

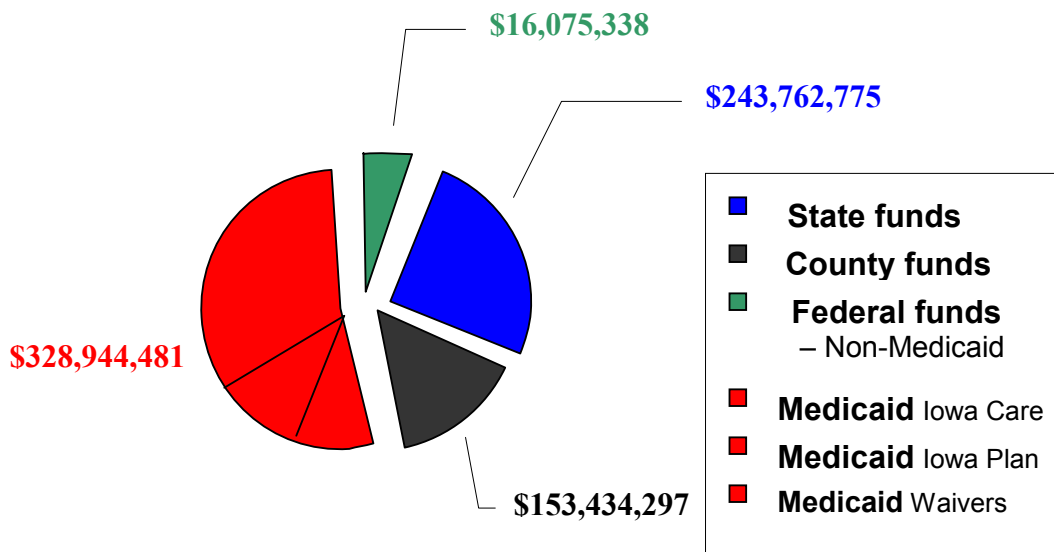
APPENDIX M:

The Mental Health and Disability System in Iowa – A View from the Data

Overview

In 2006 there were over \$1 billion in expenditures for mental health and disability services in the State of Iowa*. According to information provided by the DMDS, Chart 1 (below) depicts the breakdown by sources of funds of \$742,216 of funding for the 2006 for the combined Mental Health and Disability Services in the State of Iowa. These figures do not include Medicare, SSI or SSA expenditures. As can be seen from the chart, the major funding source is the federal government and this is primarily from in Medicaid reimbursements. The Iowa Medicaid Enterprise (IME), a division of the Department of Human Services (DHS) manages Medicaid funds through Medicaid “waiver” programs and *Iowa Care*. County funds represent the smallest portion of total expenditures with the counties contributing (21%) and the State contributing (33%). County and state contributions are general in the form of “match” to enable the state to obtain Medicaid reimbursement. Table 1 present the number of persons served with a diagnosis of MI or CMI as reported by counties for FY2006.

Chart 1: Mental Health & Disability Services Expenditures in Iowa*



Total: \$742,216,891

*These figures do not include Medicare, SSI or SSA expenditures in Iowa. Also not included is any expenditure from competitive grants. If those amounts were added the total would be over \$1 Billion spent on services per year. Source: DMDS

Table 1: Profiles of Persons with MI and CMI Served, All Programs by Age, Gender and Race/Ethnicity Unduplicated Count for 2006 as Reported by All Counties (Source: URS Data Files)

	Total				
	Female	Male	Gender Not Available	Race Not Available	Total
0-12 Years	7393	11560	10	3	18963
13-17 years	5652	6210	17	12	11879
18-20 years	2189	1516	10	9	3715
21-64 years	24044	15404	259	240	39707
65-74 years	460	326	10	7	796
75+ years	299	206	16	13	521
Not Available	91	77	42	39	210
Total	40128	35299	364	323	75791

I. Data Collection – 2007 Surveys

In the Summer of 2007, and as part of the MHDS Mental Health Systems Improvement initiative, initial surveys were sent to the state’s 33 Community Mental Health Centers (CMHC) and to the county’s Central Point Coordinators (CPC). Survey information was sought since there was no system or available data that could connect service utilization with expenditures.

A. Reliability and Validity Issues

We first examined the survey data from CMHCs and CPCs. The first question that was examined from the surveys was the extent to which CPCs and CMHCs reported similar services and expenditures for the same time period. The intent also was to get a robust picture of what services were being provided throughout the states by the CMHCs. Second, the level of funding provided to the CMHCs by the counties was also examined in order to assess if and where service gaps or irregularities might exist. It was noted that CPCs might report services other than those provided by CMHCs when asked to delineate the service array in their counties.

Initial response was poor from both entities. Follow-up surveys subsequently led to more complete data but continued to be incomplete making generalizations from analyses inconclusive due to missing data; to date 32 CMHCs and all but three CPCs responded. While missing data presents obvious challenges in terms of generalizability of the data at hand, it was felt that there was sufficient participation from survey respondents to assist in a better understanding of the general trends in service provision as shown in this section of the report.

1. Services Provided and Potential Service Delivery Gaps

Initially we sought to examine the extent to which CPCs and CMHCs reported similar services and expenditures for the same time period.

Table I shows the extent to which there was agreement from CPCs and CMHCs reports of the types of services actually provided. It was hoped that there would be a high degree of concordance of the services the counties reported to the state that they fund and the services the CMHCs believed they provide. Table I shows the number of CMHCs that report they actually provide a service and what the CPCs reported they believed they purchased. Table 2 does not show actual service utilization, rather only service provision *as reported by CPCs and CMHCs* for FY2006.

The information obtained from the surveys documents that services were not all provided by CMHCs. Overall, CPCs were more likely to report that more services were offered as compared to what was offered by CMHCs (means = 59.19 (sd=20.01) vs. 49.74 (sd=26.71) Pearson Correlation Coefficient = .692, p=.0001). The lowest rate of concordance in responses to the survey (a 30% or more difference) was found where CPCs stated that they provided

the following services more often than those stated by CMHCs: Crisis Stabilization, Targeted Case Management, Co-Occurring Mental Health and Mental Retardation Services, Supported Housing, and Supported Employment.

The data suggest at least three issues to consider. First, that service reporting by one or both entities regarding the provision of a set of services may be unreliable. Second, that the higher levels of services reported by CPCs may mean services are being provided in the county but not by CMHCs. Third, that over-reporting by CMHCs across some services categories may mean that consumers are not entering the system through the CPCs; rather they are entering directly at the CMHC. All three hypotheses are of concern for at least two reasons; that we do not have adequate IT capacity identify where consumers are entering into and served in the system, and that if the system continues to have more than one point of entry this could contribute to confusion on access, fragmentation of service, and possibly cost-inefficiency through duplication of efforts. It is also of interest that some of the services listed above are not being provided by CMHCs who are typically thought of as the “safety net” provider.

Table 2. CMHC and CPC Survey Results of Service Provision FY2006				
CMHC and CPC Survey Results of Service Provision		CMHCs Survey	CPC Survey	% Difference
		% offer	% offer	
Column Label	Actual Survey Question	N=37	N=88	
Telephone Crisis Services 24/7	Telephone Crisis Services 24/7	87	92	5
Crisis Stabilization	Crisis stabilization and response including 24-hour, 7-day per week, crisis emergency service that is prepared to respond to persons experiencing acute emotional, behavioral, or social dysfunctions Inpatient or other protective environment for treatment	33	68	35
Mobile crisis services	Mobile crisis services	8	17	9
Community-based crisis interventions for children and youth	Community-based crisis interventions for children and youth	31	39	8
Crisis intervention teams	Mental health crisis intervention services provided by teams of mental health workers (psychiatrists, RN's, MSW's, psychologists, psychiatric technicians)	28	36	8
Mobile crisis teams	Mobile crisis teams visit people in their homes or community sites, and others meet clients in clinics or hospital emergency rooms	17	20	3
Functional assessment and diagnosis	Functional assessment, and diagnosis to determine the specific needs of the recipient and to develop an individual plan of services.	92	92	0
Outcomes measurement tools	Outcomes measurement tools in order to monitor consumer outcomes in programs	56	57	1

Navigation, planning, linking, coordinating, follow-up, and monitoring	Navigation, planning, linking, coordinating, follow-up, and monitoring	64	76	12
Case Management	Case Management	44	59	15
Targeted Case Management	Targeted Case Management	19	66	47
Co-Occurring MH and SA	Co-Occurring Mental Health and Substance Disorders Services	56	68	12
Co-Occurring MH and MR	Co-Occurring Mental Health and Mental Retardation Services	42	76	34
Recovery-oriented services	Recovery-oriented services	81	59	22
Cognitive behavioral therapy	Cognitive behavioral therapy	94	66	28
Family psycho-education	Family psycho-education	47	61	14
Supported housing	Supported housing	14	52	38
Motivational enhancement	Motivational enhancement	44	30	14
Multi-systemic family therapy	Multi-systemic family therapy	25	44	19
Illness and medication management	Illness and medication management	83	89	6
Behavioral health and rehabilitative services	Behavioral health and rehabilitative services	61	72	11
Supported employment	Supported employment	14	60	46
Mental health advocacy	Mental health advocacy	64	72	8
Prevention and early intervention	Prevention and early intervention	44	60	16
School Mental Health Services	School Mental Health Services	75	52	23
Outpatient mental health services for children	Outpatient mental health services for children	89	77	12
Autism spectrum disorders services	Autism spectrum disorders services	31	38	7
Note: Black: =<10% difference; Blue: 11-19% difference; Green: 20-29% difference; Red: 30+% difference				

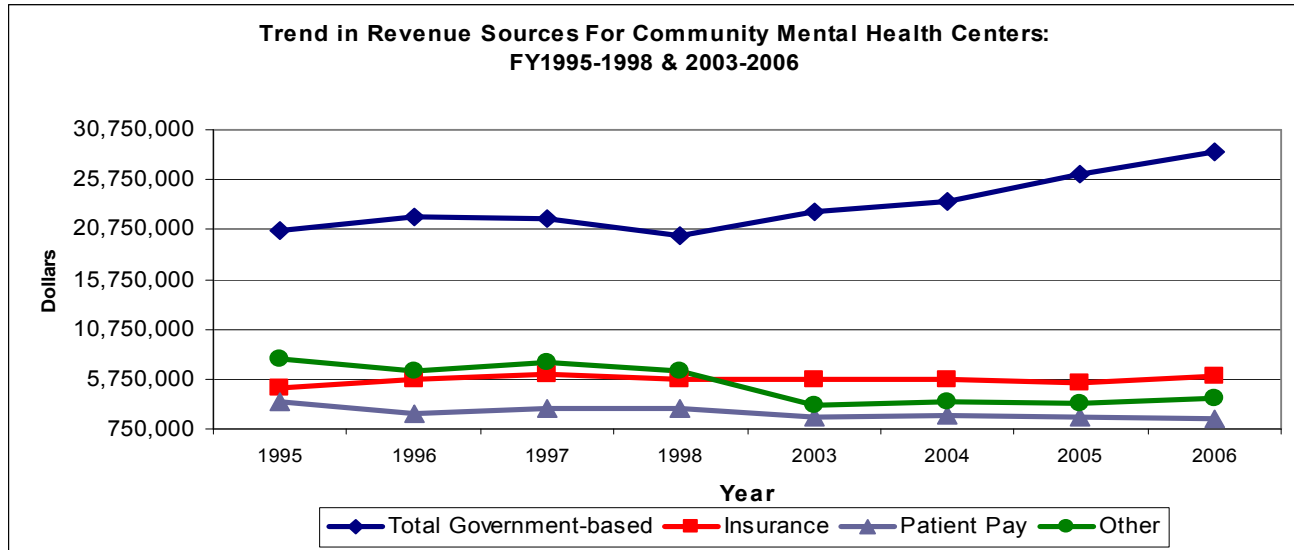
2. Level of CMHC Revenues base and Gaps in Service Provision

Other challenges in understanding service delivery needs are shown in examining the revenue base for CMHCs over time. Table 1.1 shows the overall distribution of revenue sources for CMHCs. Table 1.2 shows the distribution of government-based revenue sources only. Overall the data suggest an increase in government-based revenues over time. Within government-based revenue, the data suggest an initial decrease in revenues provided by counties (which is again on the rise) and a subsequent increase in revenues to the CMHCs through the Iowa Plan. Regardless of revenue distribution, the data show that expenditures run close to or exceed revenues. This data shows that the percent change increase of unduplicated caseloads routinely exceeds the percent change increase in per capita expenditures. As a result many counties (approximately 50% of all counties) ran a deficit in FY2006 (on the other hand 50% of all counties ran a surplus). Unfortunately data from FY1999 through FY2002 is unavailable leaving an incomplete and perhaps unreliable picture of revenue distribution over time. Care should be exercised in using this data for interpretation or significant policy initiatives as the data for 2006 shows net revenues increasing by more than 2000% yet expenditures exceeded revenues that year.

The data would suggest that a better formula for county and governmental dollars spent on persons with mental illness requires further contemplation to insure that counties have enough revenue to cover the basic needs of persons with

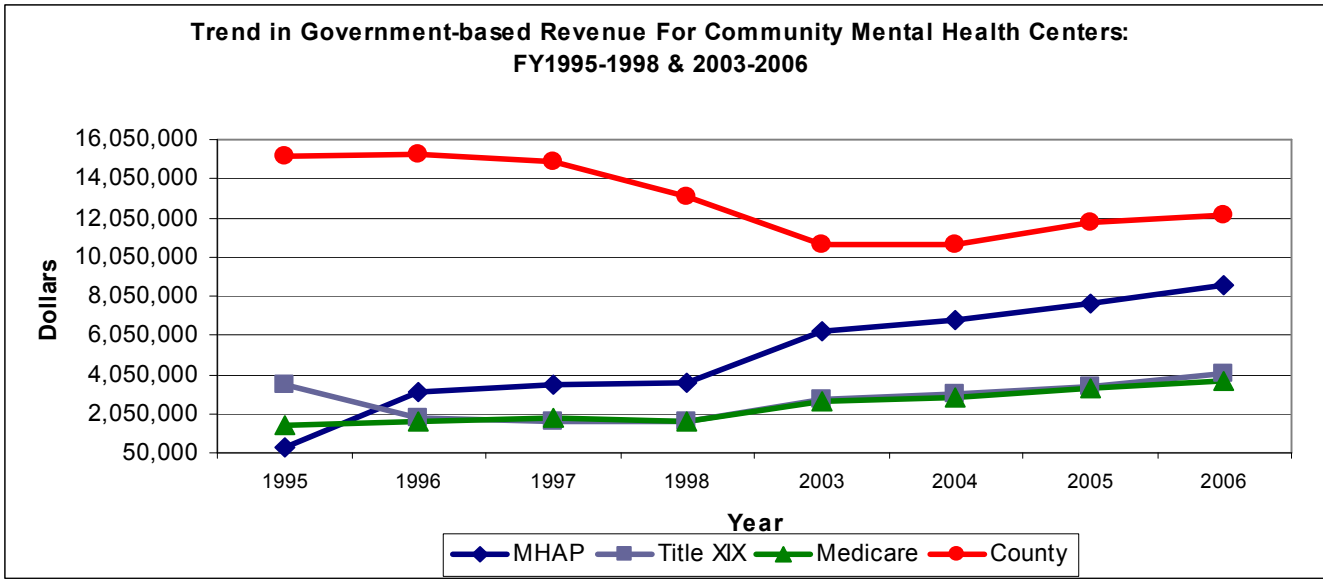
mental illness. One recommendation is to support the development and implementation of an alternative formula for the distribution of government-based dollars to insure access and parity across counties. Further data show significant variation in the reported provision of mental health care. These gaps in reported service provision should be addressed to build a system of care that maintains, to the best of its ability, a single point of access to a core set of services across Iowa.

Table 1.1 Distribution of Revenue Sources for Community Mental Health Centers



Actual	1995	1996	1997	1998	2003	2004	2005	2006
Total Government-based Revenue	20,622,418	21,966,009	21,910,514	20,161,985	22,436,543	23,470,826	26,238,099	28,526,385
Insurance	4,909,248	5,773,894	6,162,823	5,783,485	5,740,248	5,659,375	5,461,661	6,119,487
Patient Pay	3,437,322	2,238,881	2,777,444	2,868,275	1,915,645	2,127,224	1,977,572	1,816,087
Other	7,803,687	6,633,618	7,453,811	6,557,096	3,093,917	3,506,302	3,358,883	3,873,038

Table 1.2 Distribution of Government-Based Revenue Sources for Community Mental Health Centers



Actual	1995	1996	1997	1998	2003	2004	2005	2006
Iowa Plan (Mental Health Access) Plan	370,890	3,182,664	3,513,992	3,649,675	6,289,385	6,852,069	7,673,632	8,595,756
Title XIX	3,528,578	1,878,052	1,671,357	1,648,544	2,790,333	3,081,275	3,404,553	4,053,230
Medicare	1,480,032	1,628,056	1,839,125	1,691,890	2,651,702	2,827,898	3,379,994	3,710,984
County	15,242,918	15,277,237	14,886,040	13,171,876	10,705,123	10,709,584	11,779,920	12,166,415
Total Government-based Revenue	20,622,418	21,966,009	21,910,514	20,161,985	22,436,543	23,470,826	26,238,099	28,526,385

Another example showing the relationship between expenditures and subsequent service gaps can be seen in Figure 1. Figure 1 shows data from the Iowa Plan and indicates that dollars spent for persons in need of emergency mental health services is inconsistent with growing research in this area and developing systems of care in other states. This graph shows a significant trend to support the transportation of persons in crisis to emergency departments (EDs) rather than developing, implementing, and maintaining in-home or other alternative community-based mobile crisis services. In the most recent year Magellan reported that only \$35,000 was spent statewide on mobile crisis services. Lack of specific data on county expenditures for similar services makes a fiscal analysis nearly impossible.

Studies from other states including New York suggest that the broad design and implementation of community-based emergency services are positively associated with increased access, appropriate levels of treatment, and higher levels of clinical and socio-environmental outcomes for patients as compared to patients in crisis taken directly to EDs. Local reports from Iowa counties that do provide mobile services show significant financial return on investment when mobile crisis services are offered by CMHCs in collaboration with local law enforcement.

However, return on investment analyses must be reviewed with caution. Iowa currently has no service delivery outcomes data available to assess whether Iowans who use ED emergency crisis services show significantly positive outcomes as compared to the utilization of community-based alternatives. Such outcomes data would not only increase the capacity for quality assurance within our state, but to begin to examine cross-state comparisons when appropriate to better inform systems of care.

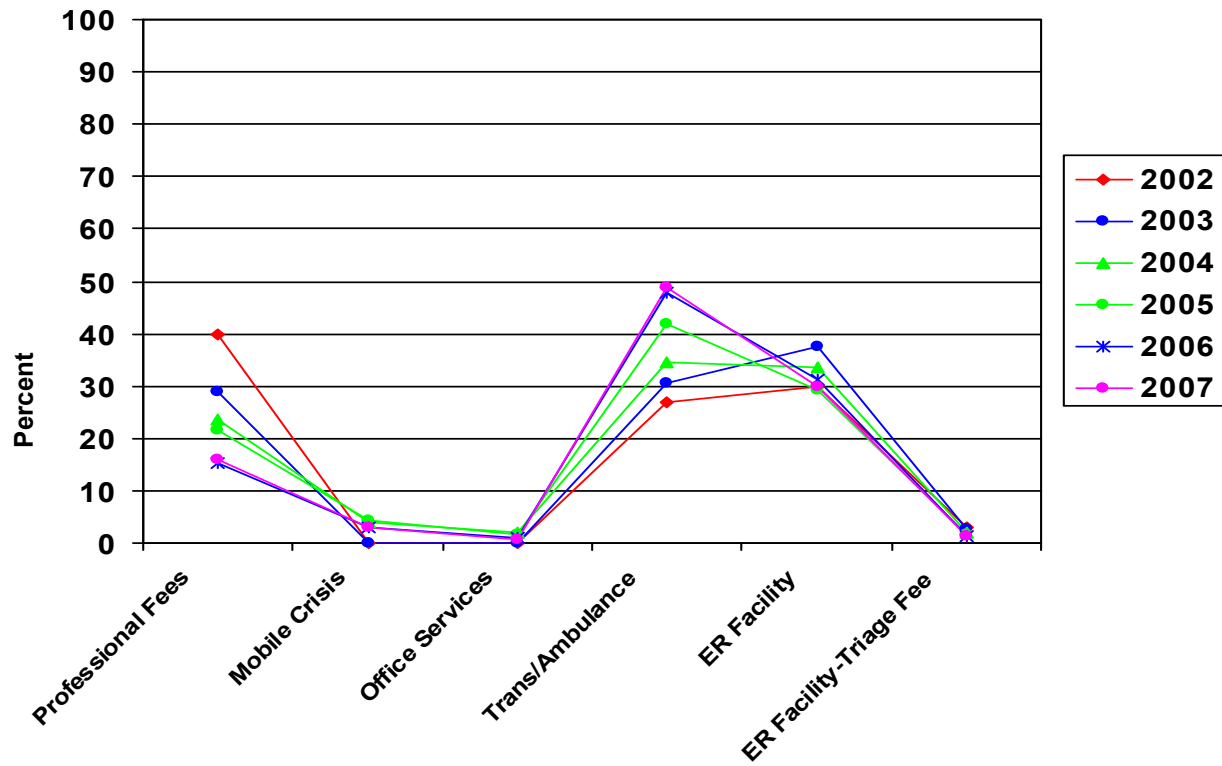


Figure I. Emergency Mental Health Services: Percent of Total Expenditures by Service and Year

Source: Magellan Behavioral Health

Other data examples that suggest poor reliability and validity of data exists in the reporting of expenditures by the CPCs to the Iowa Department of Management (DOM) as compared to the DHS County Management Information System (CoMis) reports sent to DHS. In this area we compared information provided to DOM by CPCs as well as the information provided by the CPCs to the DHS.

While the CPCs were the main sources for each of these reports there are discrepancies in overall reported expenditures across service categories. For example, the DOM reports generally document slightly higher expenditures for 'Treatments' and slightly lower expenditures for 'Living Arrangements' as compared to the CoMis reports across most populations (i.e., MI, CMI, MR, DD). See Figure 2-5.

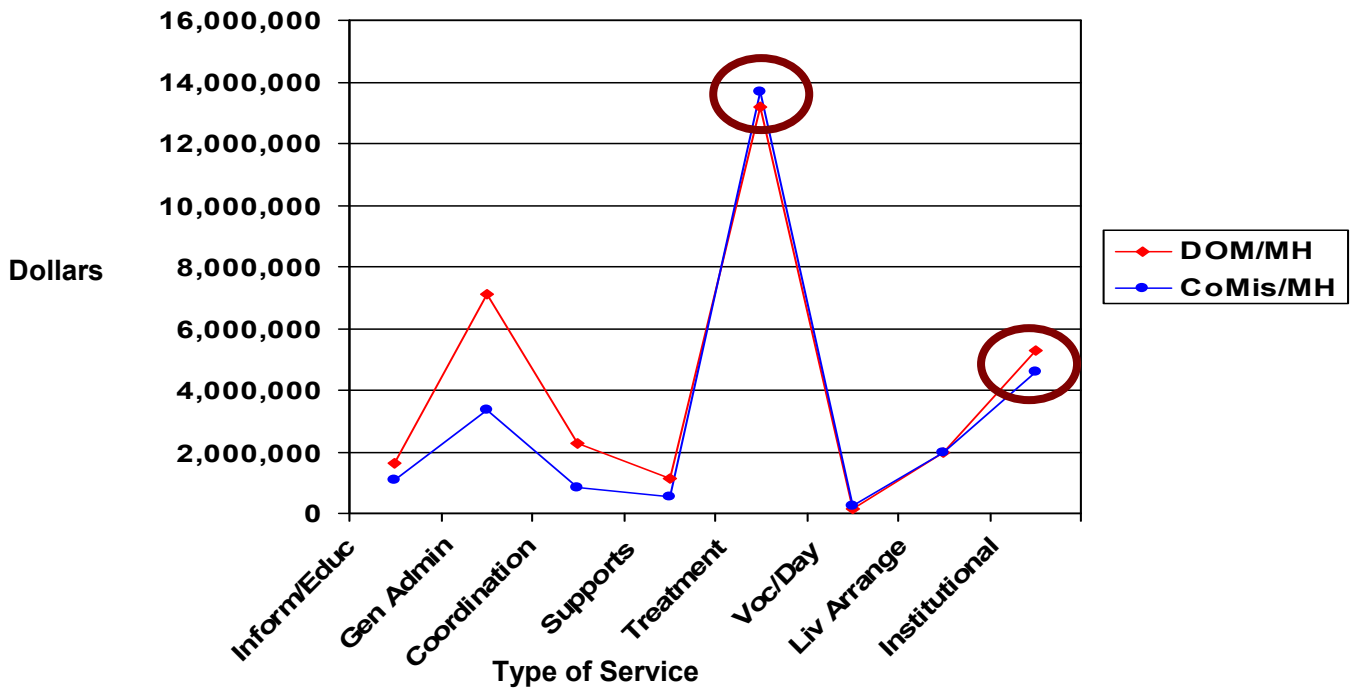


Figure 1. Expenditures for Mental Illness Across Service Categories FY2006: Comparison of Data from DOM and CoMis Reports

Sources: Department of Management (DOM) reports and CoMis data.

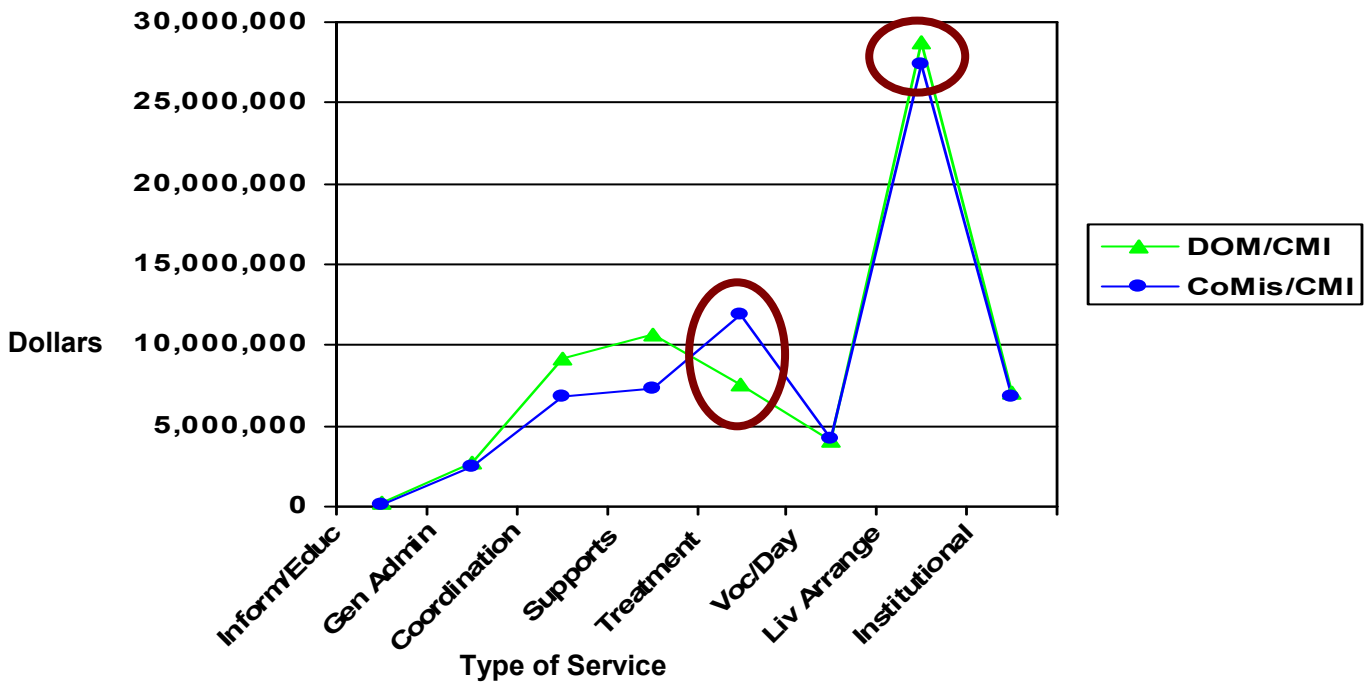


Figure 2. Expenditures for Chronic Mental Illness Across Service Categories FY2006: Comparison of Data from DOM and CoMis Reports

Sources: Department of Management (DOM) reports and CoMis data.

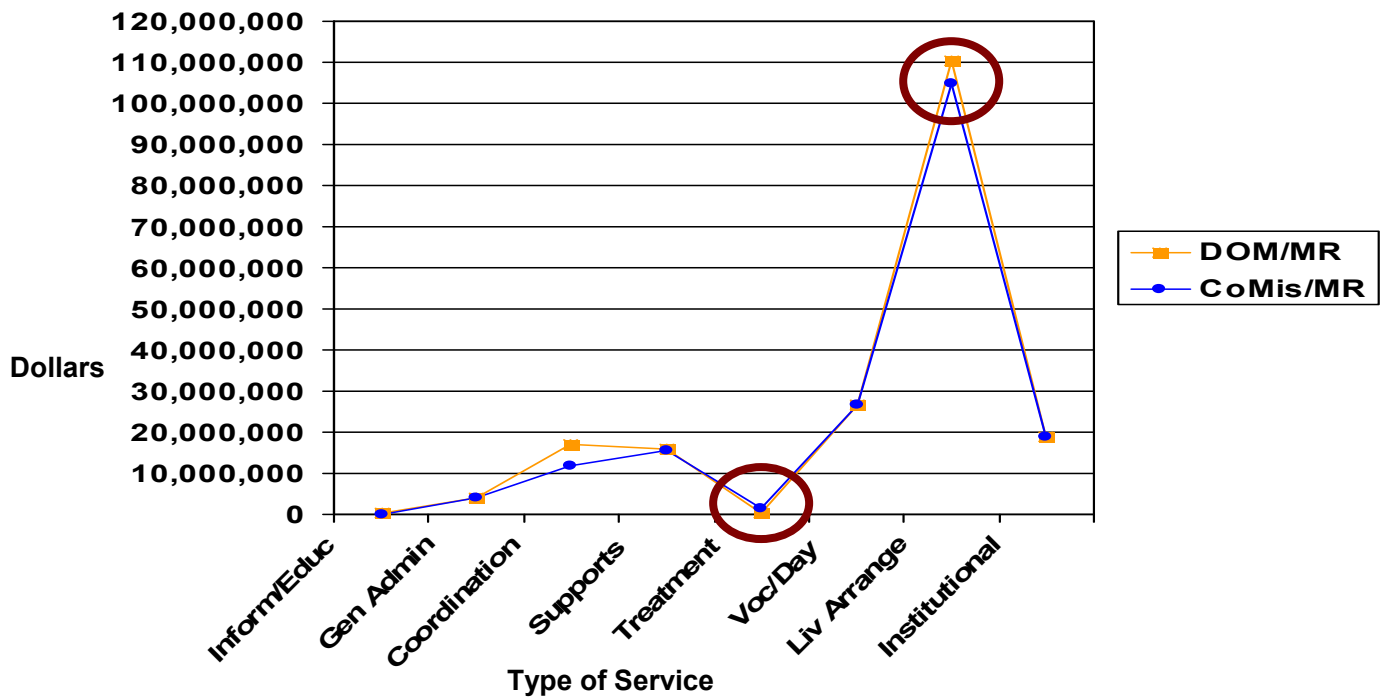


Figure 3. Expenditures for Mental Retardation Across Service Categories FY2006: Comparison of Data from DOM and CoMis Reports

Sources: Department of Management (DOM) reports and CoMis data.

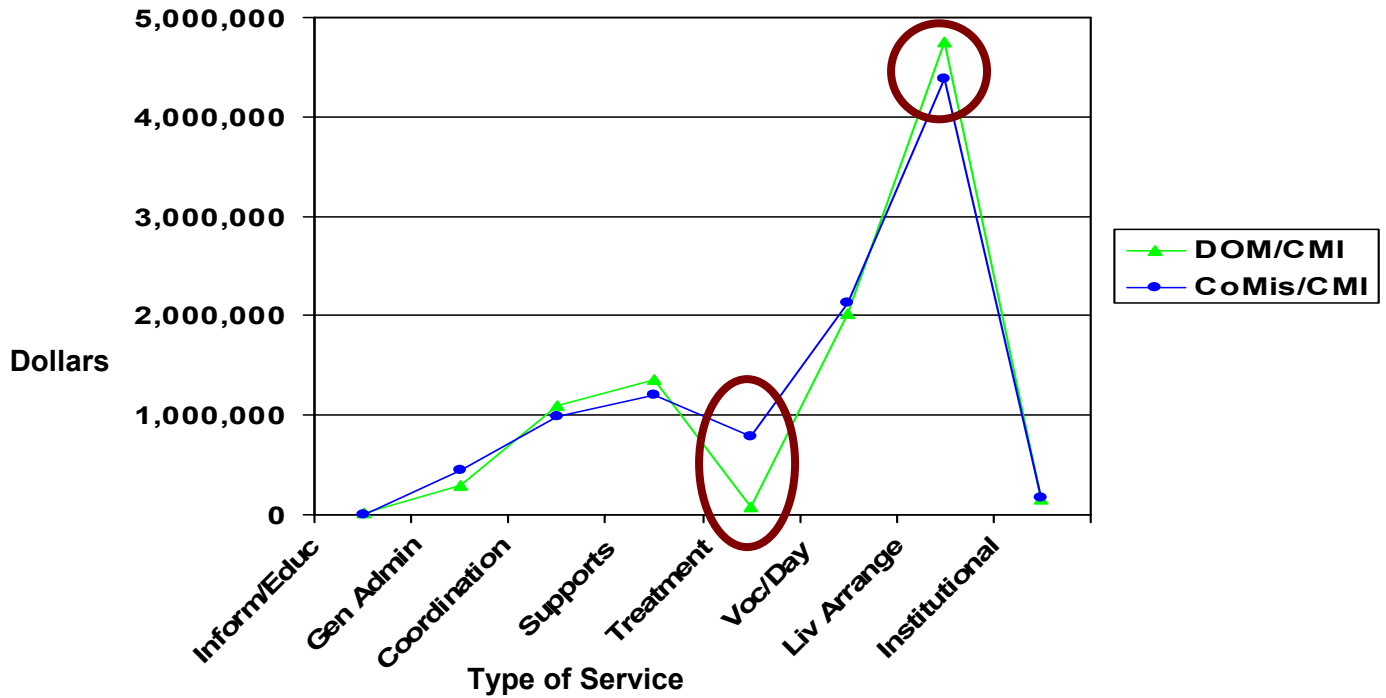


Figure 4. Expenditures for Development Disabilities by Service Categories FY2006: Comparison of DOM and CoMis Reports

Sources: Department of Management (DOM) reports and CoMis data.

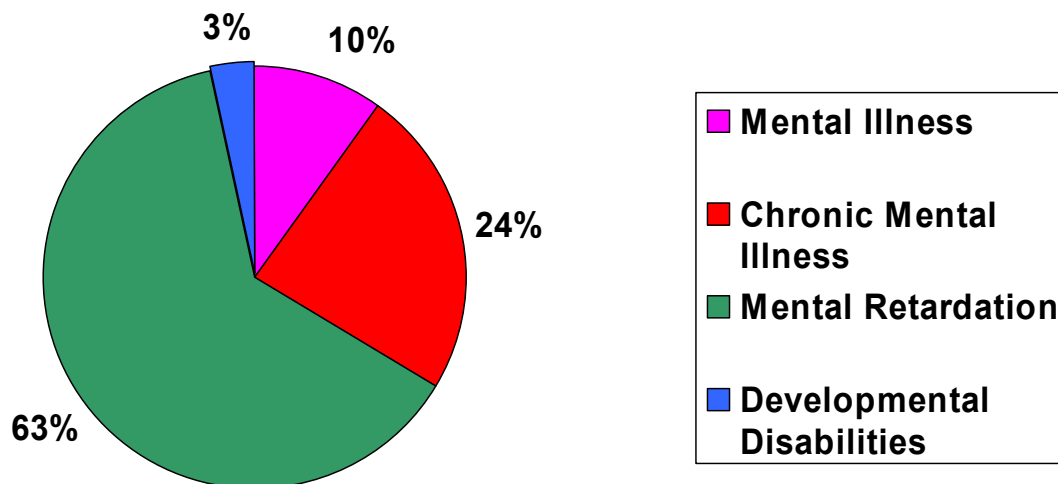
Figures 2-5 highlight at least two potential areas of concern for outcomes monitoring. First is that the information reported by the CPCs in separate formats for the DOM and the CoMis reports may be unreliable. Second, the challenges in reliability of the CPC data may not be due to reporting differences, rather, may be the reorganization of the information in an inconsistent manner. Again, inaccuracies point to problems associated with the lack of centralized IT capacity where data would be reviewed or “scrubbed” for consistency and reliability.

B. Overview of Expenditures by Target Populations and Comparative National Disease Rates

We examined the relationship between rates of prevalence and incidence of mental disorders reported to the state and the prevalence and incidence estimates promulgated by expert sources. Secondly, we sought to see what relationships existed between the services provided, expenditures for services, and prevalence and incidence estimates. Several assumptions are held: that local use of services is a proxy for prevalence and/or incidence; that allocation of funds to target populations was a proxy of local prevalence and incidence of mental disorders. These assumptions may be may not be valid.

The prevalence and incidence rate of MR and BI is unavailable in Iowa. The appropriate IT capacity to gather and track persons with MR and BI is unavailable. Using county data for example, Graph 1 shows the dollars spent by all counties for different populations. Compared to estimates of prevalence and incidence of various populations throughout the United States, the graph documents that a disproportionate share of county dollars are spent on persons with Mental Retardation and Chronic Mental Illness.

Over the last decade, several federal reports and other documents including the *Surgeon General’s Report on Mental Health* (1999), the *President’s New Freedom Report* (2003), and the *DSM-IV-TR* (American Psychiatric Association) suggest that among any age group, persons with mental illness represent approximately 20-25% of the population with a lifetime prevalence of 50%. County-reported expenditures in this category totaled 10%. Adults with Chronic Mental Illness represent approximately 5-7% of the population and youth with Serious Emotional Disturbances represent approximately 8-13% of all youth. County-related expenditures in this category totaled 24%. The prevalence of Mental Retardation occurs in 1% of the population. However there are different degrees of MR including mild (about 85% of all persons with MR), moderate (10%), severe (3-4%), and profound (1-2%). County-related expenditures in this category totaled 63%. The overall prevalence of Developmental Disabilities is quite small however there is a dearth of prevalence data that exists for distinct disabilities. County-related expenditures in this category totaled 3%.



Graph 1. Average Expenditures by Population Served FY1999-2006

Source: Department of Management (DOM) reports

1. Service Provision by Types of Services from 1999-2006, by Age Groups, and by Target Populations

Due to some discrepancies in the CoMis data with regard to service utilization (discussed elsewhere) the DOM reports were used to examine overall expenditures and service provision across age groups and populations served (i.e., MI, CMI, MR and DD) for fiscal years 1999-2006.

a. Target Population: Persons with Mental Illness

Figure 6 shows expenditures for all persons served with Mental Illness. These data show an overall increase in expenditures for General Administration, Treatment, and Inpatient care over the 8-year time period. An initial examination of the data show discrepancies across service areas as related to the what would be expected from the literature for persons with MI. One would expect that if expenditures increase for treatment, subsequently fewer dollars would be spent on inpatient care; thereby supporting an “early intervention, mental illness prevention and mental health promotion” approach to service delivery. However, the data suggest an alternative hypothesis. Increasing treatment, with minimal focus on coordination of care and support systems likely will not provide persons with mental illness the tools needed to be self-resilient. A growing body of research documents the importance of various treatment services, coordinated care and building support systems for persons with mental illness as critical components leading to self-resiliency.

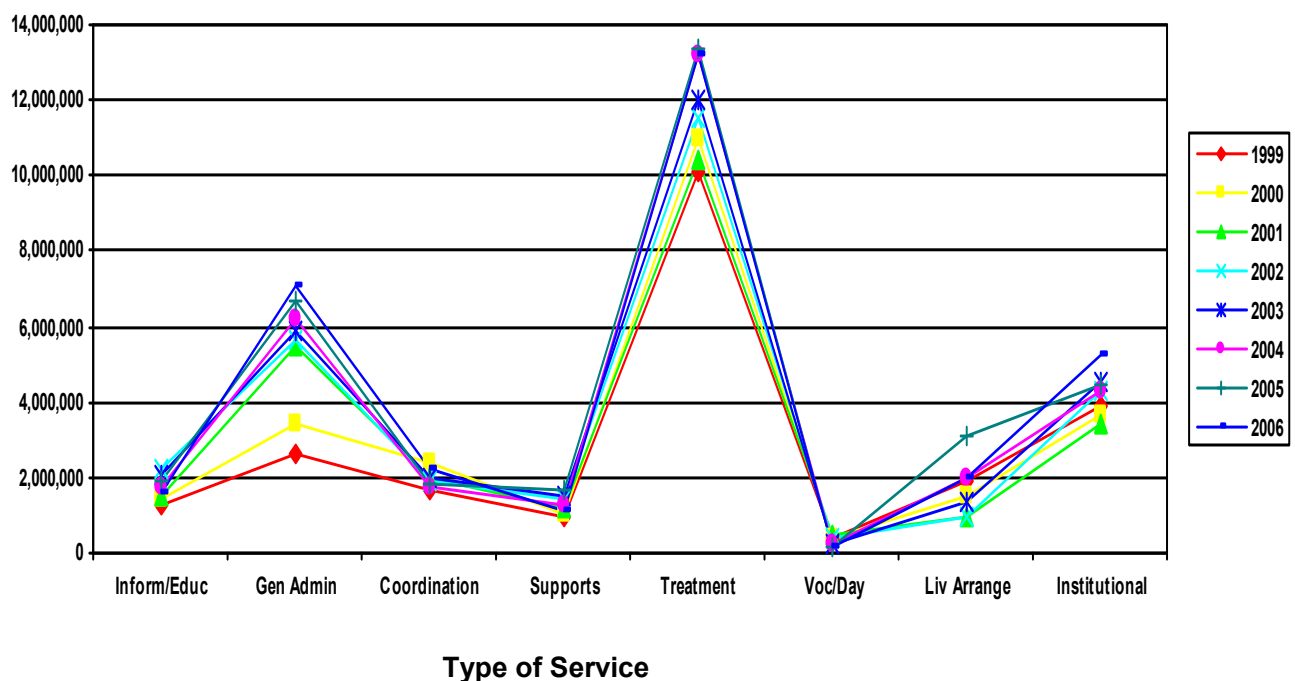


Figure 6. Expenditures for Persons with Mental Illness by Service Categories FY1999-2006

Note: There was an overall increase in Expenditures over time for General Administration, Treatment, and Inpatient Services.

Service data was further assessed by age groups. Figure 7 presents service provision by service categories and years for youth and adults with mental illness. The data shows that treatment services are decreasing for youth over time, while inpatient care is on the rise; and inpatient service utilization by children has reached similar levels as those for adults. This finding is of concern for two reasons. First it is inconsistent with the literature on desired goals of a systems of care which promotes higher levels of coordination, supports and treatment services in order to increase self-resilience over time and service utilization in the least restrictive setting. Second the data show a similar pattern of service delivery for adults however inpatient rates remain stable for adults at about 16%. It is very difficult to compare inpatient rates across states for many reasons. Rates have been shown to be associated with provider type and availability and the objectivity of treatment guidelines needed to aid in decisions regarding most appropriate treatment sites.

Also a state's poverty rate has shown to have a significant effect on a state's hospitalization rate for mental illness. An increase in a state's poverty rate is associated with a rather significant increase in a state's hospitalization rate for MHDS Report and Recommendations on Mental Health Systems Improvement APPENDIX M

mental illness. For example, research suggests that even one standard deviation increase in a state's poverty rate can increase the mental illness hospitalization rate by over 23%. The literature also indicates that unemployment is a significant determinant of institutionalization rates for mental illness. As unemployment increases, hospitalization rates for mental illness decrease. This could be explained by fiscal problems during economic downturns in financing hospitalization of mentally ill patients. Also, unemployment may be negatively related to the percent of the population with insurance to pay for hospitalization. These two factors may intertwine in times of unemployment so that people may be more stressed and likely to be diagnosed as mentally ill. Further as state per capita income increases, the rate of hospitalization for mental illness increases. This may be an indication that wealthy states can better afford to hospitalize mentally ill patients and insurance coverage likely rises with income. Finally patterns of hospitalization and re-hospitalization of persons with mental illness vary along rates of homelessness, medical morbidity, and psychiatric and substance use co-morbidity. Given the number of factors associated with the use of psychiatric utilization, comparison of inpatient rates is challenging and unavailable. Research findings would hopefully inform psychiatric epidemiological efforts to refine psychiatric and co-morbidity assessments for service delivery for this vulnerable population. More study of these patterns of service utilization in Iowa is indicated.

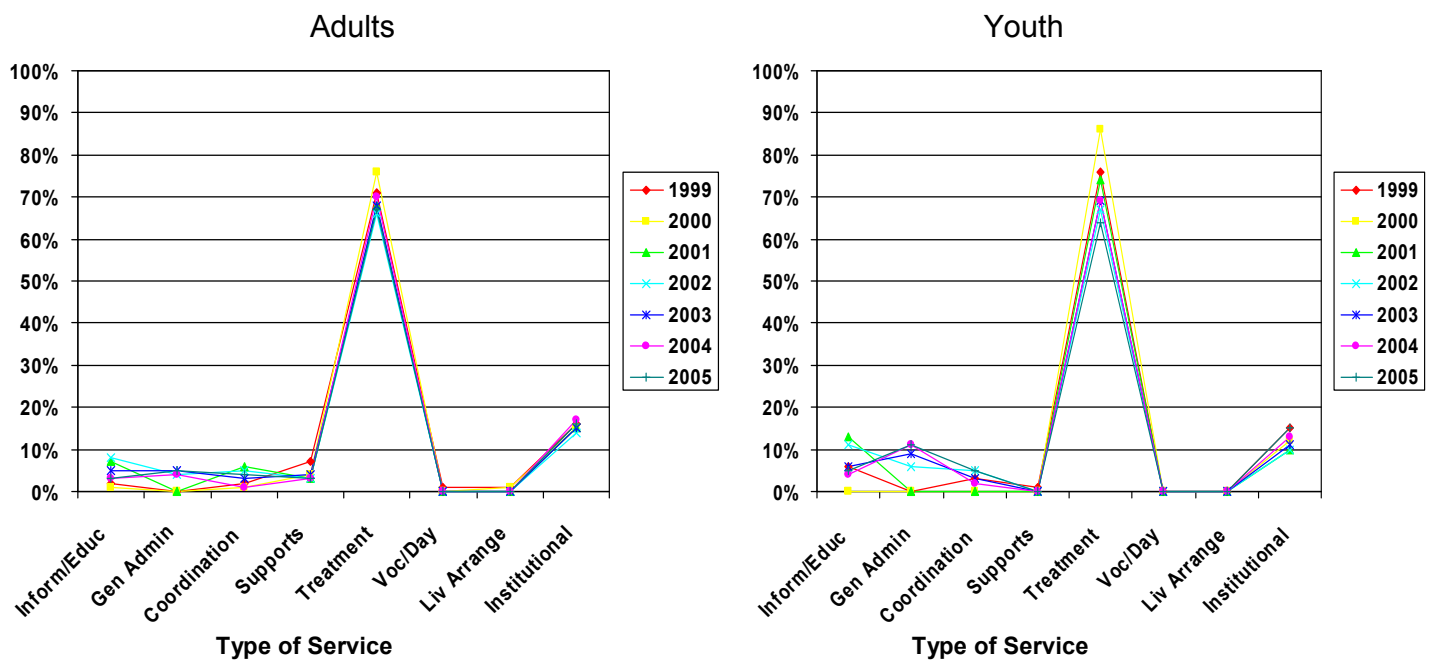


Figure 7. Percent of Adults and Youth with Mental Illness by Service Categories FY1999-2005

Note: Number of treatments decreased for youth, while Institutionalization is on the rise.

a. Target Population: Adults with Chronic Mental Illness and Youth with Serious Emotional Disturbance

Figures 8 and 9 show expenditure and service data for persons with Chronic Mental Illness. Figure 8 shows a general increase in expenditures for Coordination and Support services over time. Further, Treatments and Vocational/Day services have remained at relatively low levels, but steady over time. Finally, there is a decrease in expenditures for Living Arrangements while Institutional Care has remained relatively stable over time.

Trends in service delivery are dramatically different for adults with Chronic Mental Illness as compared to youth with Serious Emotional Disturbance. Figure 9 shows very different patterns of care for adults as compared to youth. In any year, as the numbers of Treatments for youth decrease there is a subsequent increase in Institutional care.

There are several factors that may contribute to findings for youth. Current research on Iowa youth suggests that many children and adolescents tend to enter the mental health system at more advanced stages of illness requiring inpatient care; even though the child may exhibit symptoms up to 2 years prior to seeking services. (Anderson et.al, 2003). Some of this is explained by type of illness and/or socio-environmental factors. For example, youth with

symptoms of depression (e.g., withdrawal) tend to be under-diagnosed and referred because their symptoms tend not to cause disruptive behavior. Also, youth with histories of abuse may present for care late in the system due to legal/social welfare implications. Growing numbers of youth in need pose a major challenge to the mental health of communities and individuals. The impact of mental disease is increasing as can be seen by the high levels of need within the juvenile justice, substance abuse and child welfare populations.

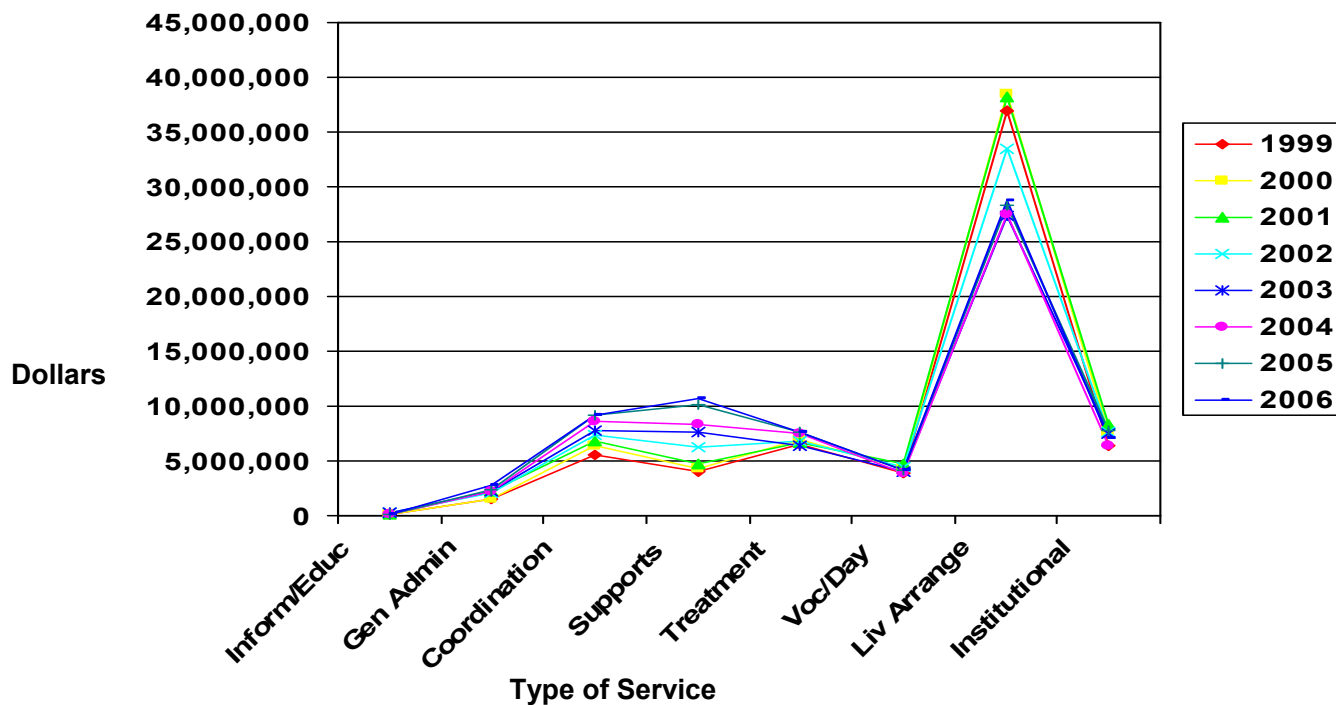


Figure 8. Expenditures for Persons with Chronic Mental Illness by Service Categories FY1999-2006

Note: There is an increase in expenditures for Coordination and Support services. Further, Treatments and Vocational/Day services have remained steady over time. There is a decrease in expenditures for Living Arrangements while Institutionalization has remained relatively stable over time.

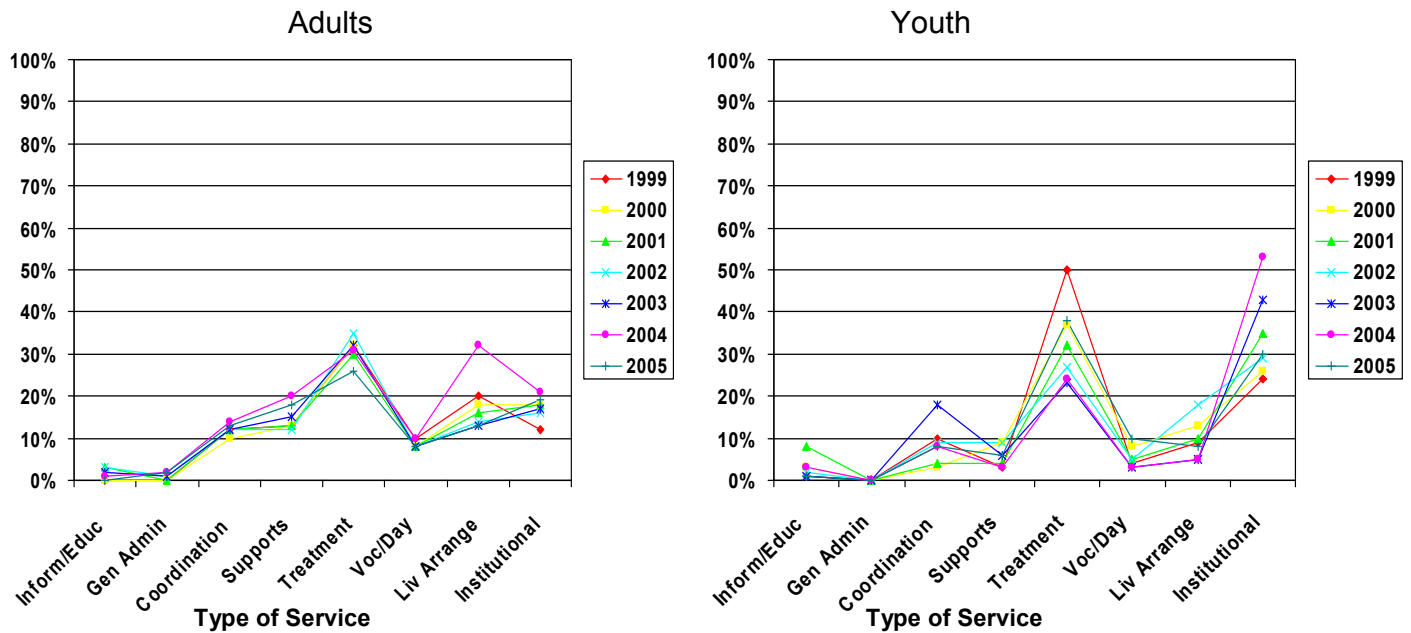


Figure 9. Percent of Adults with Chronic Mental Illness and Youth with Serious Emotional Disturbance by Service Categories 1999-2005

The data for adults presents a very different pattern of service utilization; there has been a decrease in treatments, low levels of vocational and day services, and a fairly dramatic decrease in community living arrangements over time. Institutionalization has remained rather steady for adults at around 16-17%.

Historically state beds for persons with chronic mental illnesses have decreased. However, community-based alternatives for persons with chronic mental illness lacked the kinds of supporting services many times required by persons with CMI. For example, a large number of publications have documented that CMHCs did not develop around the needs of persons with CMI; they have less competency to treat persons with CMI and no inpatient capacity. Persons with CMI looked more and more to the private sector for inpatient needs. However over the past five years due to negative operating margins, 63% of states have experienced declines in the number of general hospital specialty unit psychiatric beds and 38% have experience a decline in the number of private psychiatric hospital beds. The impact of bed closures has resulted in a shortage in psychiatric beds around the country including Iowa (National Association of State Mental Health Program Directors Research Institute, 2006). (See Table II, Graph 2, and Graph 2a for current bed capacity in Iowa by organization, county and bed type). There has been a similar result on number of available psychiatrists in Iowa. Decreased bed capacity has led to a decrease in the psychiatric workforce over time, particularly psychiatrists.

The impact of decreasing resources in the service delivery system has led to, by default, persons with CMI using emergency departments (ED) as a source of regular care due to a lack of appropriate points of entry and treatment alternatives. ED departments, which generally run negative operating margins, (but are the number one referral for inpatient beds) tend to ask for type of insurance for persons with MI/CMI presenting voluntarily. As existing hospital beds do need to be filled, research data suggest that not all persons admitted to the inpatient service present with clinical symptoms consistent with a need for this level of service intensity (Anderson et al). This implies that patients admitted can be treated within the reimbursed LOS lessening the likelihood of negative operating margins. Research data suggests that persons with CMI brought to the ED involuntarily are stabilized and transferred as quickly as possible to state hospital beds. Research also suggests that uninsured or underinsured persons with CMI are many times stabilized in the ER and sent home with a referral. In most cases, it is this latter group that makes up the bulk of ED readmissions, persons who are homeless, persons who make up a disproportionate number of offenders in jails and prisons and persons more likely to be recidivists (See Figures 9 and 10). Iowa data is very consistent with national data in this regard. There is also a paucity of data regarding the needs of mentally ill persons when presenting to Ers. In some cases they are directed to go to the ER by treatment teams but are unwelcome by ER staff. Extensive analysis of this situation and the outcomes of these processes is warranted.

Also, the average length of stay for inpatient psychiatric units across Iowa is approximately 4 days (Iowa Hospital Association/Magellan). There is no current measure of clinical functioning associated with these stays and no clear data to show which, if any, crisis symptoms have been stabilized in this short length of stay.

While one must be cautious about these trends; a closer look at the data makes a compelling case. Between the years 97-98 and 2000 there is a flattening of the line related to MHIs suggesting a leveling off in bed capacity. Subsequently during the same time period there was a slight decrease/leveling off of prison admissions, a decline in prison readmissions and in the number homeless. After continued decreases in bed capacity at the MHIs after 2000, the data shows a corresponding increase in prison admissions, re-admissions, and homelessness.

Table II. Community, State and Federal Hospitals in Iowa 2007: Psychiatric Bed Capacity

Name of Hospital	City	County	Beds	Hospital Designation
Alegent Health Mercy Hospital – CB	Council Bluffs	Pottawattamie	30	Community
Allen Health System	Waterloo	Black Hawk	21	Community
Broadlawns Medical Center	Des Moines	Polk	24	Community
Buena Vista Regional Medical Center	Storm Lake	Buena Vista	10	Community
Cass County Memorial Hospital	Atlantic	Cass	8	Community
Covenant Medical Center	Waterloo	Black Hawk	23	Community
Ellsworth Municipal Hospital	Iowa Falls	Hardin	10	Community
Genesis Medical Center – Davenport	Davenport	Scott	39	Community
Great River Medical Center	West Burlington	Des Moines	8	Community
Greater Regional Medical Center	Creston	Union	9	Community
Iowa Lutheran Hospital	Des Moines	Polk	65	Community
Jennie Edmundson Hospital	Council Bluffs	Pottawattamie	29	Community
Keokuk Area Hospital	Keokuk	Lee	14	Community
Mahaska Health Partnership	Oskaloosa	Mahaska	8	Community
Mary Greeley Medical Center	Ames	Story	23	Community
Mercy Iowa City	Iowa City	Johnson	19	Community
Mercy Medical Center – Cedar Rapids	Cedar Rapids	Linn	20	Community
Mercy Medical Center – Clinton	Clinton	Clinton	14	Community
Mercy Medical Center – Des Moines	Des Moines	Polk	32	Community
Mercy Medical Center – Dubuque	Dubuque	Dubuque	36	Community
Mercy Medical Center – North Iowa	Mason City	Cerro Gordo	28	Community
Mercy Medical Center – Sioux City	Sioux City	Woodbury	21	Community
Ottumwa Regional Health Center Inc.	Ottumwa	Wapello	23	Community
Sartori Memorial Hospital, Inc.	Cedar Falls	Black Hawk	15	Community
Shenandoah Medical Center	Shenandoah	Page	6	Community
Spencer Hospital	Spencer	Clay	16	Community
St. Anthony Regional Hospital	Carroll	Carroll	14	Community
St. Luke’s Health System, Inc.	Sioux City	Woodbury	8	Community
St. Luke’s Hospital	Cedar Rapids	Linn	74	Community
The Finley Hospital	Dubuque	Dubuque	9	Community
Trinity Regional Medical Center	Fort Dodge	Webster	20	Community
University of Iowa Hospitals and Clinics	Iowa City	Johnson	73	Community
Cherokee MHI	Cherokee	Cherokee	58	State
Clarinda MHI	Clarinda	Page	55	State
Independence MHI	Independence	Buchanan	95	State
Mt. Pleasant MHI	Mt. Pleasant	Henry	79	State
VA Central IA Health Care	Knoxville	Marion	327	Federal

VA Medical Center	Iowa City	Johnson	93	Federal
<i>Total Psychiatric Beds</i>				
			749	Community
			287	State
			420	Federal VA

Source: The IHA, the AHA, and Magellan 2007

**MHI and Prison Admissions and Prison Readmissions:
FY 1995-2006**

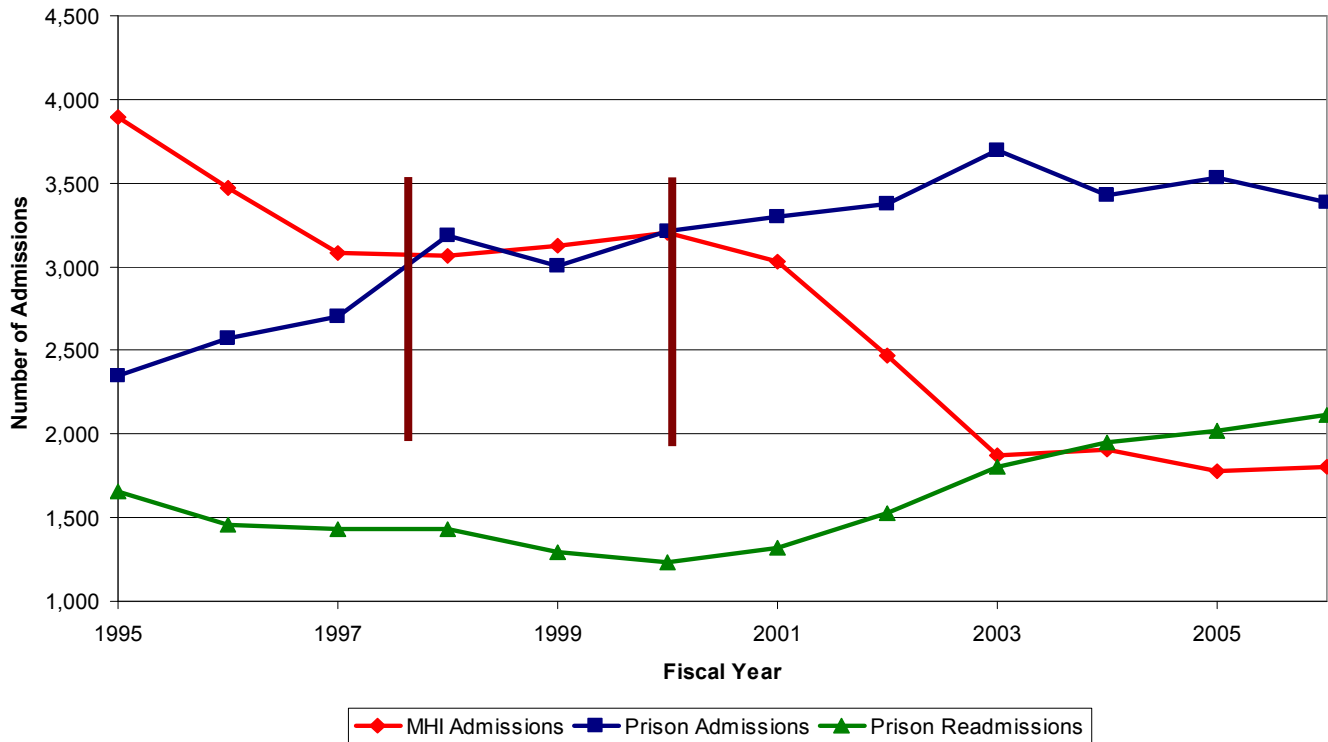


Figure 9. Trend in the Number of Admissions to Mental Health Institutions and Prisons and the Number of Prison Readmissions

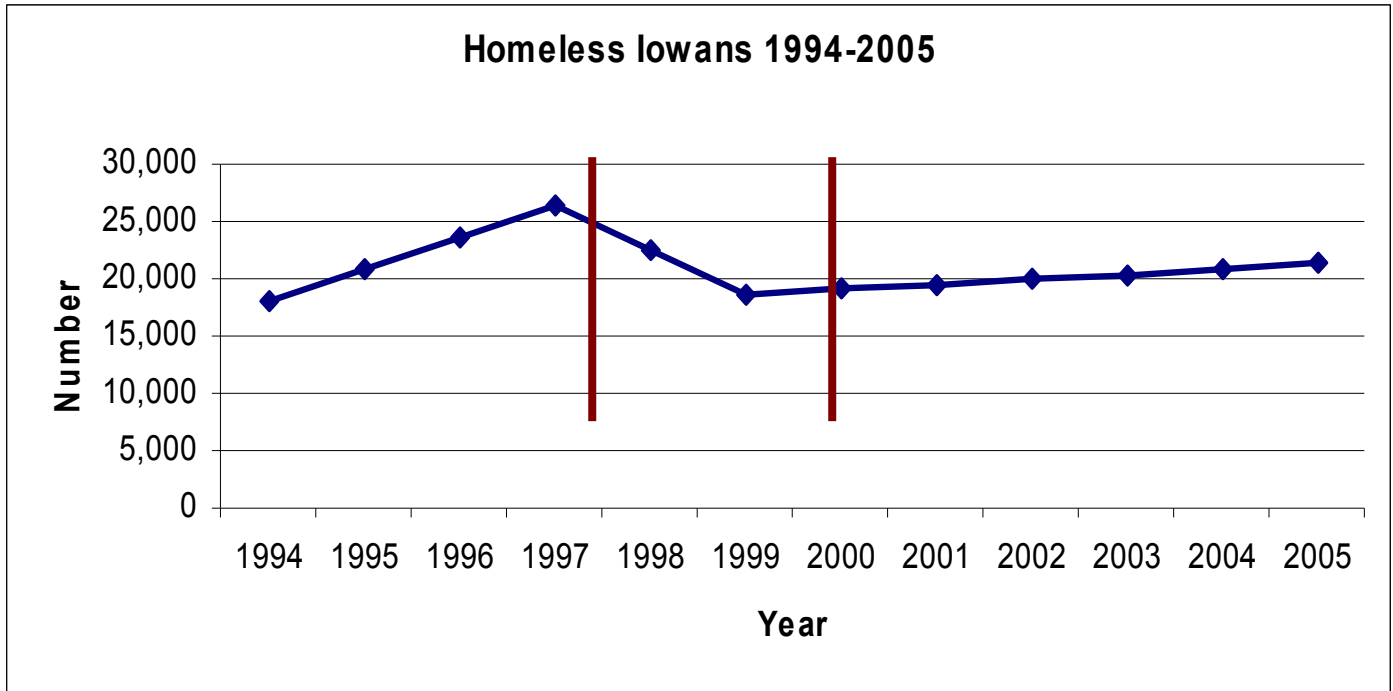


Figure 10. Trend in the Number of Homeless Iowans

b. Target Population: Persons with Mental Retardation

The data in Figure 11 suggests that persons with MR end up in long-term out-of-home living arrangements with little more than adaptive support services (e.g., Activities of Daily Living such as brushing teeth, getting dressed, etc.). In fact, Iowa is among the leaders in the nation in the number of Intermediate Care Facility beds for persons with MR; however Figure 11 does not tell the entire story.

The overall picture of service delivery to persons with MR can be misleading. When broken out by age groups, we come to an interpretation that is better supported by epidemiological research on prevalence and services research for MR populations.

As suggested above, the majority of persons with MR (about 85% of all persons with MR) have Mild MR. As a group, people with this level of MR typically develop social and communication skills during the preschool years, have minimal impairment in sensorimotor areas, and often are not distinguishable from children without MR until a later age. By their late teens, they can acquire academic skills up to approximately the sixth-grade level. During their adult years, persons with Mild MR usually achieve social and vocational skills adequate for minimum self-support, but may need supervision, guidance, and assistance, especially when under unusual social or economic stress. With appropriate supports, individuals with Mild MR can usually live successfully in the community. As suggested by Figure 12, youth generally receive more coordination of care and likely end up with fewer living in sheltered settings. As we move along the continuum of severity of MR, we see a shift in Figure 12 to adults with lower levels of coordination and higher levels of sheltered care. The degree to which may be determined by severity of MR.

Persons with Moderate MR generally profit from vocational training and with moderate supervision can attend to their personal care. Persons with Moderate MR also benefit from training in social and occupational skills. In their adult years, the majority is able to perform unskilled or semiskilled work under supervision in sheltered workshops or in the general workforce.

Most persons with Severe MR acquire little communication speech and can be trained in elementary self-care skills. In their adult years they may be able to perform simple tasks in closely supervised settings. Most adapt well to life in the community, in group homes or with their families, unless they have an associated handicap that requires specialized nursing or other care.

Persons with Profound MR have an identified neurological condition that accounts for their MR. They display considerable impairments. Optimal development may occur in a highly structured environment with constant aid and

supervision and an individualized relationship with a caregiver. Motor development and self-care and communication skills may improve if appropriate training is provided. Some persons can perform simple tasks in closely supervised and sheltered settings.

In Iowa we have no uniform, mandatory assessment and reporting of severity of illness and needs across the MR population to assess whether in fact people are being served in the most appropriate service setting according to their presenting needs. More evidence is needed documenting service needs and system outcomes for persons with MR including clinical and socio-environmental factors, service coordination and cost benefits. The literature suggests that clinician decisions on admission criteria and admission policies vary widely. Studies point to a range of factors associated with clinical decision-making including clinician variables, clinical concerns, and social systems. As delivery systems become increasingly organized and accountable, uniform assessment and guidelines will assume a critical role in level-of-care decision-making ensuring that admission decisions are consistent with current clinical criteria and standards for care. Given the high costs of care, understanding the complexities and management of persons with MR is clearly a concern and suggests that providers need to be better informed about treatment strategies that are of the greatest benefit for persons with MR.

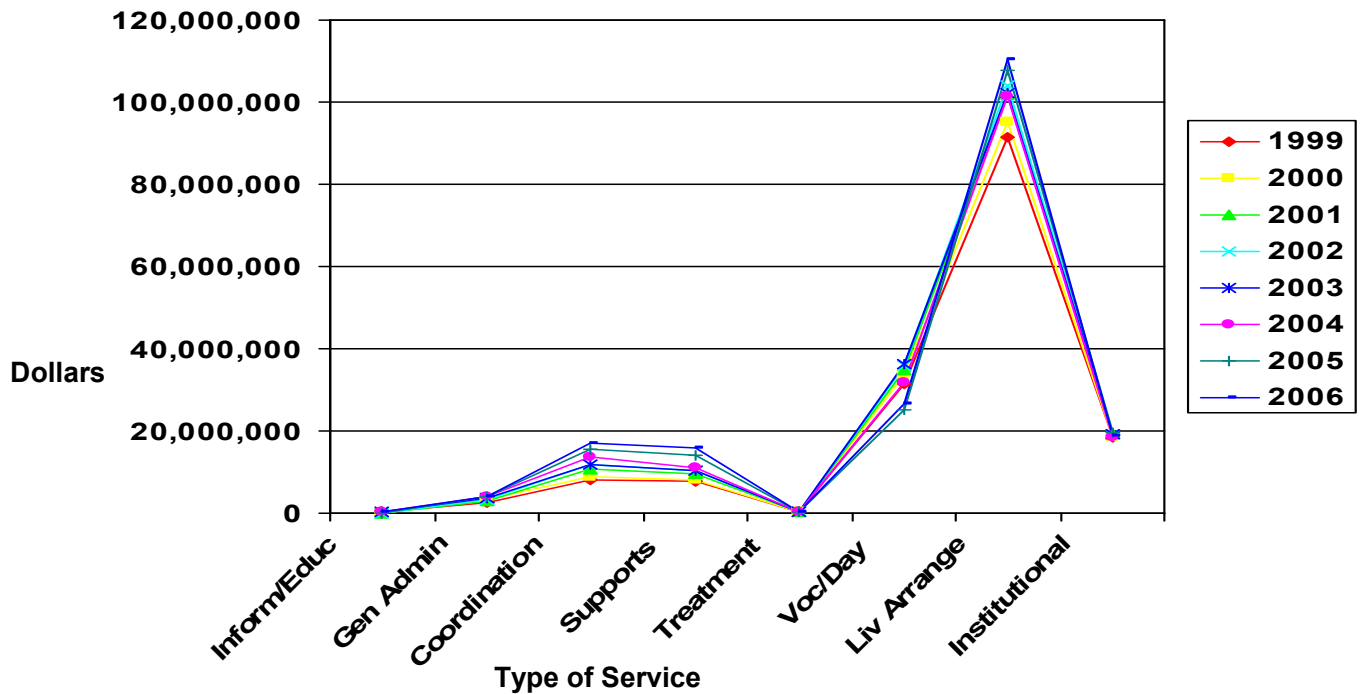


Figure 11. Expenditures for Persons with Mental Retardation by Service Categories FY1999-2006

Note: There is a general increase in expenditures for Coordination, Supports, and Living Arrangements over time. Persons with MR have significantly higher levels of expenditures for Institutionalization as compared to all other population groups.

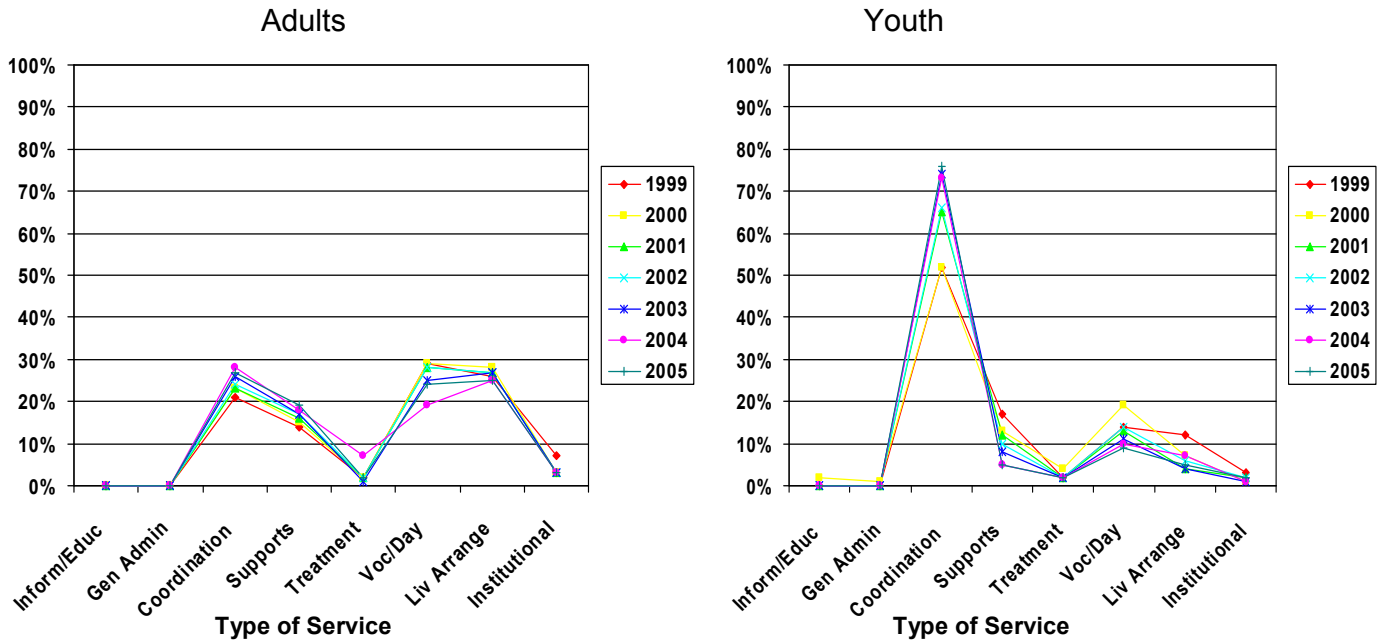


Figure 12. Percent of Adults and Youth with Mental Retardation by Service Categories FY1999-2005

2. Overview of Services by Target Populations

County data (year unknown) was used to assess the percent of mandatory and voluntary (i.e., based on consumer need and available funds) services provided across MI, CMI, MR, and BI populations.

Figure 13: Services to Persons in All MH Categories

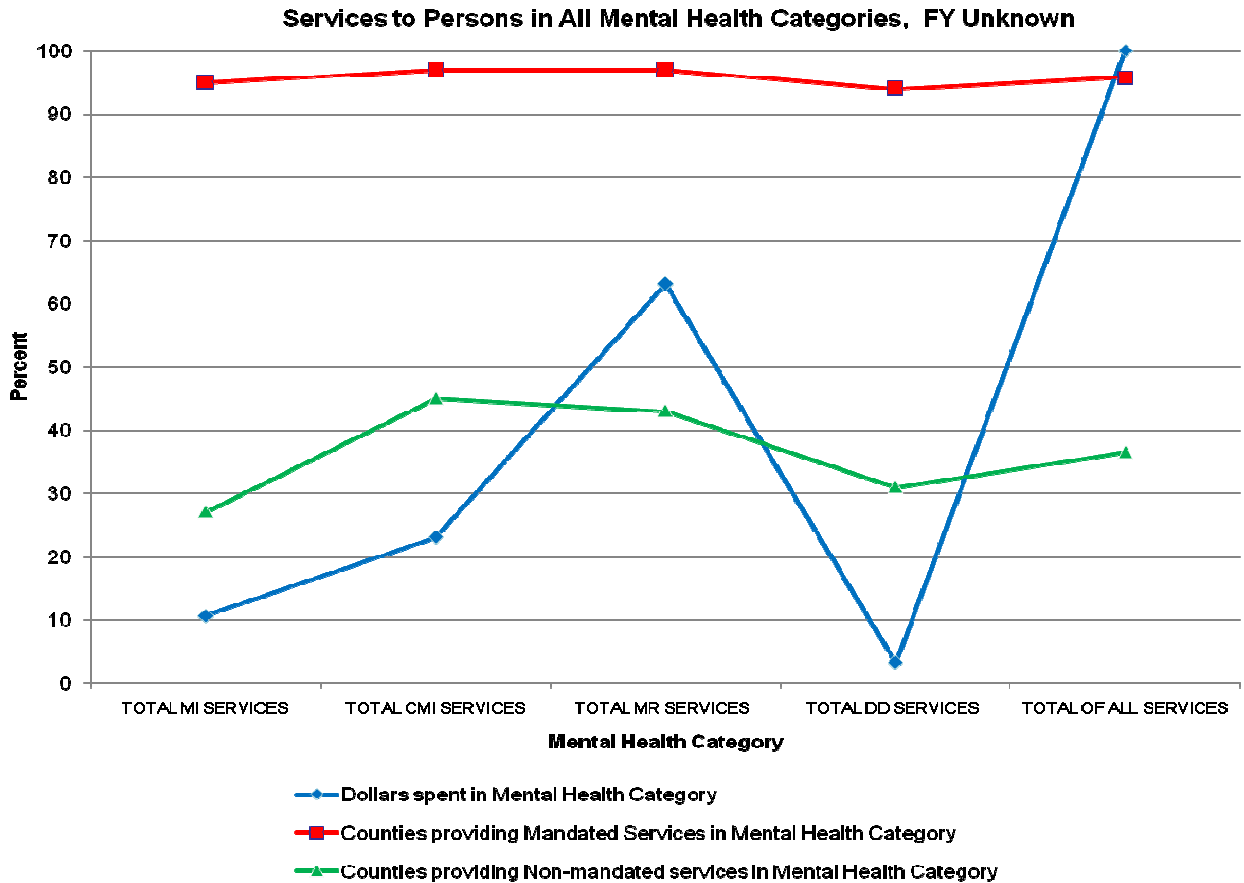


Figure 13 above provides data that suggests some data capability issues. First, counties typically provide mandated services when there is a consumer in need of that service. Second, on average, counties provide less than 50% of voluntary services to consumers. This may be due to low consumer demand or low priority by counties given current rates of revenues and requirements for mandatory services provided.

The data used to create the above data was from an unknown year. We compared this data to the County Management Plans for FY2007-09 (using a single county as an example). In comparing data several discrepancies are noted at the end of this table below.

X = Services planned for FY07-09 as documented by CPCs in the County Management Plan for Adair County considering consumer needs and resources available.
 O = Services provided as reported by CPCs for Adair County: FY Unknown. Circles in Black show services offered in the Unknown FY, however are not planned as documented in the County Management Plans for FY07-09 as completed by CPCs.
 M = Mandated Services

County: Adair						
SERVICE	MI	CMI	MR	DD	BI	
4x03 Information and Referral	●	●	●	●	●	\$0.00
4x04 Consultation.	X O	X O #	●	●	●	\$3,720 #
4x05 Public Education Services	X O	X O #	●	●		\$1,978 #
4x06 Academic Services.						\$0.00
4x11 Direct Administrative.	X O	X O	X O #	●		\$22,829 #
4x12 Purchased Administrative						\$0.00
4x21- 374 Case Management- Medicaid Match.		X O M #	X O M #	X O M		\$8,086 #
4x21- 375 Case Management -100% County Funded						\$0.00
4x21- 399 Other.						\$0.00
4x22 Services Management.		#				\$1,651 #
4x31 Transportation (Non-Sheriff).		X O #	X O M #			\$11,456 #
4x32- 320 Homemaker/Home Health Aides.			X O M			\$0.00
4x32- 321 Chore Services						\$0.00
4x32- 322 Home Management Services			X O M			\$0.00
4x32- 325 Respite.			X*O M			\$0.00
4x32- 326 Guardian/Conservator.						\$0.00
4x32- 327 Representative Payee						\$0.00
4x32- 328 Home/Vehicle Modification			X O M			\$0.00
4x32- 329 Supported Community Living		●	X O M			\$0.00
4x32- 399 Other.		X O M	● M #			\$6,778 #
4x33- 345 Ongoing Rent Subsidy.						\$0.00
4x33- 399 Other						\$0.00
4x41- 305 Outpatient						\$0.00
4x41- 306 Prescription Medication.		#	#			\$3,649 #
4x41- 307 In-Home Nursing			● M			\$0.00
4x41- 399 Other			#			\$60 #
4x42- 305 Outpatient	X O	X O #				\$31,135 #
4x42- 309 Partial Hospitalization.		X O M				\$0.00
4x42- 399 Other.		#				\$900 #
4x43- Evaluation.	X O	X O #				\$15,655 #
4x44- 363 Day Treatment Services		X O M #				\$6,600 #
4x44- 396 Community Support Programs	X O	X O				\$0.00
4x44- 397 Psychiatric Rehabilitation						\$0.00
4x44- 399 Other						\$0.00
4x50- 360 Sheltered Workshop Services.		X** O #	X O M			\$2,114 #
4x50- 362 Work Activity Services		X**O M #	X O M #		other #	\$17,813 #
4x50- 364 Job Placement Services.						\$0.00
4x50- 367 Adult Day Care.		X O M	X O M #			\$2,213 #
4x50- 368 Supported Employment Services		X**O #	X O M #			\$2,898 #
4x50- 369 Enclave		#	X O #			\$41,291 #
4x50- 399 Other.		#	● #			\$18,366 #
4x63- 310 Community Supervised Apartment Living Arrangement (CSALA) 1-5 Beds		X**O #	X O			\$1,505 #
4x63- 314 Residential Care Facility (RCF License) 1-5 Beds		X** O	X O			\$0.00
4x63- 315 Residential Care Facility For The Mentally Retarded (RCF/MR License) 1-5 Beds			X O			\$0.00
4x63- 316 Residential Care Facility For The Mentally Ill (RCF/PMI License) 1-5 Beds						\$0.00
4x63- 317 Nursing Facility (ICF, SNF or ICF/PMI License) 1-5 Beds						\$0.00

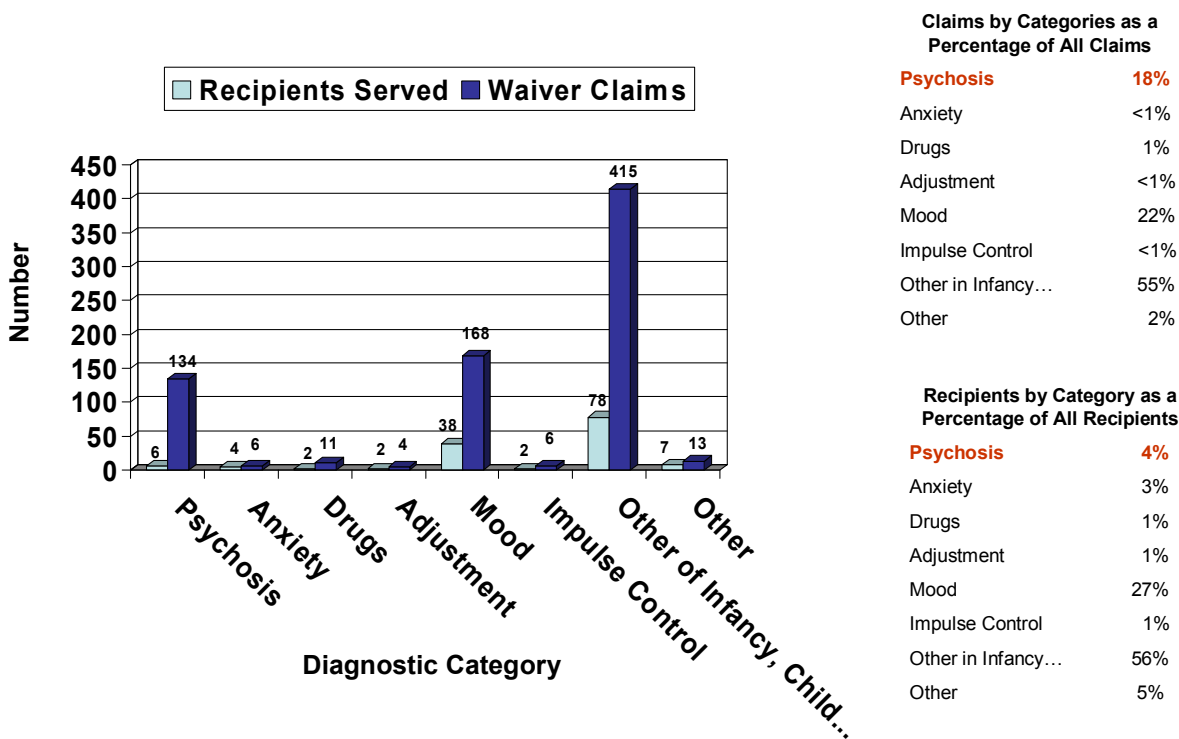
	MI	CMI	MR	DD	BI	FY2006		MI	CMI	MR	DD	BI	FY2006	
						4x63- 318 Intermediate Care Facility For The Mentally Retarded (ICF/MR License) 1-5 Beds							4x63- 318 Intermediate Care Facility For The Mentally Retarded (ICF/MR License) 1-5 Beds	\$0.00
	X**					4x63- 329 Supported Community Living		X**					4x63- 329 Supported Community Living	\$174,716.7
						4x63- 399 Other 1-5 Beds.	\$20,594.7						4x63- 399 Other 1-5 Beds.	\$20,594.7
	X**					4x6x- 310 Community Supervised Apartment Living Arrangement (CSALA) 6 & over Beds		X**					4x6x- 310 Community Supervised Apartment Living Arrangement (CSALA) 6 & over Beds	\$0.00
over	X**					4x6x- 314 Residential Care Facility (RCF) License) 6 & over Beds		X**					4x6x- 314 Residential Care Facility (RCF) License) 6 & over Beds	\$0.00
						4x6x- 315 Residential Care Facility For The Mentally Retarded (RCF/MR License) 6 + Beds							4x6x- 315 Residential Care Facility For The Mentally Retarded (RCF/MR License) 6 + Beds	\$0.00
ll						4x6x- 316 Residential Care Facility For The Mentally Ill (RCF/PMI License) 6 & over Beds							4x6x- 316 Residential Care Facility For The Mentally Ill (RCF/PMI License) 6 & over Beds	\$3,516.7
nsce)						4x6x- 317 Nursing Facility (ICF, SNF) ICF/PMI License) 6 & over Beds							4x6x- 317 Nursing Facility (ICF, SNF) ICF/PMI License) 6 & over Beds	\$0.00
						4x6x- 318 Intermediate Care Facility For The Mentally Retarded (ICF/MR License) 6 + Beds							4x6x- 318 Intermediate Care Facility For The Mentally Retarded (ICF/MR License) 6 + Beds	\$50,230.0
						4x6x- 399 Other 6 & over Beds..	\$0.00						4x6x- 399 Other 6 & over Beds..	\$0.00
	X O M	X O				4x71- 319 Inpatient/State Mental Health Institutes		X O M	X O				4x71- 319 Inpatient/State Mental Health Institutes	\$6,018.0
						4x71- 399 Other	\$0.00						4x71- 399 Other	\$0.00
						4x72- 319 Inpatient/State Hospital Schools							4x72- 319 Inpatient/State Hospital Schools	\$64,661.4
						4x72- 399 Other	\$0.00						4x72- 399 Other	\$0.00
						4x73- 319 Inpatient/Community Hospital							4x73- 319 Inpatient/Community Hospital	\$9,148.0
						4x73- 399 Other	\$0.00						4x73- 399 Other	\$0.00
cont.	X O M	X O				4x74- 380 Diagnostic Evaluations Related To Commitment.		X O M	X O				4x74- 380 Diagnostic Evaluations Related To Commitment.	\$0.00
	X O M	X O				4x74- 383 Sheriff Transportation	\$133.0	X O M	X O				4x74- 383 Sheriff Transportation	\$133.0
	X O M	X O				4x74- 385 Legal Representation for Commitment	\$0.00	X O M	X O				4x74- 385 Legal Representation for Commitment	\$0.00
	X O M	X O				4x74- 385 Mental Health Advocates	\$5,053.0	X O M	X O				4x74- 385 Mental Health Advocates	\$5,053.0
						4x74- 399 Other	\$0.00						4x74- 399 Other	\$0.00
total	\$39,782	\$19,100				Total Expenditures for FY 2006 (however expenditure data does not correspond to service utilization as the FY for service utilization is unknown).		\$39,782	\$19,100				Total Expenditures for FY 2006 (however expenditure data does not correspond to service utilization as the FY for service utilization is unknown).	\$79,400

This Table provides an example of gaps in data reporting systems and the Department's current information capabilities. Three main problems are documented in this example: 1) The FY for services provided as reported by CPCs is unknown; 2) Because the FY for service provision is unknown, service CPCs is unknown; 2) Because 1 and 3) Projected service utilization data cannot be linked to expenditure data; and 3) Projected service delivery options provided by the County Management Plans for FY07-09, in some cases, do not account for mandated services. Management Plans for FY07-09, in some cases, do not account for mandated services. Management Plans for FY07-09, in some cases, do not account for mandated services. Management Plans for FY07-09, in some cases, do not account for mandated services.

Recommendations: To improve the IT capabilities of the Department toward the goal of documenting and improving the IT capabilities of the Department, the number of services provided to whom and when, the number of services provided (both mandated and non-mandated), and expenditures for any fiscal year as needed for quality assurance (mandated), and expenditures for any fiscal year as needed for quality assurance (mandated).

When we examined Medicaid Waiver programs, some unique discrepancies showed up between number of claims for a particular diagnosis and the disproportionate share of expenditures related to these claims. For example, below is the information for the Children's Mental Health Waiver. The data shows that while only 4% (n=6) of all recipients were given a diagnosis of Psychosis, psychosis as a major diagnostic category resulted in 18% (N=134) of all claims. Outside of the fact that psychosis is a difficult to treat disorder and requires a disproportionate number of claims (higher service utilization), we also need to exam the possibility of alternative hypotheses. First we must ask if there is a global assessment criterion for psychosis and if so are youth receiving treatment in line with adequate assessment criteria? Second we must ask the extent to which there are evidenced-based treatments for youth with psychosis and whether such treatments are globally utilized. Finally, we have no information with regard to outcomes for this vulnerable population. We do not have access to data at the treatment/services information level or quality assurance level. Developing such IT capabilities would likely lead to the best possible outcomes for youth and their families in a fiscally responsible approach to service provision.

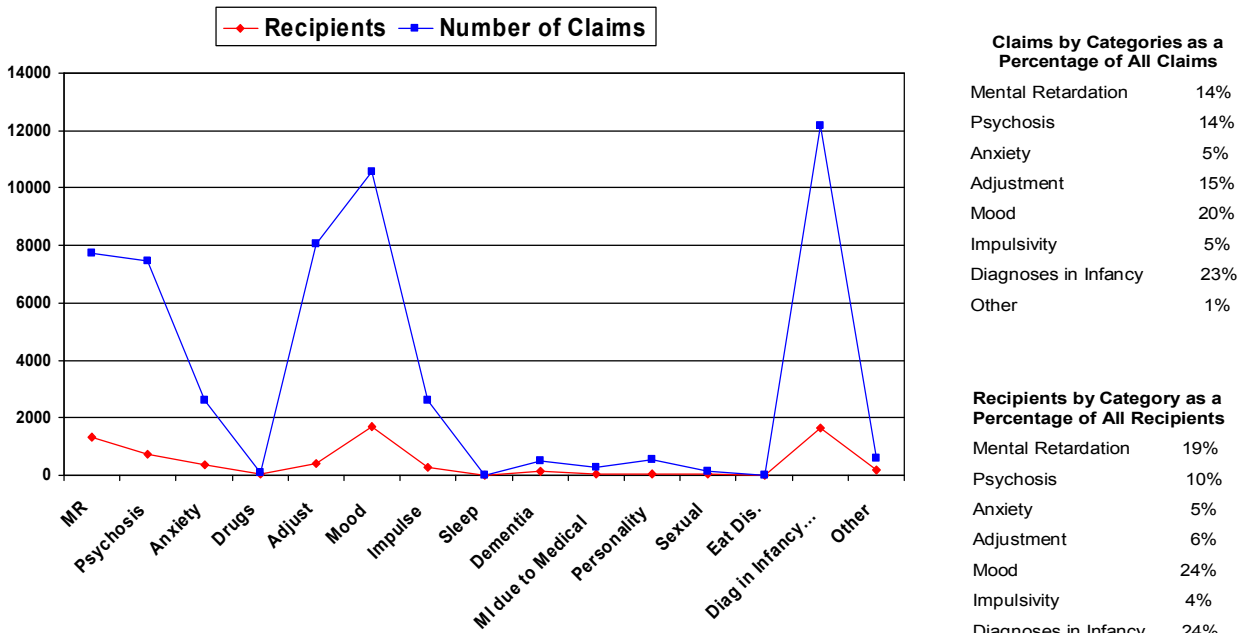
Children's Mental Health Waiver Claims by MI Primary Diagnosis First Date of Service in State Fiscal Year 2006



Note: There were an additional 268 Recipients who had no diagnosis associated with 2,995 Waiver Claims. It cannot be determined what portion of these claims were for serious emotional disturbances or for general medical problems and therefore were not included.

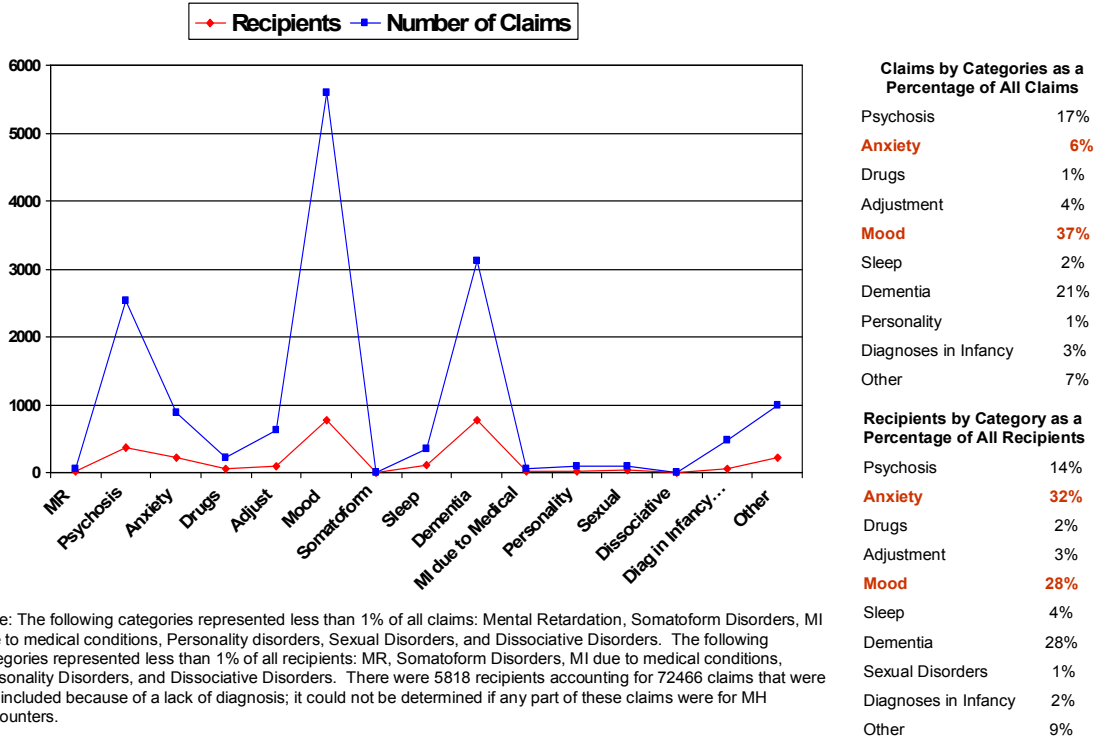
Following are Waiver Program data for other populations. While similar findings can be seen in most of these Waiver programs, one other point is worth noting. The following programs show high levels of co-occurring psychiatric problems. For example, it is noted in the literature that persons with MR suffer from co-occurring disorders between 40-70%. Such a finding again provides support for globalized assessment, adequate resources and training in appropriate treatment for persons with co-occurring disorders, and better IT capacity to reach down to the service level of care provided. One other finding should be noted. In the Elderly Waiver, while 32% of older adults experience anxiety; anxiety only accounts for 6% of all claims suggesting possible under-treatment of this major diagnostic categories in older adults.

Mental Retardation Waiver Recipients and Claim Counts by MI Primary Diagnosis: 2006



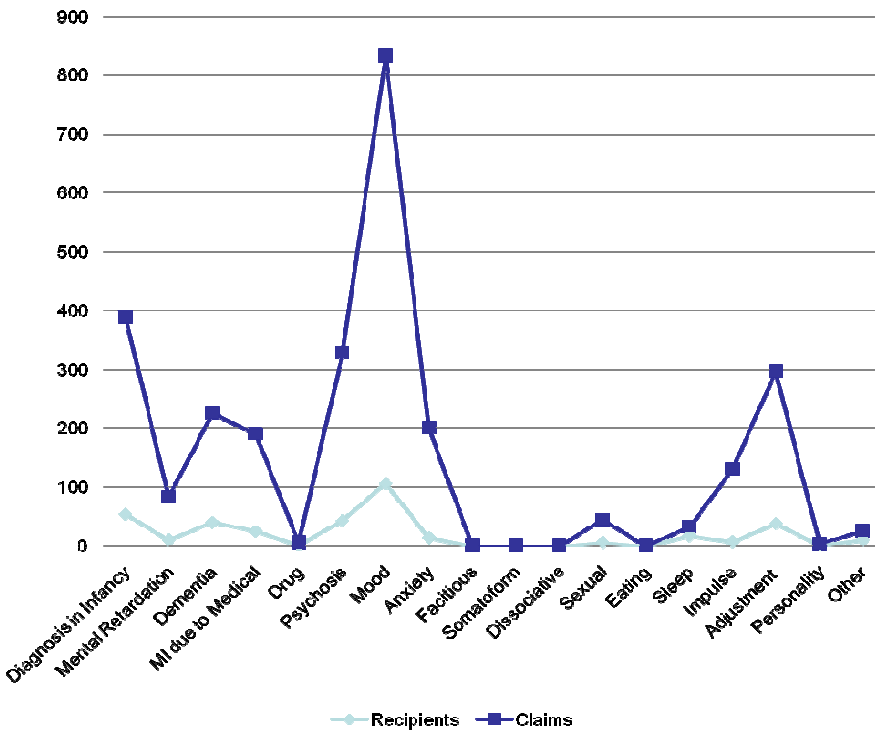
Note: The following categories represented less than 1% of all claims: drugs, sleep disorders, dementia, MI due to medical conditions, sexual disorders, and eating disorders. The following represent less than 1% of all recipients: drugs, sleep, Dementia, MI due to medical conditions, personality disorders, sexual disorders, and eating disorders.

Elderly Waiver Recipients and Claim Counts by MI Primary Diagnosis: 2006



Note: The following categories represented less than 1% of all claims: Mental Retardation, Somatoform Disorders, MI due to medical conditions, Personality disorders, Sexual Disorders, and Dissociative Disorders. The following categories represented less than 1% of all recipients: MR, Somatoform Disorders, MI due to medical conditions, Personality Disorders, and Dissociative Disorders. There were 5818 recipients accounting for 72466 claims that were not included because of a lack of diagnosis; it could not be determined if any part of these claims were for MH encounters.

Brain Injury Waiver Recipients and Claim Counts by Primary MI Diagnosis: 2006



Recipients by category as % of all Recipients

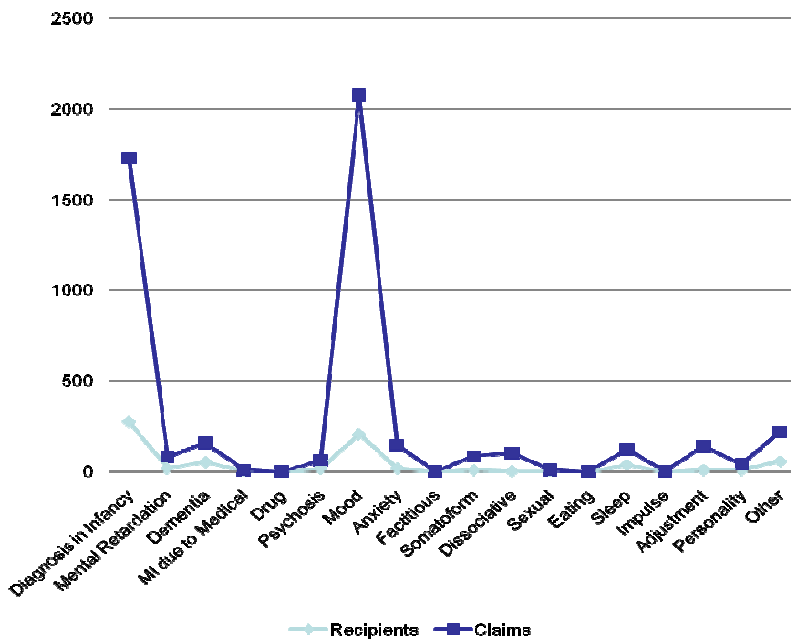
Diagnosis in Infancy	14
Mental Retardation	3
Dementia	11
MI due to Medical	7
Drug	1
Psychosis	11
Mood	28
Anxiety	4
Sexual	2
Sleep	5
Impulse	2
Adjustment	10
Personality	1
Other	3

Claims by category as % of all Claims

Diagnosis in Infancy	14
Mental Retardation	3
Dementia	8
MI due to Medical	7
Psychosis	12
Mood	30
Anxiety	7
Sexual	2
Sleep	1
Impulse	5
Adjustment	11
Other	1

The following categories represented less than 1% of all recipients: Factitious, Somatoform, Dissociative, and Eating Disorders. The following categories represented less than 1% of all claims: Drug, Factitious, Somatoform, Dissociative, Eating, and Personality Disorders.

Ill & Handicapped Waiver Recipients and Claim Counts by Primary Diagnosis: 2006



Recipients by category as % of all recipients

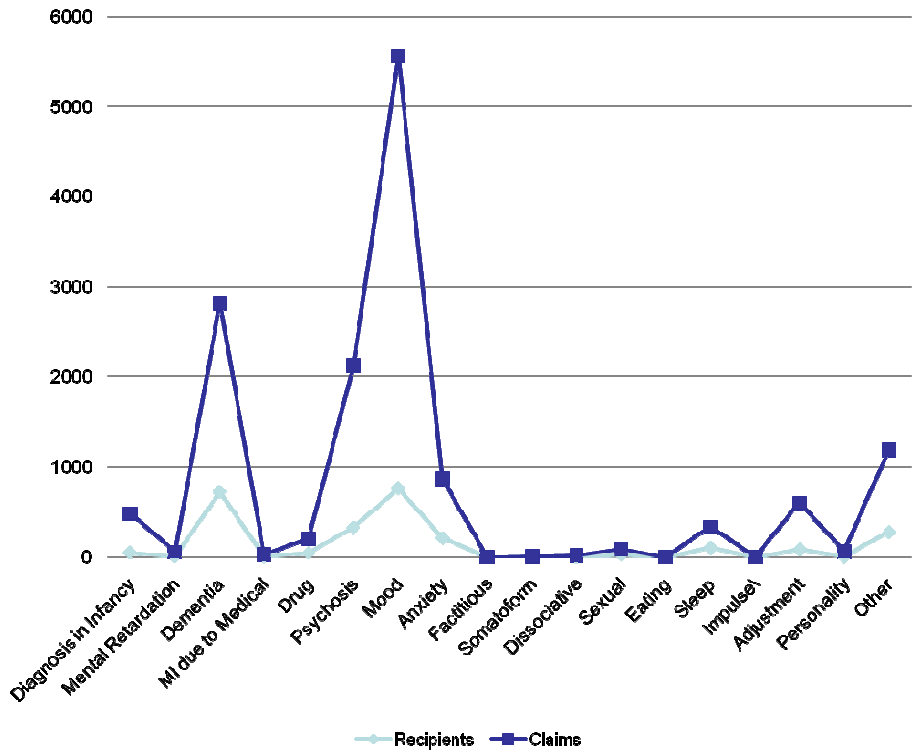
Diagnosis in Infancy	37
Mental Retardation	3
Dementia	7
MI due to Medical	1
Psychosis	2
Mood	28
Anxiety	3
Somatoform	1
Dissociative	1
Sexual	1
Sleep	5
Adjustment	1
Personality	1
Other	8

Claims by category as % of all claims

Diagnosis in Infancy	34
Mental Retardation	2
Dementia	3
Psychosis	1
Mood	41
Anxiety	3
Somatoform	2
Dissociative	2
Sleep	2
Adjustment	3
Personality	1
Other	4

The following categories represented less than 1% of all recipients: Drug, Factitious, Eating, and Impulse Disorders. The following categories represented less than 1% of all claims: MI due to Medical, Drug, Factitious, Sexual, Eating, and Impulse Disorders.

Physical Disabilities Waiver Recipients and Claims Counts by Primary Diagnosis: 2006



Recipients by category as % of all recipients

Diagnosis in Infancy	2
Dementia	27
Drug	2
Psychosis	12
Mood	28
Anxiety	8
Sexual	1
Sleep	4
Adjustment	3
Other	10

Claims by category as % of all claims

Diagnosis in Infancy	3
Dementia	19
Drug	1
Psychosis	15
Mood	38
Anxiety	6
Sexual	1
Sleep	2
Adjustment	4
Other	8

Note: The following categories represented less than 1% of recipients: Mental Retardation, MI due to Medical, Factitious, Somatoform, Dissociative, Eating, Impulse, and Personality Disorders. The following categories represented less than 1% of all claims: Mental Retardation, MI due to Medical, Factitious, Somatoform, Dissociative, Eating, Impulse, and Personality Disorders.

C. Conclusions

The data in this report represents a first stage of in-depth data analysis with regard to the mental health and disabilities services delivery systems. While this report represents a first stage of data mining, ongoing analyses will be continued. However, we have enough data now to show the inconsistencies between data bases with regard to fully understanding the revenues and expenditures in the system, how many people are actually served, and the treatment they receive. A good deal of these problems could be addressed by expanding the Department’s IT capabilities. First, some of the databases provide good data, however many provide conflicting data making analysis and interpretation a major challenge. The Department would benefit from integrating some of the databases that contain more reliable and valid information. Second, having better data for analysis would come from the extent to which different sources could/would use similar data sets. Third, a good amount of data is lost because much of the data reporting is not mandatory. Mandatory reporting must be implemented in order to more fully understand who is treated, for what and where. Finally, the Department must implement an outcomes measurement program to ascertain the effects on investments in key programs, services and initiatives. Currently this area is significantly under-funded.