparts with another disorder, or in comparison with persons with the same disorder on another reservation. A further weakness of this data lies in the probability that patients with some disorders will have a greater total number of contacts with the treatment system in a given year than patients with other disorders. For example, a patient with a chronic schizophrenic illness may have contacts with the treatment system on a weekly basis throughout the year. He or she would then account for 52 contacts recorded in the tables. In contrast, a patient with a successfully treated major depressive episode may have a total of 6 to 8 contacts before their condition is stabilized. Thus, more chronic and less treatable disorders may tend to be highly represented in the data. This is balanced against the trend, noted in the Billings Area, for staff to be hesitant to record diagnoses with poor prognoses or those that carry social stigmata in the medical charts and instead to enter the less stigmatizing "V" codes.

Some questions can be answered from this data, however. The figures represent a work demand measure of the treatment system. With very little case-finding or community-based screening being carried out on the reservations in the Billings Area, these figures represent self-referrals or patients who are having sufficient difficulty that they are pressured to come into treatment by relatives or the legal system. Even though individual cases are not recorded only once, this data may reflect the seriousness of particular disorders in the eyes of patients and Indian communities. Another trend reflected in the work load data may be community awareness that particular groups of symptoms represent mental disorders. The most reliable interpretation of this data is that it reflects a good cross section of the work load of mental health staff in the Billings Area based on DSM-III diagnostic groupings.

Table 1 presents the number of contacts for the 6,802 patients for whom a DSM-III diagnosis was recorded as the primary purpose of the contact. The high frequency of contacts for alcohol-related primary diagnoses is highlighted even further by realizing that the role of mental health staff in working with alcoholism is secondary to the roles of the separate tribal alcoholism programs which see the large majority of contacts between alcoholics and the treatment system. Experience in this service delivery system, at the time this data was gathered, indicates that mental health staff were asked to see alcoholics only where the presentation of the alcoholic patient was atypical: for example, in cases of delirium tremens, other organic mental syndromes, severe personality disorders, or affective disorders. The records of the alcohol treatment system are
kept separately from those in the PCIS system and are not considered here. Nevertheless, the impact of the problem of alcoholism on the treatment system is evident when one considers that for mental health staff, working with only a small fraction of the total alcoholic population, alcoholism still constitutes large demands upon the mental health treatment system.

It is, likewise, of interest to note that nondependent use of drugs, such as marijuana, hallucinogens, sedative hypnotics, cocaine, and amphetamines is represented by a relatively high frequency in the yearly number of contacts. Though not reflected in the common thinking about Indian alcoholism, it is this author's observation and frequently encountered in the local clinical lore that, in the Billings Area, Indian people who abuse alcohol without using other psychoactive drugs are relatively rare. Even in remote areas, an illicit drug market exists which can supply to almost any person on one of the reservations a wide range of drugs, from sedative hypnotics to hallucinogens and psychomotor stimulants. Clinicians in the Billings Area have observed that patients who come into contact with the treatment system as alcoholics may, at other times, abuse other drugs, often frequenting a series of physicians in communities away from reservations to obtain sedative/hypnotic or narcotic analgesic prescriptions. Though certainly not conclusive, these figures suggest that nonalcohol drug use may represent a problem on the reservations in the Billings Area. This is particularly worthy of note in light of the fact that the program structure of the reservation-based alcoholism treatment programs, with one exception in the Billings Area, offer no interventions for the abuse of drugs other than alcohol.

Table 1
Utilization of Services by DSM-III Diagnostic Group for the Billings Area IHS—1983

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>DSM-III codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,206</td>
<td>303.00–304.00</td>
<td>Alcohol dependence syndrome</td>
</tr>
<tr>
<td>962</td>
<td>296.20–296.40</td>
<td>Major depressive disorder—single/recurrent</td>
</tr>
<tr>
<td>799</td>
<td>309.00–310.00</td>
<td>Adjustment reaction</td>
</tr>
<tr>
<td>695</td>
<td>301.00–302.00</td>
<td>Personality disorders</td>
</tr>
<tr>
<td>537</td>
<td>300.00–300.20</td>
<td>Anxiety/hysteria</td>
</tr>
<tr>
<td>441</td>
<td>305.00–306.00</td>
<td>Nondependent use of drugs</td>
</tr>
<tr>
<td>395</td>
<td>295.00–296.00</td>
<td>Schizophrenic disorders</td>
</tr>
<tr>
<td>335</td>
<td>311.00–312.00</td>
<td>Other depressive disorders</td>
</tr>
<tr>
<td>253</td>
<td>300.30–300.90</td>
<td>Obsessive compulsive disorders/neurotic depression</td>
</tr>
<tr>
<td>238</td>
<td>312.00–313.00</td>
<td>Other disturbance of conduct</td>
</tr>
<tr>
<td>166</td>
<td>313.00–314.00</td>
<td>Disturbance of emotions specific to childhood and adolescence</td>
</tr>
<tr>
<td>106</td>
<td>296.40–297.00</td>
<td>Bipolar disorders</td>
</tr>
<tr>
<td>96</td>
<td>304.00–305.00</td>
<td>Drug dependence</td>
</tr>
<tr>
<td>88</td>
<td>308.00–309.00</td>
<td>Acute reaction to stress</td>
</tr>
<tr>
<td>82</td>
<td>300.90–301.00</td>
<td>Suicide related</td>
</tr>
<tr>
<td>80</td>
<td>306.00–307.00</td>
<td>Physiologic malfunction arising from mental factors</td>
</tr>
<tr>
<td>68</td>
<td>307.80–308.00</td>
<td>Psychosis/other and unspecified special symptoms</td>
</tr>
<tr>
<td>48</td>
<td>307.40–307.50</td>
<td>Specific disorders of sleep of nonorganic origin</td>
</tr>
<tr>
<td>46</td>
<td>298.00–299.00</td>
<td>Other nonorganic psychoses</td>
</tr>
</tbody>
</table>
Table 1 (continued)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>DSM-III codes From</th>
<th>DSM-III codes To</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>314.00</td>
<td>315.00</td>
<td>Hyperkinetic syndrome of childhood</td>
</tr>
<tr>
<td>22</td>
<td>297.00</td>
<td>298.00</td>
<td>Paranoid states</td>
</tr>
<tr>
<td>21</td>
<td>307.60</td>
<td>307.80</td>
<td>Enuresis/encopresis</td>
</tr>
<tr>
<td>15</td>
<td>300.20</td>
<td>300.30</td>
<td>Phobic disorders</td>
</tr>
<tr>
<td>15</td>
<td>315.00</td>
<td>316.00</td>
<td>Specific delays in development</td>
</tr>
<tr>
<td>11</td>
<td>317.00</td>
<td>320.00</td>
<td>Mental retardation</td>
</tr>
<tr>
<td>9</td>
<td>296.00</td>
<td>296.20</td>
<td>Manic disorder--single/recurrent</td>
</tr>
<tr>
<td>7</td>
<td>310.00</td>
<td>311.00</td>
<td>Specific nonpsychotic mental disorders due to organic brain damage</td>
</tr>
<tr>
<td>6</td>
<td>302.00</td>
<td>303.00</td>
<td>Sexual deviations and disorders</td>
</tr>
<tr>
<td>6</td>
<td>307.50</td>
<td>307.60</td>
<td>Other/unspecified disorders of eating</td>
</tr>
<tr>
<td>5</td>
<td>307.10</td>
<td>307.20</td>
<td>Anorexia nervosa</td>
</tr>
<tr>
<td>3</td>
<td>299.00</td>
<td>300.00</td>
<td>Psychoses with origin specific to childhood</td>
</tr>
<tr>
<td>3</td>
<td>307.20</td>
<td>307.40</td>
<td>Tics/stereotyped repetitive movements</td>
</tr>
<tr>
<td>0</td>
<td>307.00</td>
<td>307.00</td>
<td>Stammering and stuttering</td>
</tr>
</tbody>
</table>

Note. Based on a total of 6,802 contacts.

Table 2 represents the classification of visits to mental health staff for which an ICD-9 "V" code was recorded. A "V" code designation is a nondiagnostic procedural classification. A greater number of contacts (8,122) were recorded using the V codes than the number of contacts that utilized a DSM-III diagnosis (6,802). Many of these V-coded visits may have been recorded for patients who carry a DSM-III diagnosis, but the system does not permit cross-referencing to the DSM-III diagnosis. The propensity of the staff to use these procedure codes as opposed to diagnostic codes, may represent a hesitancy to record a diagnostic label resulting from their own diagnostic uncertainty, a dislike of structured interviews, or a perceived lack of diagnostic "fit" of the diagnostic criteria to their patients. It may also represent a lack of clarity of the purpose of the data system, that is, whether it measures work load, diagnostic service utilization data, or general categories of service.

Table 2

ICD-9 V Codes Utilization for the Billings Area IHS—1983

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>V codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,829</td>
<td>V68.9</td>
<td>Unspecified administrative purpose</td>
</tr>
<tr>
<td>1,565</td>
<td>V64-65</td>
<td>Procedure not carried out/persons seeking consultation without complaint</td>
</tr>
<tr>
<td>1,546</td>
<td>V61</td>
<td>Other family circumstances</td>
</tr>
<tr>
<td>1,235</td>
<td>V62</td>
<td>Other psychosocial circumstances</td>
</tr>
<tr>
<td>524</td>
<td>V68.8</td>
<td>Other unspecified administrative purpose</td>
</tr>
<tr>
<td>392</td>
<td>V70</td>
<td>General medical examination</td>
</tr>
<tr>
<td>294</td>
<td>V68.1</td>
<td>Issue of repeat prescriptions</td>
</tr>
<tr>
<td>247</td>
<td>V67</td>
<td>Follow-up examination</td>
</tr>
<tr>
<td>145</td>
<td>V60</td>
<td>Housing—Household—and Economic circumstances</td>
</tr>
<tr>
<td>81</td>
<td>V57</td>
<td>Care involving use of rehabilitation procedures</td>
</tr>
<tr>
<td>59</td>
<td>V40-41</td>
<td>Mental and behavioral condition affecting health status</td>
</tr>
</tbody>
</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>V codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>V22-23</td>
<td>Supervision of pregnancy</td>
</tr>
<tr>
<td>51</td>
<td>V58</td>
<td>Aftercare and maintenance chemotherapy</td>
</tr>
<tr>
<td>37</td>
<td>V63</td>
<td>Unavailability of other medical facilities for care</td>
</tr>
<tr>
<td>20</td>
<td>V11</td>
<td>Personal history of mental disorder</td>
</tr>
<tr>
<td>17</td>
<td>V68.0</td>
<td>Issues of medical certificates</td>
</tr>
<tr>
<td>12</td>
<td>V15.6</td>
<td>Poisoning</td>
</tr>
<tr>
<td>9</td>
<td>V79</td>
<td>Special screening for mental disorders and developmental handicaps</td>
</tr>
<tr>
<td>6</td>
<td>V18.4</td>
<td>Family history of mental retardation</td>
</tr>
<tr>
<td>2</td>
<td>V66</td>
<td>Convalescence</td>
</tr>
<tr>
<td>0</td>
<td>V68.2</td>
<td>Request for expert evidence</td>
</tr>
</tbody>
</table>

Note. Based on a total of 8,122 contacts

Table 3 presents the breakdown of the 1,407 patients seen by the mental health staff for problems related to specific medical disorders. It may be speculated that "ill-defined causes of morbidity and mortality" represents patients who presented with medical symptoms for which no medical causes could be found. This category may represent a clustering of patients with somatization disorder, depressive symptoms, anxiety, panic disorder, and other conditions. However, further work is needed to clarify the composition of this group. From clinical experience, a referral to mental health related to injury may be primarily related to domestic violence. This data suggests that cross referral from medical practitioners to mental health programs is taking place, and that there is a need for a consultation/liaison model for services between mental health and medical programs. It may also suggest that at least some physicians believed that their patients presenting physical complaints suffered from underlying psychiatric difficulties.

Table 3

Frequency of Patients with Specific Medical Disorders Utilizing the Billings Area IHS Mental Health Facilities—1983

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>ICD-9 codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>371</td>
<td>797.00</td>
<td>Ill-defined causes of morbidity and mortality</td>
</tr>
<tr>
<td>134</td>
<td>800.00</td>
<td>Injury</td>
</tr>
<tr>
<td>128</td>
<td>460.00</td>
<td>Diseases of the respiratory system</td>
</tr>
<tr>
<td>96</td>
<td>710.00</td>
<td>Diseases of the musculoskeletal system</td>
</tr>
<tr>
<td>82</td>
<td>580.00</td>
<td>Diseases of the genitourinary system</td>
</tr>
<tr>
<td>70</td>
<td>520.00</td>
<td>Diseases of the digestive system</td>
</tr>
<tr>
<td>67</td>
<td>360.00</td>
<td>Diseases of the skin</td>
</tr>
<tr>
<td>64</td>
<td>1.00</td>
<td>Viral and parasitic diseases</td>
</tr>
<tr>
<td>60</td>
<td>680.00</td>
<td>Diseases of the skin</td>
</tr>
<tr>
<td>43</td>
<td>960.00</td>
<td>Poisoning</td>
</tr>
<tr>
<td>42</td>
<td>320.00</td>
<td>Diseases of the central and peripheral nervous system</td>
</tr>
<tr>
<td>41</td>
<td>240.00</td>
<td>Endocrine and nutritional disorders (obesity)</td>
</tr>
<tr>
<td>39</td>
<td>784.00</td>
<td>Symptoms/headache</td>
</tr>
</tbody>
</table>
Table 3 (continued)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>ICD-9 codes From</th>
<th>To</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>780.50</td>
<td>780.60</td>
<td>Symptoms/sleep disturbance</td>
</tr>
<tr>
<td>26</td>
<td>390.00</td>
<td>460.00</td>
<td>Diseases of the circulatory system</td>
</tr>
<tr>
<td>25</td>
<td>780.70</td>
<td>781.00</td>
<td>Symptoms/malaise (postviral syndrome)</td>
</tr>
<tr>
<td>23</td>
<td>780.30</td>
<td>780.50</td>
<td>Symptoms/convulsions</td>
</tr>
<tr>
<td>20</td>
<td>570.00</td>
<td>580.00</td>
<td>Other diseases of digestive system (liver, pancreas, gallbladder)</td>
</tr>
<tr>
<td>10</td>
<td>630.00</td>
<td>677.00</td>
<td>Complications of pregnancy</td>
</tr>
<tr>
<td>9</td>
<td>140.00</td>
<td>240.00</td>
<td>Neoplasms</td>
</tr>
<tr>
<td>7</td>
<td>780.00</td>
<td>780.20</td>
<td>Symptoms/coma and stupor—hallucinations</td>
</tr>
<tr>
<td>5</td>
<td>783.00</td>
<td>784.00</td>
<td>Symptoms/developmental delay</td>
</tr>
<tr>
<td>2</td>
<td>780.60</td>
<td>780.70</td>
<td>Symptoms/pyrexia</td>
</tr>
<tr>
<td>1</td>
<td>781.00</td>
<td>782.00</td>
<td>Symptoms/abnormal involuntary movements</td>
</tr>
<tr>
<td>0</td>
<td>760.00</td>
<td>780.00</td>
<td>Conditions of perinatal period</td>
</tr>
</tbody>
</table>

Note. Based on a total of 1,407 number of contacts.

Table 4, involving 400 visits, is presented for completeness. It presents other codes used to classify mental health visits. These codes were recorded into the data system only if no other diagnostic data was listed on the specific patient's visit form. A patient who was coming to the program for psychotherapy for an anxiety-related condition would not be coded as "psychotherapy" under the PCIS system unless the anxiety-related diagnosis was also not recorded on the form. This table is a work load measurement with little reflection on the diagnostic composition of the patient population.

Table 4

Procedures and Other Reasons for Contacts, Billings Area IHS—1983

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>DSM-III codes From</th>
<th>To</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>94.2</td>
<td>94.30</td>
<td>Psychological testing</td>
</tr>
<tr>
<td>7</td>
<td>94.3</td>
<td>94.40</td>
<td>Psychotherapy</td>
</tr>
<tr>
<td>354</td>
<td>94.4</td>
<td>494.45</td>
<td>Group psychotherapy</td>
</tr>
<tr>
<td>36</td>
<td>47.00</td>
<td>48.00</td>
<td>Miscellaneous surgical and other procedures</td>
</tr>
</tbody>
</table>

Note. Based on a total of 400 contacts.
In all, the list of disorders represented by this data is not surprising, except perhaps for the high rates of utilization of mental health services for alcohol-related problems, when a separate treatment system for alcoholism also exists on the reservations in the Billings Area. The low rate of utilization for disorders of childhood is also surprising, given the high frequency of emotional disorders suspected to occur in populations of Indian children on the basis of the literature. From clinical experience in the Billings Area, this relative underutilization may be related to the reluctance of parents to bring even very troubled children to treatment and to the lack of expertise in working with children’s mental health in the treatment system. Only three of the field staff in the Billings Area have had supervised training in child mental health.

It is also surprising that so few patients with organic mental syndromes are seen by mental health. Clinical experience indicates that a large number of these patients come into the health care system, but are seen primarily by non-psychiatric physicians. The lack of referral to mental health of these patients may reflect physicians’ suspicions for poor prognoses and lack of value of rehabilitative efforts in this group. This may reflect the need for continuing education on this subject for Billings Area physicians. The referrals for organic mental syndromes must be contrasted with referrals to mental health for other discrete physical disorders. The high numbers in these other categories of physical illness suggest that physicians place a surprisingly high value on mental health services related to other conditions.

The large number of visits for major depressive episodes is not surprising on the basis of clinical experience. The frequency of the diagnosis of a personality disorder is greater than expected. One must question whether this high number represents a high utilization of services by a few individuals, or a high number of individual cases. If the latter were the case, to what extent may this be the result of mislabeling on the basis of cultural bias in the diagnostic interview, similar to biases identified in psychological testing?

These questions should become possible to address when the MUMPS computer system becomes operational, which will permit the differentiation of discrete cases within the utilization visit figures.

Limitations of service utilization data. Given this data, it is tempting to draw a large number of speculative conclusions about patterns of mental illness in Indian communities. However, the data are subject to so many sources of potential error that it is wise to consider them little more than vague hints at the epidemiology and even the actual patterns of service utilization of Indian patients suffering from major mental illnesses in the Billings Area. Conclusions
about patterns of service utilization in other IHS Areas, drawn from this data would be perhaps even more suspect. Unfortunately, until the MUMPS-based patient data system is operational, this represents the highest quality data obtainable from the IHS PCIS-based mental health treatment system.

Major limitations exist in using currently available service utilization data to draw epidemiologic conclusions. For each major mental disorder, it might reasonably be expected that only a fraction of the local population with that disorder would seek treatment from the IHS or tribal mental health staff for that disorder. A number of variables determine the percentage for each diagnostic entity and for each individual reservation. These include the ability of the patient and his family to recognize symptoms as belonging to a treatable mental disorder. Whether a patient seeks treatment depends upon attitudes toward the service delivery system, and beliefs about the efficacy of treatment for mental disorders, community and patient attitudes about the value of traditional versus "Western" treatment modalities or Western diagnostic and etiological explanations of the patient’s condition. As with all patients, access to treatment resources, misdiagnosis or underdiagnosis of the patient’s condition by mental health or medical staff, and a host of other factors may cause patients with major mental illnesses to fail to come into contact with the mental health reporting system. For example, one might expect a high level of contact for schizophrenics because of the burden placed by this disorder upon the lives of a community or family. Yet, a significant percentage of schizophrenics may be referred to traditional healers or escape the attention of the treatment system if they live in remote, isolated areas, or migrate from the reservation to the cities. In other instances, a larger number of patients suffering from depressive disorders may go unreported because they do not recognize their symptoms as a mental illness, are diagnosed as having a physical illness if they present with a large number of physical symptoms, or avoid treatment for a variety of other reasons. It is, therefore, likely that service utilization data may bear only a minimal relationship to the incidence and prevalence of major mental illness on reservations.

Research on Indian Mental Health

Research on major mental illness among American Indians and Alaska Natives has roughly paralleled the growth of the service delivery system. In the late 1960s and early 1970s, the IHS experienced an influx of psychiatrists and other mental health professionals from the academic and private sectors. As they gained experience in mental health issues of American Indians, publication of their findings brought a surge of interest in and public awareness of Indian mental health. The 1970s was a decade of extensive publication in Indian mental
health, with the National Center for American Indian and Alaska Native Mental Health Research and Development serving as a focal point for research efforts in American Indian and Alaska Native mental health. The White Cloud Journal served as the major vehicle for disseminating information about mental health programs to clinicians and others in the field. Since 1983, however, only one issue of the White Cloud Journal has been published and technical publications on Indian and Alaska Native mental health have been comparatively sparse.

In spite of what seems to be a waning of activity in American Indian and Alaska Native mental health research, a number of isolated efforts in the field exist, such as the landmark *New Directions in Prevention Among American Indian and Alaska Native Communities* (Manson, 1982). Ongoing research efforts and developments in other fields of mental health hold great promise in elucidating fundamental questions in the etiology and treatment of major mental disorders among Indian people. Investigations concerning the relationship of these disorders to other behavioral health issues in this population may also bear fruit. New diagnostic instruments promise to allow sufficient refinement to make possible more accurate epidemiologic work and may provide a mechanism for better design of etiologic and treatment studies. New insights gleaned from the non-Indian mental health literature may, likewise, shed light on the etiology and treatment of major mental disorders among Indian people in the coming years. The improved IHS data system promises to yield valuable information about major mental illness in American Indian and Alaska Native populations in the latter years of the decade.

**Diagnostic instruments.** In addition to the difficulties of relying upon service utilization data to estimate the incidence and prevalence of major mental illnesses on reservations, additional barriers to epidemiologic work in these settings exist. Indian tribes around the country represent a wide variety of cultures with different cognitive and linguistic frameworks influencing perception and experience of the symptoms of a major mental illness. As a result, diagnostic instruments that have been standardized on the general American population may be highly inaccurate when used with patients from another culture. Pollack and Shore (1980), for example, administered the MMPI (Minnesota Multiphasic Personality Inventory) to a sample of 142 Indian people from the Pacific Northwest and found that this instrument was unable to
differentiate between patients who were well and those who suffered from major mental illnesses. Furthermore, the MMPI could not differentiate between even major groups of mental disorders. Work is now underway in several centers to standardize the MMPI for various Indian populations.

The use of indigenous rating concepts to develop measurement scales adapted to specific Indian cultures represents a major advance in the study of Indian mental health. Mohatt and Blue (1982) used these methods to develop a scale to rate tiospaye, or degree of traditionality among members of a Sioux group.

Manson, Shore, and Bloom (1985) and their associates at the Oregon Health Sciences University have pioneered culturally-adjusted diagnostic tools for use with American Indians. When similar methods for developing culture-specific diagnostic instruments were utilized with a Vietnamese-speaking group, a Vietnamese language depression scale was developed which was able to identify a very high percentage of depressed patients with a 15-item scale (Kinzie et al., 1982). This methodology is currently being applied to the development of psychiatric diagnostic instruments specific to a number of American Indian groups in this country. The development and results of these instruments may make possible a whole range of epidemiologic studies of mental illness among American Indians that have, until now, been impossible because of the lack of valid screening and diagnostic tools. The obvious difficulty of these methods is the need to develop new diagnostic rating scales with each culture or community being studied.

Once several of these culturally-based diagnostic scales have been developed in different locations, and with different Indian cultural groups, it will be possible to examine the similarities and differences in various disorders among tribes. The common assumption that mental disorders of Indian people are similar throughout North America can be tested. Indian mental health researchers can begin to distinguish continent-wide from local patterns of mental illness, perhaps opening entirely new areas of investigation.

Epidemiology. In their review of American Indian mental health epidemiology in 1981, Manson and Shore found only three community-wide studies of mental illness of American Indians and Alaska Natives. In one of these studies (Shore, Kinzie, Pettison, & Hampson, 1973), it was reported that 57% of the sample was "definitely psychiatrically disturbed" and that another 15% were classified as "probably disturbed." In another study, Sampath (1973) found a combined group of 37% of the adult population in an Eskimo village to be moderately to severely "sick," on the Health Opinion Survey. Though these data are admittedly very limited, they suggest that the percentage of patients seen by the mental health
system on reservations may, indeed, represent only a fraction of the major mental illness on any reservation. It should also be noted that none of these studies utilized the new methodologies for developing culture-specific diagnostic instruments and may have been subject to several types of errors as a result.

The epidemiology of mental disorders among Indian children is subject to perhaps even greater methodological concerns than among the adult population (Dinges, Trimble, & Hollenbeck, 1979). Dinges and Hollenbeck (1978) identified cultural biases in the Children’s Self-Social Constructs Test, a nonverbal instrument supposedly free of cultural biases, when administered to Navajo children. Beiser (1981) reviewed methodological concerns of Indian children’s mental health epidemiology and found major limitations in the methods of Indian children’s mental health epidemiology studies up to that point. He proposes a multiaxial model for conducting future studies of Indian children that takes into account age appropriateness of behavior, the child’s strengths, and his or her culture, among other dimensions.

Green, Sack, and Pambrun (1981) reviewed the Indian children’s mental health literature and found the same epidemiologic methodological difficulties identified by Beiser and a lack of needed work in the field. They noted problems of abuse, neglect, foster care, school problems, delinquency, substance abuse, and suicide. They conclude from the literature that significant differences in the incidences of various diagnoses exist between Indian children and the general population. A major Canadian/American Indian children’s mental health study is now underway under the direction of Morton Beiser. It is hoped that this study will, perhaps, begin to elucidate connections between the problematic behaviors identified by Green, Sack, and Pambrun and a standard nomenclature of children’s mental health and illness. As has been pointed out by several authors (Beiser & Attneave, 1978; Bloom, 1972), Indian children represent a large fraction of the significant pathology, but have few programs devoted to their mental health problems (children received only about 10% of the mental health services in the Billings Area service utilization data). Beiser and Attneave (1982) found that Indian children are at higher risk for developing a multitude of psychiatric problems than non-Indian children, including their risks for entering treatment. Yet, the mental health needs of Indian children are still probably grossly underserved.

There is clearly a need for community-wide epidemiology studies, particularly studies using culturally adjusted diagnostic and screening instruments. Both narrowly focused and general community prevalence data are needed. Specific studies are needed to answer major questions such as the prevalence of major depressive illness, the prevalence of organic mental syndromes, especially those related to head trauma and alcohol, and the prevalence of schizophrenia. Wider studies need to evaluate the general mental health of communities, and the risks
of developing physical illness, death by suicide and homicide, and accidents in relation to major mental disorder. Such epidemiologic work may provide the foundation for a variety of effective prevention interventions in Indian communities.

The Extent and Quality of Information About Indian Mental Health

Considering the lack of community-based data about the incidence and prevalence of major mental disorders on reservations, the lack of diagnostic instruments that have been developed and standardized for different Indian cultures, and the limitations of service utilization data, it can only be concluded that very little is actually known about patterns of major mental illness among American Indian and Alaska Native peoples. The pioneering efforts of those who have been mentioned in the earlier parts of the chapter have laid a foundation that begins to suggest patterns that may be elucidated over the remaining years of this century. New technology such as the MUMPS-based interactive computerized patient data system may be able to provide vastly improved diagnostic data on the population that comes into contact with the formal treatment system.

Though the methodology has been known for many years, new applications of the technology for creating culture-specific diagnostic instruments and scales by Manson, Shore, & Bloom (1985) and others hold great promise for overcoming the cultural biases of existing diagnostic instruments. Although computerization of the actual instruments will doubtless speed development, the process for standardizing these instruments is rigorous and time-consuming for a system oriented primarily toward delivering services on the local level such as those of the Service Units, where the development of these instruments must take place. It is likely that this process will be slow, in spite of the great promise that it holds for clarifying many of the major problems in Indian mental health and its exportability to other cultures around the world.

Areas for Investigation

Developments, both within Indian mental health and in the broader fields of the neurosciences, suggest a number of areas for potentially productive inquiry in the future. The ideas considered here are logical extensions of existing mental health technology into areas of Indian mental health. The possibility of investigating these questions depends upon a number of factors including the availability of research funding and other resources, the willingness of patients to participate in these efforts, and the speed and effectiveness of communications about significant findings within the Indian mental health community.
The Genetics of Mental Illness

A great deal of work has been done in the last 2 decades on the genetics of mental illness. While this work is far too extensive to be summarized here, it is worthy of note that schizophrenia (Abrams & Taylor, 1983; McGuffin, Farmer, Gottesman, Murray, & Reveley, 1984), affective disorders (Weissman, Kidd, & Prusoff, 1982; Weissman et al., 1984), alcoholism (Cadoret, Cain, & Grove, 1980; Frances, Timm, & Bucky, 1980), anxiety disorders (Torgersen, 1983) agoraphobia (Harris, Noyes, Crowe, & Chaudhry, 1983), panic disorder (Crowe, Noyes, Pauls, & Slymen, 1983), and a number of other psychiatric disorders are now thought to have a genetic component. In some cases genetic links between disorders have been found, such as the linkage of panic disorder, agoraphobia, and major depression in certain families (Breier, Charney, & Heninger, 1984). Other characteristics such as Human Leucocyte Antigen (HLA) typing (Smeraldi & Bellodi, 1981) may hold promise in linking mental illness with specific genetic characteristics, though some questions have been raised about the value of this technique, at least in affective disorders (Suarez & Reich, 1984). Another promising biological assay is the measurement of platelet monoamine oxidase activity in psychiatric disorders (Baron, Levitt, Gruen, Kane, & Ansis, 1984). Of particular interest to Indian mental health are the studies linking alcoholism with other psychiatric disorders, especially affective disorders (Behar, Winokur, & Berg, 1984).

Little, if any, work has been done on the genetics of major mental illnesses among Indian people. Conversations with several IHS psychiatrists in different parts of the country suggest that very different patterns of some mental illnesses may exist among different Indian cultures and gene pools. For example, in the Billings Area, panic disorder and agoraphobia are frequently encountered, and have also been reported in Alaska (Hudson, 1982). Workers in other IHS Areas have remarked on their impression that when panic disorder is seen in their Area, it is almost always among Indian people from a Plains group, and almost never from one of the tribes in their Area. The question remains as to whether this difference, if confirmed, represents a difference between these two gene pools or a culture-mediated difference in the patient’s recognition and expression of symptoms.

Perhaps the most fertile ground for genetic investigation is the study of the genetics of affective disorders among Indian people. Clinicians working on reservations have noted what appears to be familial patterns in the transmission of affective disorders. Work on confirming these observations must await the development of valid diagnostic instruments. However, given the possible relationships among affective disorders, alcoholism, somatic presentations of
depressive symptoms, and other major health problems faced by the Indian people, the genetics of affective disorders in this population certainly merit rapid and extensive research for economic reasons and the health of the Indian people in general.

Given the findings of familial patterns of alcoholism noted above, another potentially highly productive field of inquiry may be the exploration of familial patterns of alcoholism among Indians. If both familial and nonfamilial patterns of alcoholism exist in this population, it may lead to findings about more effective treatments for subgroups of alcoholics in this population.

A wide range of studies of the familial transmission of mental illness among American Indians are waiting to be carried out. Though this is potentially an area of study that could be of great long-range benefit to Indian people, an understandable reluctance of Indian communities to participate in these studies may be expected due to the lack of short-term therapeutic benefit expected from such studies, and due to fear of having their communities identified with particular disorders.

The Biology of Mental Illness Among American Indians

Over the last several decades, much of the central work in the mental health sciences has concerned the biological basis of various mental illnesses. Neurotransmitter chemistry, receptor physiology, and functional neurophysiology have all been the subjects of intense research in the neurosciences. This research has contributed significantly to our understanding of human behavior in health and illness. New developments such as positron emission tomography and biological markers for depression and other mental illnesses hold great promise for linking aspects of human behavior with changes in the brain and body. These discoveries may potentially have a major impact upon the mental health of Indian people in the future, as well.

Up to this point, little biological psychiatric work has been done with Indian people. The lack of appropriate diagnostic scales with which to compare biological data has been a major drawback for this type of research. In addition, work has been slowed due to investigators' appropriate sensitivity to issues of the use of Indian people as experimental subjects. Nevertheless, this work is very much needed and may be of major benefit to the treatment of Indian patients.

For example, nothing to date has been published on the systematic use of biological indices of depression with Indian people. In several cases in the Billings Area, the dexamethasone suppression test (Carroll et al., 1981; Greden et al., 1983) has been used to help differentiate potential diagnoses of depression from other illnesses, particularly geriatric dementias. Although this test is by no
means a perfect biological indicator of major depression, the ability to perform this test in small, isolated facilities makes its use particularly interesting for the IHS programs. In a very limited number of cases, this test has proved valuable, when used along with interview, physical examination, and other laboratory data (such as liver function tests and hematological indices to help rule out hidden alcoholism, one of the sources of erroneous results of the dexamethasone suppression test for depression). Although studies are needed to demonstrate the validity of this test for Indian people, the need for diagnostic information in a clinical setting makes this test particularly enticing. Indeed, in the small number of cases given this test, the response to treatments for depression was gratifying.

To date, no reports—even anecdotal—of the use of the thyrotropin (TSH) response to thyrotropin releasing hormone (TRH) as a biological measure of depression (Krog-Meyer, et al., 1984; Loosen, Kistler, and Prange, 1983) in Indian people have been found.

Work needs to be done to standardize these tests against proven measurement scales, such as those discussed above. Standardizing these biological tests may provide a vehicle for diagnosis, particularly of depression, in patients who might otherwise be missed through cultural biases of treating physicians and mental health staff. After standardization of these biological tests against culturally adjusted diagnostic instruments, future efforts to identify these disorders by using biological measures could perhaps circumvent the need to develop complete culturally-based diagnostic systems for each Indian culture. However, this could only happen after substantial validation studies.

A number of neurotransmitters have been implicated in the pathogenesis of mental illnesses in the last several years; among others under investigation are norepinephrine, serotonin, GABA, and dopamine (Gerner, et al., 1984; Hamburg, Elliott, & Parron, 1982). We are far from the time when this knowledge will be directly applicable to the delivery of mental health services to Indian people. We lack the descriptive and genetic tools currently to even begin to consider the neurobiology of mental illnesses of Indian people, except perhaps in arriving at the most inductive kind of working psychopharmacologic hypotheses.

Although a number of years away, questions that present themselves for the future include the question of the basic biology of depression among Indian people. Is there only one subtype of depressive illness present among Indian people or are several neurotransmitters involved with different Indian groups? Are entities such as panic disorder mediated by the same neurochemical abnormalities as the non-Indian population? A much clearer understanding of the neurobiological mechanisms of these disorders is needed before it becomes productive to address these questions in Indian people.
Personality Structure, Classification, and Development

If the diagnosis of relatively well-understood mental disorders, such as affective disorders with a well-known set of biological symptoms, remains difficult in Indian populations, surely the fields of personality development and classification must be considered almost completely unexplored. Since the time of Freud, personality theory and the taxonomy of personality characteristics has been based on work with people from the mainstream European and American cultures. Indeed, the invalidity of the MMPI with Indian patients suggests that at least the standard classifications of personality characteristics are not valid when utilized to classify personality characteristics of Indian people. Perhaps one of the most interesting and potentially controversial areas in Indian mental health is fundamental questions of the interaction of culture and personality.

The study of personality taxonomy and development for all its formidable as a scientific task, may yield very significant information that will be of value not only to the overall health of the Indian people, but perhaps to psychiatry and psychology as a whole. The findings of Pollack and Shore (1980) that the MMPI could not distinguish Indian people with specific mental disorders from each other and from well-functioning, presumably "well" Indian people suggests that culture may, indeed, have a significant effect, at least on cognitive manifestations of personality. In their small study, this cultural cognitive effect was sufficient to generate an "Indian" MMPI profile independent of psychiatric status of the individual. Attempts to develop personality inventory instruments, using culture-specific methodologies, may perhaps yield answers to whether any "universal" personality descriptors exist or whether it is meaningless to consider personality taxonomy outside of the "emic" context of the specific culture being studied. However, as a first step, instruments would need to be developed for each specific cultural group being studied that could differentiate normal from pathologic functioning within the specific context of a culture.

As Green, Sack, and Pambrun (1981) noted, the problem of classification of pathological from normal development in Indian children is substantial. They conclude,

...for the culture itself will need to define who is deviant and what symptoms represent deviancy. The error of fitting the American Indian child into a system that is not relevant has been committed too often in the past. It is important that the error not be repeated. (p. 23)

The problem of assessing personality development in Indian children is prone to the same difficulties as the assessment of adult Indian personality characteristics, except perhaps more so. Our understandings of the presentation and resolution of different developmental problems and phases for children are largely dependent upon the way that these developmental issues are presented to the child in the context of the traditional European/American family. For
example, child rearing in the extended family (now common in a number of Plains cultures) presents different developmental problems to the child than the family structure upon which much developmental personality theory is based. It can now only be guessed how the different family structures, linguistic patterns, child-rearing customs and child-rearing attitudes, present among the different Indian cultures, contribute to the development of various personality structures. However, the study of these questions may reveal how much of American/European developmental personality theory is indeed universal and how much is valid only within the context of the mainstream culture.

The relationship of personality to health beliefs and health habits is of particular concern when considering the behavioral health problems facing Indian people. Currently, approaches to behavioral health problems among Indian people are assumed to be information deficits and the current approaches to alleviating these problems are educational, through showing films and offering a variety of experimental approaches for modification of behavior. These approaches are used with health problems ranging from the prevention of fetal alcohol syndrome, alcohol and drug abuse, and diabetes treatment compliance problems to accident prevention and even preventive dentistry. If the information sharing approaches are less than fully successful, it might be anticipated that further answers to these behavioral health problems lie in the study of personality characteristics, cognitive styles, and the relationship of these factors to different approaches to behavior change. This technology could represent an entirely new approach toward the design of primary and secondary prevention interventions for major behavioral health problems in Indian people. Again, however, the ability to identify individual personality and cognitive factors that place an individual or group at risk for specific behavioral health problems must be predicated upon the development of valid personality and cognitive stylistic assessment instruments for each culture being studied.

**Chronic Mental Illness**

The identification of chronic mentally ill Indian people suffers from the same definitional problems that plague other issues in Indian mental health. To be sure, Indian people who fit the diagnostic criteria for schizophrenia of the DSM-III, including the 6-month durational requirement, exist and are present throughout the various tribes. However, the applicability of these diagnostic criteria to Indian people remains to be proven. Furthermore, chronic mental illness is difficult to define if more than persistence of psychotic symptoms is used in the definition. Social functioning is difficult to measure on reservations in which unemployment is high and alcoholism is often found in conjunction with symptoms of other major mental illnesses. Chronicity of illness is difficult
to assess in an environment in which other factors such as attitudes toward the service delivery system and the lack of treatment resources designed for chronic mental illness influence use of and contact with the treatment system. The definition of what constitutes a chronic mental illness on reservations is, indeed, problematic. Perhaps for this reason, an examination of the literature reveals no articles on the treatment of American Indian chronically mentally ill patients. Indian patients with chronic mental illness exist, at least as evidenced by the service utilization data presented above, assuming that the durational criteria for schizophrenic symptoms has been met in these cases. Clinical experience tends to suggest that each reservation and urban setting with a substantial Indian population appears to have a population of chronically mentally ill Indian people who, at least superficially, appear to be suffering from schizophrenia. The long-term therapy and management of these people has not been explored in the literature, and at least on the reservations, few, if any, treatment programs geared to their special needs exist. At least on the northern reservations, treatment alternatives such as day hospitals, case managers, partial hospitalization, daily living skills training, and other treatment programs designed to meet the needs of the chronically mentally ill are very rare or altogether nonexistent.

In addition to schizophrenia, clinical work has demonstrated that, at least in the Billings Area, other populations of patients with chronic mental illness exist whose needs are largely unknown. On routine screening mental status examinations, it is all too common to identify patients with various degrees of organic mental syndromes. The presumed etiologies range from alcohol-related etiologies to localized traumatic damage following automobile accidents and other head traumata. Again, no programs aimed at the systematic assessment and rehabilitation of this subgroup of chronic patients has been found.

Populations of patients with what appear to be personality disorders exist in our service utilization data. However, lacking objective social functioning criteria and culture-specific diagnostic instruments, it would be hazardous to speculate on the nature, extent, or treatment alternatives available to this group. This population, which appears to be chronically mentally ill on the basis of impaired social and vocational functioning but who are lacking chronic psychotic symptoms, is a diagnostic puzzle. Accurate classification of this group must await the development of culturally based definitions for adequate social functioning in reservation communities and culturally adjusted personality assessment instruments.
Because the technology for the care of the chronically mentally ill is specialized, few reservations are able to afford the facilities and staff necessary to provide for the needs of the reservation-based chronically mentally ill. Technology to treat these groups of chronic patients in culturally appropriate ways and in these often isolated rural settings has yet to be described in the available literature.

Other Major Mental Illnesses

Service utilization data and clinical experience indicate that a far wider range of major mental disorders exist among the different groups of Indian people than is often considered. In the Billings Area, panic disorder with and without agoraphobia, eating disorders that appear to fall into the familiar classifications of anorexia nervosa and bulimia, anxiety disorders, somatization disorder, and a host of other familiar and less familiar disorders have been encountered. The reporting of these disorders among Indian populations does a great deal to further the overall understanding of major mental disorders among Indians and may even shed light on the etiology and diagnostic validity of diagnostic classifications in other cultures. Yet, case reports and systematic investigations of these disorders among Indian people are extremely rare. A systematic understanding of all of these disorders is needed and will require a more extensive effort at sharing information and basic research than has been possible to date.

Prevention and Therapeutic Modalities

Psychopharmacology

There have been few studies about the responses to different treatment modalities of Indian patients suffering from major mental illness. Yet, an extensive treatment network exists of IHS and tribal mental health staff who are using a variety of interventions to alleviate symptoms of these disorders. In the absence of firm diagnostic criteria for most major mental illnesses among Indian people, a variety of psychopharmacologic interventions are routinely used throughout IHS. These include antidepressant medications for depression, neuroleptic medications to control psychotic symptoms, and benzodiazepines for anxiety and sleep problems. Though often highly beneficial to patients, the use of these medications deserves further study.
It is well known that different antidepressant medications have different neurochemical effects. The newer antidepressants have unique and much more specific mechanisms of action in comparison with the older medications. If one biological type of depression is found to be predominant in Indian people, certain antidepressants might be much more effective than others for Indian patients.

An area of controversy among the clinicians of the IHS is the use of benzodiazepines in the treatment of anxiety and sleep disorders. Even though IHS physicians at some facilities regularly prescribe benzodiazepine "minor tranquilizers," other clinicians maintain that these medications are almost never helpful. These clinicians argue that sleep disorders and many presentations of anxiety among Indian patients are almost invariably associated with a major depressive episode for which benzodiazepines are not the treatment of choice. In other cases, anxiety and sleep disturbances may be associated with alcohol withdrawal, for which benzodiazepines may be indicated, but certainly not in the unsupervised "bulk" prescription that can be abused and contribute to an addiction problem.

Monoamine oxidase inhibitors, as well as antidepressants, are used in some locations to treat panic disorders. Yet, while results appear to be very promising, no systematic evaluation has been made of the efficacy of these medications for panic disorders in Indian patients. Likewise, the long-term use of lithium, carbamazepine, and neuroleptics in controlling manic behaviors and other psychoses, if these disorders exist among Indians, has not been evaluated. Since these medications are in use, studies of their efficacy should not be difficult and may yield some findings of significance to the nationwide treatment system for American Indians and Alaska Natives.

Psychotherapy and Counseling

Although it has been noted that Indian patients may have a strong initial mistrust of non-Indian therapists (Lockart, 1981), little is known about the effectiveness of various forms of psychotherapy for mental illnesses among Indian people. At least in the Billings Area, many mental health professionals and paraprofessionals have adopted an informal "counseling" style of therapy that resembles general supportive psychotherapy. Although this nondirectional style of therapy may have been adopted in response to a perceived cultural resistance to more structured and directive styles of therapy, the effectiveness of this style of therapy remains to be proven.
The differential effectiveness of cognitive, psychodynamic, behavioral, existential, and other forms of therapy presents an interesting area for investigation. Likewise, the nature of therapeutic relationships between Indian therapists and Indian patients and non-Indian therapists and Indian patients may be a worthwhile area of study.

It is commonly held that Indian patients do not do well in structured group therapy settings. Various experiences in service units appear to indicate that this is not true. At one of the service units in the Billings Area, under the direction of an Indian mental health professional, a structured group of panic disordered, agoraphobic patients has met with great enthusiasm and seeming success for several years. Likewise, another service unit in the Billings Area has had marked success with therapeutic groups based on traditional activities. Group therapies and other therapies such as couples and network interventions for extended families deserve investigation.

Prevention Interventions

A wide variety of prevention interventions such as those described in New Directions in Prevention Among American Indian and Alaska Native Communities (Manson, 1982), are currently being used with the intention of preventing or alleviating major mental illness among Indian people. In addition to the interventions described in the literature, a wide range of prevention interventions are being attempted throughout the country on a local level. Because of the flurry of interest in this area, many programs have not yet had the opportunity to present their projects and to study their outcomes. Nevertheless, the study of outcomes and the evaluation of the methods of these programs remains vital. Successful mental health prevention programs deserve to be duplicated, while those that fail to produce the expected prevention goals need to be modified or discontinued. Only by examining outcomes of these programs can their effectiveness be measured. Given the number of these projects now being initiated, a central clearinghouse to provide technical support for the development and study of outcome measures would be valuable.

As complex issues of the causes and prevention of major mental illnesses in Indian populations are investigated, the role of stressful life events in the lives of Indian people is almost certain to be a significant factor. The role of culture in establishing the impact of stressful life events is a critical area for investigation. One study (Liberman & Frank, 1980) demonstrated that Miccosukee Indians perceived different amounts of stress to be associated with particular life events than other groups. Another study (Morigeau, 1979) has demonstrated a significant correlation between stressful life events and injury on the Lummi Indian Reservation. On reservations with relatively poor life expectancies, the
possibility of a downward spiral of risk must be considered. With high rates of accidents on some reservations, clinical experience suggests that few families are without significant losses over the course of a year. If the Lummi findings hold for other Indian groups, the high frequency of death and disability may increase the risks of surviving family members to similar accident death and disability. At least in theory, this process could produce extraordinarily high-risk families. The question of how to intervene with these families once identified could be very fertile ground for investigation. Likewise, the role of stressful life events in the development of other illnesses such as diabetes, obesity, hypertension, or arthritis remains to be investigated.

Major Mental Illness and Behavior Among Indian People

Since such a large portion of the health problems that confront Indian people have a behavioral component, it is somewhat perplexing that so little systematic knowledge is available on issues of major mental illness that must constitute at least a portion of the epidemiologic substrate of these behaviors. In large populations, behaviors such as suicide, interpersonal violence, self-destructive behaviors, accidents, alcohol and drug abuse, and other major behavioral health problems might well be assumed to have a substantial statistical component of major mental illness. It is likely that the methodological problems of developing accurate screening tools may have contributed to the lack of this vital information. If this is so, we may anticipate a significant contribution of this new technology to our understanding of major mental disorders to overall health care for Indian people, beyond the immediate care for major mental illnesses, alone. The development of culture-specific diagnostic and screening instruments may well be the key to a new range of technologies to improve the health of Indian people.

However, even with the development of these new technologies, a substantial effort must be made on a number of fronts before this technology may have its anticipated positive impact. The new screening and diagnostic instruments represent only a tool for carrying out other studies. The simplest of the next generation of studies must certainly include treatment outcome studies of psychopharmacologic and psychotherapeutic methods currently in use, according to culturally appropriate diagnostic and treatment outcome criteria. The next generation of studies may reasonably include the beginnings of the identification of mental illness risk factors as they relate to the development of other behavioral health problems.
Barriers to these needed studies may be anticipated. Without fairly early positive clinical impact, the communities that have been the sites for the studies may become understandably disillusioned with this basic research. Given the pervasive mistrust of research in some Indian communities, a lack of beneficial therapeutic impact of this work could make further advances very difficult for many years thereafter. Even now, significant work may have to be done to convince some reservation communities of the value of research before studies like those described here are attempted.

Another barrier to the furtherance of these efforts is inherent in the service delivery system. Because of the basic structure of the IHS and tribal health programs, the system is oriented toward providing immediate clinical services at the Service Unit level. Because of the high level of organizational complexity, clinicians in nonservice providing roles are most often occupied with heavy loads of administrative and program-related duties so that few positions in Indian Health Service are devoted primarily to research, particularly research in major mental illness. The knowledge of the basic sciences of Indian mental health that currently exists has generally come from academicians outside the IHS and tribal health system proper. For a variety of reasons, access by these researchers to the service delivery system has been, at times, difficult and sporadic. If we are to realize the potential of the new mental health technologies, a better, more consistent relationship between academic mental health researchers and the service delivery system must be developed. Furthermore, clinical staff must be encouraged in this partnership to report and develop their clinical observations into studies and case reports. The basic information-sharing network about Indian mental health must also be strengthened through a variety of vehicles ranging from publications to national meetings. These needs may be difficult to meet in a time of government austerity and reduction in funding.

Conclusions

There has been significant pioneering work in Indian mental health over the last 2 decades. The service delivery system has expanded significantly and a good deal of basic research has been done. As a part of the basic research in Indian mental health, the need for adapting diagnostic instruments to the cultures of the patients has been identified and new technology is being developed to meet this need. However, the difficulty in developing this technology to meet the mental health needs of Indian people has placed the research and clinical treatment of major mental disorders of Indian people years behind the knowledge of mental illness of the majority American culture. A number of major technologies which exist in the larger fields of the neurosciences cannot be accurately applied to Indian people because of these difficulties. Nevertheless,
the ability to answer major questions about Indian mental health should soon become available, leading perhaps to a new generation of research findings that may have a major impact on the overall health of the American Indian and Alaska Native people.

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Discussion

Dr. Shore: I really enjoyed the opportunity to review your paper which is a very nice overview of the research needs in the area of major mental disorders. I’m going to make two types of comments, one responding directly to the paper and the other taking generalizations from the paper.

In general, we have to be careful not to be too critical of the Health and Behavior volume and its lack of applicability to American Indians at this stage. I think it’s a building block. If we become too critical of it, we reject a lot of solid conceptual and methodological thinking that went into it, and run the risk of throwing the baby out with the bath.

Let me make two comments from that point of view on the presentations this morning. The stress theory is very important, but it clearly should not be the dominant theory. There should not be a dominant theory as we look into etiologies, interventions, and treatments. We need to think about genetics, early environmental influences, culture, biological theories of illness, and mental and physical disorders. Likewise, labeling theory keeps us honest, but again we run the risk, if the critique from the point of view of labeling theory is too harsh, of becoming defensive and saying, "Well, we really don’t have anything to offer American Indian communities from the point of Western biomedical science, because things are so complex in all these tribes and with all these problems, we just can’t solve the problems, so therefore we won’t get involved." The major goal is to involve more people in this research, and there is a risk that, unless we open the doors and get more people involved, we’re going to continue a trend that excludes, in this case American Indians, and in some cases, more broadly, minorities from the mainstream of many exciting, new biomedical research efforts.

Let me shift specifically to Dr. Neligh’s paper. One critical area is who is providing the services. Gordon makes that point early in his paper. It’s similar to the mental health delivery system for all of us in this country. It’s not the mental health professionals who primarily are providing the service. It’s not the alcohol programs that are providing it, either. It’s the general medical clinics. They are not a different group of alcoholics who go into the alcohol programs, they all come through the general medical clinic first, with many different physical and alcoholic problems that often have not been recognized. We’re treating the same people in multiple settings without communicating and without coordinating the services.
From the research perspective, "who's providing the services" relates to alcoholism treatment and prevention in Indian communities. There have been between 100 and 200 such programs, yet there has been little published from these programs, which have expended millions of dollars over the last decade. You can count the articles on one hand in terms of how much new knowledge we have about treatment.

An important observation Gordon makes is that there have been no or few general tribal national meetings dedicated to sharing technical and clinical information. That's been a major problem. You can't keep people at speed or bring them up to speed if you don't have the resources to get them together, especially in Indian country. It's a major resource deficit, and a good reason to be especially appreciative to Dr. Jim Ralph, and earlier, focusing on prevention, Dr. Steve Goldson for giving us the opportunity to get together and begin to create networks to plan research.

Service utilization systems and counting systems are extremely important. If there is going to be an effective research program in mental disorders for American Indians, we've got to overcome the lack of an effective data system. Service utilization is only one way to focus research, but it's an important way. The majority of the people who control the system have not been mental health people. I know a lot about it; I helped design the first system that failed, the mental health component of the Ambulatory Patient Care system. Dr. Bill Hunter knows a lot more about it than I do. But we've got two separate data systems, and neither one at this point, from my point of view, are satisfactory to help us get into evaluation of treatment utilization and effectiveness.

Gordon becomes a bit romantic about the MUMPS. I think MUMPS is going to help us, but I think you wax a bit too positive in looking for a new computer system to really provide all the answers. We're still troubled with the fact we've got two different data systems operating within the 10 offices of Indian Health Service, and I don't see a consensus about where to go or what the mental health component should be.

Mental health utilization rates were 2% percent of 3 million visits in 1980, which was about 60,000 mental health contacts, and that's grossly under-represented. Our current data base on service utilization is unreliable, both underreporting and excluding systems that aren't in the Indian health data system, like the alcohol treatment programs. It also is limited by an unreliable diagnostic process.
A new, separate system in the Billings Area recently reported 17,000 annual visits. If IHS data are roughly correct, then you are seeing roughly one third of all the mental health contacts in the country in the Billings Area. So you know there is some tremendous underreporting in many service areas which have larger populations. Another problem is counting individual patient contacts and not individual patients, so it’s difficult to draw reliable conclusions about service utilization.

The paper gets into the issues of working with the concepts of alcoholism. The role of the mental health staff in working with alcoholism is secondary to the role of the separate tribal alcoholism programs, which see the large majority of contacts for alcoholics in the treatment systems. I think they’re the same people. They’re going in and out of both systems, they’re being counted multiple times, and there’s very little coordination. Ultimately, for alcohol or alcohol behavior related research, we have a major systems problem.

With the appropriate movement towards self-determination and the tribes assuming control of alcohol programs, as they may assume some health programs under P.L. 638, the problems for research coordination are amplified tremendously. Some tribes appreciate the value of research, others don’t and it really creates major logistical problems. We need to focus on overcoming those problems in a way that we can do both relevant research and increase the credibility of researchers with tribal governments.

A comment is called for on the lower rate of utilization for child disorders. You quoted the relevant studies but I think your conclusion was too narrow in suggesting that the relative underutilization may be related to the reluctance of parents to bring even very troubled children to treatment, and/or lack of expertise in working with children’s mental health in the treatment system. I think that’s only one explanation. There are three or four equally plausible explanations, and it’s probable that there are several factions operating simultaneously. One, Indian parents may not see the behavior as relevant to the mental health treatment system or medical clinic. Two, they don’t identify the behavior as a problem. Three, there’s a tremendously rapid change in a lot of these behaviors, and the changes may be outpacing the development of the service delivery system. An example of the latter was commented on earlier by Jerry Mohatt in terms of the lack of utilization of foster homes for Alaskan children.

The third area you comment on is the culturally valid psychiatric diagnostic methods for selected disorders, if not multiple disorders. I wanted to clarify something on the epidemiology study you cite. When you use the quote of 57% incidence, that’s derived from a methodology that the Leightons developed in Nova Scotia in Sterling County. This method gives a rating of impairment independent of the type of disorder. It’s important to remember that in our definition of a psychiatric diagnosis, we include all situational reactions, minor
and major, and all psychophysiological reactions, so we’re including arthritis and an epidemic of peptic ulcer. If you exclude those things which are not in the data base reported in the recent ECA report, you don’t get that kind of high impairment. That is a more accurate way to make the comparison, and it doesn’t sound so exaggerated in terms of percentage.

In talking about the extent and quality of information about Indian mental health, I disagree with your conclusion that very little is actually known about patterns of major mental illness among American Indians and Alaska Natives. This was a major point in our review of the IHS mental health programs. We know a lot. We know far more than we can implement in terms of designing additional research projects or service projects. One of the major problems in the mental health review that the Indian Health Service initiated and in which a number of us participated in Portland in January, 1984, was that we concluded that the development of service delivery systems, for the chronic mental patient as an example, were far behind in the IHS compared to the concepts of comprehensive community mental health serving the majority of Americans. We know a lot more than we have implemented, and we have to be careful not to state that we know less than what we do. We have to be precise in stating what we know and what we don’t know, but we run the risk of doing ourselves a disservice, especially as we move to research.

Now, the challenge for research is to match the high priority areas with the available research methodologies. It’s not what areas are interesting to research; it’s what areas are interesting in which we can do research over the next 3 or 4 years based on the available methodologies, the political acceptability of tribal councils, and the resources we can obtain.

Gordon highlights eight topics for future research. Let me throw a couple more in to present the priorities that this group needs to focus on in terms of the match among methods, political feasibility, and multiple, very interesting areas that we as experts in minority/Indian mental health think should be the key studies for Indian mental health over the next 5 years: (a) the genetics of mental illness; (b) the biology of mental disorders among American Indians; (c) personality structure and classification, which Gordon commented on at some length; (d) chronic mental illness; (e) other major mental illnesses such as generalized anxiety, phobias and panics, and cyclothymic patterns; (f) psychopharmacology; (g) psychotherapy and counseling, including the possible applicability of specific psychotherapy techniques in Indian country such as cognitive therapy, interpersonal therapy, and specific behavioral techniques; and (h) preventive interventions. In regard to the latter, I think your list is too narrow. You talk about prevention of high rates of accidents. I would add adolescents, school drop-outs, substance abuse... We need a broader list. Would we add grief for widows? One of the comments this morning was that grief is a major issue. I
think it is, and NIMH just published last month a very nice, up-to-date review on grief, and intervention and prevention around concepts of grief and various ways to work to prevent unresolved grief reactions. If it's a major problem with American Indians, should we be studying it and launching a specific prevention initiative in that area?

I would add two additional areas. One I probably would put first is the development of reliable rating systems that are culturally valid. My bias is that we have to start with DSM-III, with the components of DIS, because we are being taught so much by other studies throughout the country. But before we go to genetic studies, or before going to treatment efficacy studies, we have to move as quickly as possible to know that what we're counting is accurate, or what we're trying to prevent can be measured.

The issue of epidemiology should be emphasized. I am convinced now that the unfeasibility of epidemiology studies in Indian country is so overwhelming, it's probably not the way to go. I think we can draw correct inferences based on the recent ECA studies, and the way to go is case control studies and valid measurements.

The question, and I think our dilemma, is, "Is our basket half full or is it half empty?" I think we have to take the position our basket is half full, not half empty. It's not how inapplicable these techniques are to these cultures, it's how we can build on the advances that have been made in the last decade and make modifications that will lead to progress.

I would conclude by giving Shervert Frazer's four points from the presentation he gave in Denver last month. If we have eight priorities for research, we have to see those in the context of NIMH priorities. Whatever we do has to be fundable, has to pass peer review, has to be data-based, and we know we have to match the needs of the tribes from the east, such as NIMH, with the needs of the tribes from the west. Shervert Frazier gave four priorities in his presentation: violence, chronic patients, children, and prevention. Now, those overlap in a variety of ways with the things that we're talking about here, but I think we have got to take an aggressive and pragmatic view in matching the priorities with the resources we know are going to be available through NIMH and the political process.

Dr. Levy: When you make the statement that these measures are not doing a good job in Indian country, if you go back and read the literature of the studies that have used them and compare them to the studies that have done direct diagnoses, you find they're not doing a good job in the nation generally. It's an over-rapid application of them before they have been tried and proven in our own population. I would support Jim in saying that we mustn't be too afraid of the cultural difference so much as our own skills in evaluating what we're getting. This is what we have to focus on.
Dr. Neligh: In the overall definition of the chronic mentally ill, there are a number of operative definitions. They are a very specific group of people who meet Schneider's criteria for schizophrenia and have durational criteria. Some of the other definitions of the chronic mentally ill are broader than that and involve social deterioration in 6 months' time and vocational factors and a number of other parameters. How is it possible to measure that group when the unemployment rate is 80% on a lot of reservations?

Dr. Shore: Agreed, but one has to be specific about which definition you're using and which criteria apply and which do not apply.

Dr. Levy: In a clinical diagnosis, not in a field survey, do you think that anybody would just be implying to the person that because they were unemployed that's important? What you're looking at are the field survey measures, which are very gross and don't do well.

Dr. Neligh: I was looking at both the research criteria and the field criteria. How you define that population on reservations was my chief concern. Is it a group of unemployed people who have poor social and interpersonal skills? That's a tricky group of diagnostic criteria to assess for adequacy of functioning.

Dr. Shore: Well, if you look at the DIS as currently implemented in ECA studies, the diagnosis of schizophrenia is very strict. Those behavioral criteria are strict enough to include additional issues of social functioning, and I think we have to be careful to distinguish that, lest we say we don't know anything, because I think we know a lot.

Dr. Schulz: As I was listening to both of you, it came to me that the distinction between culture and other sociodemographic factors, for example income, becomes very hazy. It becomes very difficult to differentiate whether we're talking about cultural phenomenon or whether we are just talking about the fact that people generally with low incomes, low education, etcetera, have all kinds of problems, or have high counts with respect to psychopathology indices. What does the comparative research tell you with respect to whether or not we're talking about cultural phenomenon?

Dr. Levy: A number of things are due to socioeconomic status, pure and simple, there's no doubt about it.

Dr. Shore: I think Gordon and I should avoid that debate, because the topic of his paper is research in the major mental disorders. Clearly, socioeconomic status, and the pressure and stress of poverty and many other life stresses, are very important in terms of people who do and do not have major mental illness. But we are talking about a tremendous explosion in research methodologies for the significant major mental illnesses, I'm talking about major depressions and schizophrenia. I also think we have to look at alcoholism and substance abuse. I
agree completely with your comments on how difficult it is to get into personality disorder issues. I think that’s not the right place to start, just as I’m not sure community epidemiology surveys offer the right place to continue, because of the issue of feasibility.

Dr. Dinges: Jim, I was curious about your comments on not doing ourselves a disservice by talking about things we don’t know. Were you talking about a knowledge application lag on a limited body of knowledge, or do we really know that much more than I think we do?

Dr. Shore: I’m talking about a methodological application lag more than a knowledge application lag. I think in the last 10 years we have seen tremendous advances in research methods from a variety of viewpoints: stress models, genetic models, family studies, biological models, clinical effectiveness evaluations, and the general behavioral sciences. Many of those techniques are now, and have been for the last 3 or 4 years, available for investigation with American Indian patient groups and yet have not been applied. The techniques are there; the research is not being done.

It’s an issue of feasibility, not an issue of having the right models or the right knowledge or the right methodology. There is a lot we don’t know, but there is a lot we know and can’t apply or are not applying in mental health research because of the feasibility questions. Gordon’s list of those eight areas is a good list to start with. We don’t need to spend as much time inventing new wheels as getting some of the wheels we’ve got to roll.

Dr. Dinges: I was curious about your suggestion that the stress/coping models ought not be the reigning models. It seems to me they allow us to look at a much broader set of issues than do models of psychopathology and also to incorporate a much wider range of dysfunctional behaviors, disease entities, and social pathologies that we really haven’t explored to any great degree in Indian mental health research.

Dr. Shore: Let’s assume there is a small group of people affected by a genetically determined set of mental disorders, non-Indian and Indian. It’s going to be important for prevention to understand those as well as we can. The stress that those people experience will only determine how early their symptoms develop and the pattern of their symptoms, but not whether or not they have the illness. If you use a stress model, I think you will potentially miss those disorders and their etiology. I think a stress model is absolutely essential, but from my point of view, is not the integrating model. I think it leaves out many essential determinants of health and behavior. It has to be included, but for me it cannot be the guiding light.

Dr. Mohatt: Well, it sounds like what you’re saying, then, in terms of major medical disorders, is that among the Indians you find a 100% biomedical genesis model and that, therefore, other models are seen as anachronisms.
Dr. Shore: Not at all, but I wouldn’t buy exclusively a stress model.

Dr. Mohatt: So you don’t agree with my interpretation of what you said?

Dr. Shore: No, I don’t. I think you’re trying to make it too narrow. I think you have to integrate those essential concepts. I think the concept of stress, while Norm attempted to present it as a comprehensive model, is thought of in a much narrower way by many people who use it.

Dr. Dinges: It’s not thought of in that narrow a sense by contemporary theorists. In fact, I’m suggesting it because it might be a better model that allows one to look at many more phenomenon that can contribute to negative health outcomes including mental health outcomes.

Dr. Shore: Well, I see it as misleading. It’s obvious we have a debate there.

Dr. Dinges: It depends upon how you articulate the model, how much you allow into the model. I don’t see it as exclusionary in any case. I see it as expansive and incorporating a lot of variables that have not been included in past studies of health and behavior relationships among Indian and Native populations.

Dr. Shore: I think it’s a very seductive model for minorities, because we are dealing with racial discrimination. We don’t disagree on that. We’re dealing with tremendous pressure from poverty in many cases. We are dealing with all kinds of stresses on their lives, and it’s very seductive, I think, to say that a stress model therefore explains behavior and illness.

Dr. Kunitz: Isn’t your model equally seductive? I mean, it lends itself to the notion of a tight fit, right?

Dr. Shore: What model?

Dr. Kunitz: Well, the notion of a biomedical cause of major mental illness.

Dr. Shore: I gave that as a point of polarization. I wouldn’t think that was my model. I would not put that any higher or lower than the stress model. But I also think that by using a genetic model, that by using a biomedical model, by using a stress model, by using a cultural model, one gets a more comprehensive and a more accurate view of the complex issues of health and behavior.

Dr. Kunitz: When you apply that notion to a stress model, often it seems to me the same charge can be laid to virtually any explanatory model, that is, it’s heavily etiologically loaded.

Dr. Shore: I agree, therefore, it’s a mistake for us to use any single model.

Dr. Kunitz: Unless it’s right.
Dr. Bloom: What I think is going on here is that two psychiatrists, maybe now a third one, are talking about this narrow definition as applying to a whole list of potential mental disorders. The epidemiology that you’re talking about has gotten very specific in terms of major mental disorders, and we’re not really looking at the others in terms of epidemiology. The stress model and alcohol and lots of things on this board are still highly appropriate. There are still plenty of problems, as we talked about before.

Dr. Shore: I think that probably for those in the room there is a lot more agreement than disagreement, but I don’t want to back off from my point. I’d like to take a position that may be a bit extreme. I don’t disagree with applying a stress model, and I don’t disagree with a biomedical model in research with American Indians. It has a lot of limitations, but we’ve learned a lot about it by applying it to non-Indians, and we’re stumbling over rationales of why it shouldn’t be applied to Indians. We’re losing out in terms of the knowledge that could be gained from it, even though the outcomes from that research are going to be limited and have to be qualified from the points of view of the two major addresses that opened the program.

Dr. May: One thing that Gordon said is very important here, and that is that we have very, very limited facilities for treatment, inpatient or day basis, for a lot of these types of problems. In the Albuquerque area, we have hospitals that are virtually brand new with utilization rates of 10%, 15%, 24%, and I can’t for the life of me see why we in this particular conference can’t come out strongly to try to push this. If the epidemiologic transition is occurring, and it must be because it shows up in two thirds of these papers, there is this change in need for services. If Indian Health Service and the tribes can put these facilities to use for these kinds of issues, not only can we sort out some of the etiological problems, but provide a treatment service in the process. I think that that’s something we could very strongly back in this particular conference.

Dr. Levy: But at the same time, IHS is going hammer and tongs to limit eligibility for those services, so you still won’t be able to fill a ward.

Dr. Neligh: As a follow-up on the seductivity of the biological issue there are a number of reasons why this paper focused on those issues. I think all of us here are social psychiatrists, so I find it ironic that we’re considered soft from that perspective, by our colleagues. But in agreeing with Jim, probably the least costly research yet most potentially economical data and also treatment-useful data that I can imagine is biologically based. If there is, as part of the stress model, a biological vulnerability which has to enter into the model and that has been so grossly underinvestigated, is it inappropriate that it be seductive for us?