

Developing the Actuarial Basis For a Quality Driven Public Mental Health System

Prepared by:
Dale A. Jarvis, CPA
Barbara J. Mauer, MSW CMC
MCCP Healthcare Consulting Inc.
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This is a work in progress; we welcome your comments and additions. Please e-mail either of us (Dale@mcpphc.com, Barbara@mcpphc.com) with your thoughts.

Table of Contents

Background	3
Problem Statement	3
An Approach to Constructing a New Actuarial Model	5
Proposed Project.....	9
Attachment A: LOCUS Sites	12
Attachment B: San Mateo County LOCUS Pilot.....	13

Background

With the publication of *Priority Areas for National Action: Transforming Health Care Quality*ⁱ, the Institute of Medicine's 2003 follow up to *Crossing the Quality Chasm: A New Health System for the 21st Century*ⁱⁱ, a major opportunity and challenge has appeared for the public mental health system. The *Quality Chasm* recommended the systematic identification of priority areas for national quality improvement; *Priority Areas* proposes twenty priority areas for transforming health care nationally. Included in this list are **major depression** (screening and treatment) and **severe and persistent mental illness** (focus on treatment in the public sector). Their inclusion as priority areas, in the context of the Report from the President's New Freedom Commission on Mental Health (with its overarching goal of a transformed system focused on recovery and Goal 5: Excellent Mental Health Care is Delivered and Research is Accelerated) creates considerable leverage to improve and focus the delivery system.ⁱⁱⁱ

In his article, *A User's Manual for the IOM's "Quality Chasm" Report*, Berwick describes the framework that is embedded in the report's structure—the "framework comprises four levels of interest: the experience of patients (Level A), the functioning of small units of care delivery (or "microsystems") (Level B); the functioning of the organizations that house or otherwise support microsystems (Level C); and the environment of policy, payment, regulation, accreditation, and other such factors (Level D) that shape the behavior, interests and opportunities of the organizations at Level C."^{iv}

In considering the impact of Level D on the healthcare system, the *Quality Chasm* report devotes a chapter to *Aligning Payment Policies with Quality Improvement*, noting that "the goals of any payment method should be to reward high-quality care and to permit the development of more effective ways of delivering care to improve the value obtained for the resources expended."^v The President's New Freedom Commission on Mental Health states that, "treatment and services based on proven effectiveness and consumer preference—not just on tradition or outmoded regulations—must be the basis for reimbursements"^{vi}.

The focus of this proposal is on historic, current and future payment methodologies, their impact on creating a quality public mental health system, and the need to develop an improved basis for actuarially sound payment amount and methods.

Problem Statement

The public mental health system is a state level system funded by state and local general funds, federal block grant funds and the federal/state Medicaid program (historically driven by state level policy within federal parameters). There is considerable variability among states in their level of funding, financial/structural arrangements, and service modalities/definitions for the purchase and delivery of public mental health services. Meanwhile, in the private sector, the relentless downward pressure on behavioral health PMPMs has also reduced overall system resources, shifting cost from the private sector to the public sector.^{vii} The private sector continues to "vote with their dollars for carve-

outs”,^{viii} and the national dialogue about parity is often framed within the assumption that managed care carve-outs are a key piece of implementation, borne out by the recent experience in California.^{ix} In the midst of this “non-system”, reports have recently emerged from some states indicating that the public mental health system is funded at somewhere around half the level that is needed.^x

Reports of inadequate funding for public mental health preceded the current fiscal crisis in state Medicaid programs; rather than addressing these shortfalls, many states have adopted significant new reductions in public mental health services. In addition, managed care methods in Medicaid mental health programs have added complexity. Roughly half of the states have federal waivers for managed care of their Medicaid mental health programs. Where the state has structured the Medicaid program into a carve-out, much of the focus has been on reduction in cost, particularly for inpatient services. Assumptions regarding utilization and cost have often been built from commercial models or the general Medicaid population rather than the public mental health target population, generally identified as adults who are seriously and persistently mentally ill (SPMI) or children/youth who are seriously emotionally disturbed (SED).

The problem is that, with all of this variability, the public mental health system does not have the kind of cost and utilization information that has been collected over the years by health plans regarding the delivery of services to a defined population. The available data reflects lack of access to appropriate services, services that may not be as effective as newly emerging evidence-based practices (EBPs), and services that have been fragmented, with cost shifting to and from other payors. This makes it extremely difficult for anyone to answer the question: **what would it cost to provide quality services in the public mental health system?**

The implementation of the Balanced Budget Act (BBA) rules by the Center for Medicare and Medicaid Services (CMS) has created new urgency regarding the need for actuarially sound methods of forecasting and tracking service delivery in the public mental health system. The Final Rules include a very important change in the Federal financing of Medicaid managed care programs - the repeal of the **Upper Payment Limit (UPL)**, replacing it with the requirement for States to set **Actuarially Sound Capitation Rates**.

The Final Rule’s Ratesetting Checklist states that States must document that the actuarially sound capitation rates only include services covered in the Medicaid State Plan. Concerns have been raised about whether CMS will cover the Evidence Based Practices (EBPs) that have been developed by a sister agency, the Substance Abuse and Mental Health Services Administration (SAMHSA). At a recent conference of the National Association of State Mental Health Program Directors, a representative from CMS gave a resounding “MAYBE” to the question of whether Medicaid will pay for EBPs.

The Final Rule’s Ratesetting Checklist also describes the standard actuarial procedure related to adjustments of historical utilization data based on the States mental health system design.

“These adjustments increase or decrease utilization to levels that have not been achieved in the base data, but are realistically attainable CMS program goals. States may pay for the amount, duration and scope of State plan services that States expect to be delivered under a managed care contract. Thus, States may adjust the capitation rate to cover services such as EPSDT or prenatal care at the rate the State wants the service to be delivered to the enrolled population. The RO should check to ensure that the State has a contract clause for using mechanisms such as financial penalties if service delivery targets are not met or incentives for when targets are met.”^{xi}

Actuaries have accumulated large quantities of data to assist in actuarial projections of medical costs related to the variety of medical specialties for different Medicaid eligibility categories. If, for example, a state determined that Medicaid individuals diagnosed with diabetes were not being appropriately screened for diabetic retinopathy, and a quality initiative would result in doubling the rate of screenings, the calculation of the increased cost of this initiative would be fairly straightforward. The public mental health system needs to develop the same capacity for forecasting and costing service demand based upon delivering best practice services.

An Approach to Constructing a New Actuarial Model

Simply defined, an actuarially based approach would include the following elements for the Medicaid population:

- Penetration assumptions (by age groups or aid codes)
- Case mix assumptions
- Utilization assumptions
- Cost assumptions

In the past decade there has been substantial progress within the mental health community in developing such models. Anthony Broskowski, PhD. of Parteo Solutions, and Dale Jarvis, CPA, MCPP Healthcare Consulting, among others, have developed Revenue/Expense—Capacity/Demand models for numerous mental health systems throughout the country. These models have been based on correlating historical utilization and cost data with new service delivery designs.

Penetration Assumptions

The commercial HMO market has historically seen penetration rates at 7% of covered lives for behavioral health services. In the mid-90s, a white paper drafted jointly by the National Association of State Mental Health Program Directors (NASMHPD) and the American Managed Behavioral Healthcare Association (AMBHA) suggested network performance standards that included “to 10 percent of public sector enrollees receive service”.^{xii} AMBHA included penetration rates by age cohorts as one of the access indicators in their Performance Measures for Managed Behavioral Healthcare Programs.

Use of historic penetration rates formalizes the impact of access issues, where not all Medicaid enrollees needing or wanting mental health services have been able to receive them, due to system capacity or other barriers. To address this issue, another method for development of penetration benchmarks is to use prevalence data and develop a gap analysis.

Penetration benchmarks by age groups might result in different rates for each age group. For example, The Center for Mental Health Services estimates that the prevalence of SED in children between the ages of nine and seventeen ranges from 9% to 13%. If a more stringent definition is used, in which children suffer “extreme functional impairment,” then the range is from 5% to 9%. The CMHS has found that the prevalence rate is higher for children living in low socioeconomic circumstances and recommends that states with a poverty rate more than 5% higher than the national average should use an estimate at the upper end of the prevalence range (13%), while those with a poverty rate more than 5% below the national average should use a prevalence estimate at the lower end of the range (9%), while States within 2.5% of the national average should use estimates in the middle of this range (11%). For the Medicaid population, this would suggest that children might be seen at rates higher than 10%.

Alternatively Medicaid penetration assumptions could be calculated by aid codes, where the disabled population would be expected to have a higher rate of utilization than the TANF population.

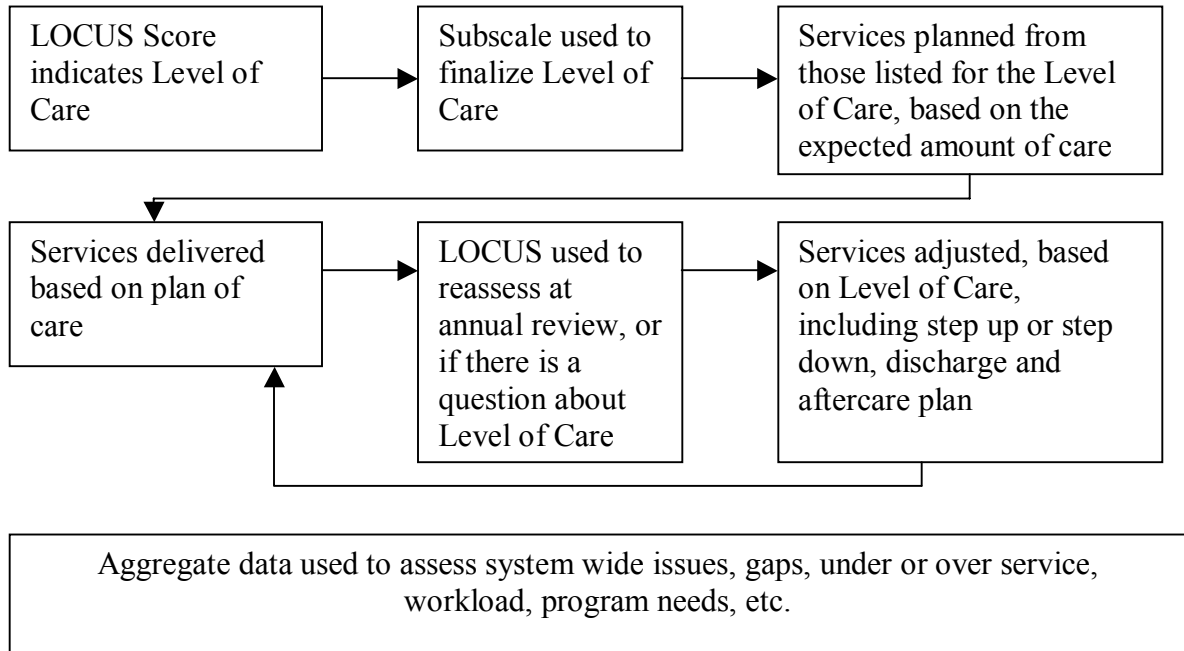
Case Mix Assumptions

Case mix is used in health care planning to distribute projections of the numbers of people using services into subgroups based on estimated level of need, in order to project varying levels of utilization within the total population of service users.

The models built by MCPP Healthcare Consulting (MCPP) have been grounded in service delivery designs that establish Levels of Care to determine case mix for outpatient services. Levels of Care provide benchmarks that can be established and used to inform individualized treatment planning for all consumers entering and being served in the system, whether in a county clinic, community based organization, or a network of independent practitioners. In addition, Levels of Care:

- Assure that individuals seeking to access care throughout a system can reasonably expect to be authorized and offered similar services in kind and amount for similar needs.
- Focus dedicated care managers on oversight of the most intensive and expensive services. Rather than creating a large centralized care management staff, a Level of Care system delegates to outpatient supervisors and clinicians the oversight of much of the ongoing delivery of care and utilizes aggregate data to track trends in the delivery system.
- Align demand for service with capacity and manage financial risk. Levels of Care make it possible to project the mix and amount of services that are needed in the system, to analyze caseloads, to assess the gap between projected need and current resources, and to make policy decisions about where to focus resources.

Recently, several West Coast sites have designed Level of Care systems using the LOCUS[®]. It is a national tool, with adult and child/youth versions, tested for reliability and validity and being adopted in many sites nationally (see Attachment A). It was developed by the American Association of Community Psychiatrists to guide assessment, level of care placement decisions, continued stay criteria, and quality monitoring. The following schematic summarizes the approach being developed in San Mateo County, California.



Attachment B summarizes the San Mateo pilot of the LOCUS/Level of Care System. A service menu was cross-walked to the LOCUS Levels of Care, essentially defining the benefits available at a specific Level of Care. Each Level of Care includes a projection of the range and average amount of clinician hours, based upon current data and the judgment of the planning work group. The pilot will test these assumptions and then a refined Revenue/Expense—Capacity/Demand model will be developed.

Between 1997 and 2000 MCPP completed utilization studies of eight communities in Washington and Oregon. Three communities were in Western Washington, two were in Eastern Washington, and three were in Oregon. The Washington State projects were in five different Regional Support Networks (RSNs). In total, two projects were in primarily rural areas, four were in primarily urban areas, and two were in mixed rural/urban areas.

This series of utilization studies included an analysis of historical and projected case mix by level of need. In the eight communities, clients were categorized into somewhere

between two and five levels of need (e.g. low need and high need; levels 1, 2a, 2b, 3a, 3b). In all instances, the mental health system/providers were attempting to design a case mix taxonomy that would allow clinicians to properly provide relatively low levels of service to low-need clients, high levels of service to high-need clients, etc.

These eight projects and the accompanying data were studied for the development of benchmarks. In six of the eight projects it was possible to create cross-community comparisons based on a low, medium and high level of need taxonomy. The two communities that used a two-level structure (one Oregon, one Washington) were not included. The case mix of the six communities was averaged to arrive at a single set of case mix ratios, rounding the figures to the nearest percentage point (low: 42%, medium: 45% and high: 13%).

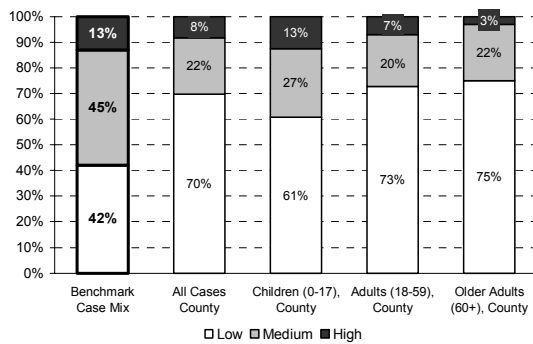
The following chart is an example that displays the benchmark data compared to actual historical utilization for one county mental health system.

County County Outpatient Mental Health: July 2001 through June 2002
Clinician Hours per Case and Case Mix - Benchmark Comparison No. 1: Breakout by Age Group

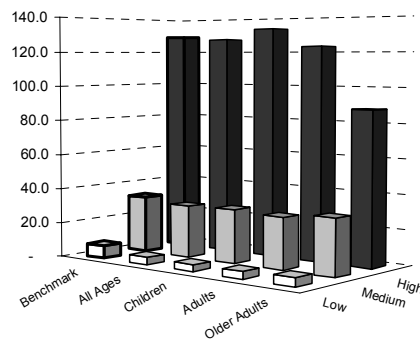
Case Mix Benchmark		County Case Mix @ Benchmark Cohorts				Clin Hrs/Case Benchmark		County Clin Hrs per Case @ Benchmark Cohorts			
Cohort Name & Clin Hrs per Case	Benchmark Case Mix	All Cases County	Children (0-17) County	Adults (18-59) County	Older Adults (60+) County	Cohort Name & Clin Hrs per Case	Average Clin Hrs per Case	All Cases County	Children (0-17) County	Adults (18-59) County	Older Adults (60+) County
Low: 0-15	42%	70%	61%	73%	75%	Low: 0-15	7.3	4.3	4.0	4.3	5.1
Med: 16-60	45%	22%	27%	20%	22%	Med: 16-60	32.6	30.1	30.7	29.5	32.1
High: 61+	13%	8%	13%	7%	3%	High: 61+	129.1	127.4	133.4	123.2	88.1
All Cases	100%	100%	100%	100%	100%	All Cases	34.5	20.1	27.4	17.8	13.6

Share of Total Hours Accounted for by Highest Utilizing 15% of Clientele:
72% 70% 73% 71%

Case Mix Graphical Summary:



Clinician Hour per Case Graphical Summary:



Utilization Assumptions

The forecasting process uses clinician, or standard, hours calculated by using a conversion table to convert group activities back to 1:1. Using this method, de-identified client encounter data can be used to understand and forecast service utilization, even though clients receive varying mixes of individual and group services. The following example shows the conversion factors in the second column, and the county planning

team’s projections of utilization, by modality, by age group, by Level of Care. The final row compares projections for the future against historical data.

Mental Health - Client Hours per Case by Level of Care & Modality

Modality	Clients per Clinician	Low			Medium			High		
		Child & Adol	Adult	Older Adult	Child & Adol	Adult	Older Adult	Child & Adol	Adult	Older Adult
Assessment/Intake	1	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
Therapeutic Behav Svcs	1				12.0			54.0		
Individual Therapy	1	5.5	5.0	5.0	6.0	6.0	6.0	20.0	10.0	10.0
Medication Mgmt	1	0.5	1.0	1.0	2.0	3.0	4.0	4.0	12.0	12.0
Case Mgmt	1					4.0	4.0		70.0	74.0
Day Treatment	10							240.0		
Group Therapy	6					54.0	54.0		102.0	42.0
Collateral	1				6.0	4.0	4.0	25.0	18.0	24.0
Client Hours per Case:		7.0	7.0	7.0	27.0	72.0	74.0	345.0	214.0	164.0
Clinician Hours per Case:		7.0	7.0	7.0	27.0	27.0	29.0	129.0	129.0	129.0
Benchmark:		1-15 Clinician Hrs/Case Average: 7.3			16-60 Clinician Hrs/Case Average: 32.6			61+ Clinician Hrs/Case Average: 129.1		
Historical Clinician Hour Averages:		7.1	5.1	4.8	31.1	26.0	19.4	141.6	145.4	76.8

Cost Assumptions

Different systems use different cost per hour figures to estimate service cost and set payment rates. Some systems use client hours for these calculations and some use clinician (or standardized) hours. The two methods diverge when there is a substantial amount of group-type hours where it takes only one clinician to serve several clients (e.g. in a group that consisted of 6 clients and 1 clinician that lasted for 1 hour, 6 clients hours would be provided, utilizing one clinician (or standard) hour).

MCPH has worked nationally with staff members from over 100 community-based mental health providers to estimate cost per service hour in their organizations. From this work it has been determined that an organization “running on all cylinders” must address: optimal productivity levels, appropriate clinician mix (proper number of physicians, nurses, psychologists, masters level clinicians, bachelor level clinicians, and paraprofessionals), community-based public mental health salaries (salaries paid to community mental health staff are not optimum, being so low as to cause significant staff turnover and use of community mental health positions as stepping stones to higher paying jobs) and prudent administrative costs. In the recently completed actuarial review of Washington State’s Medicaid mental health program, a fully loaded (administration at 18%) cost per hour for individual service was priced at \$83.07.

Proposed Project

The Substance Abuse and Mental Health Services Administration (SAMHSA) and The Robert Wood Johnson Foundation (RWJ) are supporting the Implementing Evidence Based Practices Project. This project is focused on people who have severe mental illness; these people are most frequently served in the public mental health system (<http://www.mentalhealthpractices.org/>).

There are six areas that have been researched. Resource kits have been developed and multi-state demonstrations of the resource kits have been underway. The six areas are described below, based on the website materials:

Illness Management and Recovery: This is a program of weekly sessions where specially trained MH practitioners help people develop personal strategies for coping with mental illness and moving forward in their lives. The program emphasizes helping people set and pursue personal goals and become better able to realize their vision of recovery

Medication Management Approaches In Psychiatry (Medmap): This focuses on using medication in a systematic and effective way, providing guidelines and steps for decision-making based on current evidence and outcomes, monitoring and recording information about medication results, and involving consumers in the decision-making process

Assertive Community Treatment (ACT): This program is for people who experience the most severe symptoms of mental illness. The goal is to help people stay out of the hospital and develop skills for living in the community. Services are provided by a team of practitioners, are available whenever and wherever needed, 24-hours a day, and are provided for as long as they are wanted and needed.

Family Psychoeducation: This involves a strong partnership between consumers, families and supporters, and practitioners. People work toward recovery by developing better skills for overcoming everyday problems and illness-related issues, developing social support, and improving communication with treatment providers.

Supported Employment: This is a well-defined approach to helping people with mental illness find and keep competitive employment. These programs are for anyone who expresses the desire to work. The programs are staffed by employment specialists who work with the treatment team to integrate services. They help people look for jobs soon after entering the program, and provide support as long as consumers want the assistance.

Integrated Dual Disorders Treatment: This treatment approach is for people who have mental illness and addiction disorders, offering mental health and substance abuse services together, in one setting, at the same time. A wide variety of services are offered in a stage-wise fashion because some services are important early in treatment, while others are important later on.

What has been missing from the MCPP modeling work described above has been cost and utilization data regarding EBPs—although, in each project, the clinicians on the design team tried to estimate this. Actual data from systems implementing high fidelity EBPs would enable forecasting the cost and utilization factors associated with changing an existing system by either substituting or adding EBPs into the service mix. The following table suggests a possible relationship between the EBPs listed above and the LOCUS levels of care.

	LOCUS Level 1 Recovery Maintenance and Health Management	LOCUS Level 2 Low Intensity Community Based Services	LOCUS Level 3 High Intensity Community Based Services	LOCUS Level 4 Medically Monitored Non- Residential Services
Illness Management and Recovery			X	X
Medication Management Approaches (MEDMAP)	X	X	X	X
Assertive Community Treatment				X
Family Psychoeducation			X	X
Supported Employment		X	X	X
Integrated Dual Disorders Treatment	X	X	X	X

There are fifty pilot sites in seven states currently implementing these EBPs. The proposed project would involve gathering cost and utilization data from selected, representative sites. Access to de-identified encounter data would provide a new source of information for examining cost and utilization profiles associated with the delivery of EBPs. The pilot sites operate in a variety of financing models, and are at various stages of achieving fidelity to the EBP being implemented. The data would be organized with these considerations in mind, in order to understand the variability of factors nationally. Some sites may be part of existing LOCUS Level of Care systems, which would add richness to the use of the data (see Attachment A).

These data would then be utilized to develop a model that projects population-based penetration, case mix, utilization and cost. The EBP data would inform the case mix, utilization and cost estimates and either supplement or replace the level of care estimates described above. All HIPAA related procedures would be observed to protect personal health information (PHI).

Attachment A: LOCUS Sites

Attachment B: San Mateo County LOCUS Pilot

San Mateo County Mental Health LOCUS Pilot (abbreviated description)

What is the LOCUS Pilot?

- The Pilot is a time limited period in which we will use the LOCUS to assess and determine a Level of Care score and subscale score on all consumers entering the system and on all current consumers as they come up for their annual review. We will be doing this in as many clinical sites as possible, within county programs and community based providers, and hopefully, with some network providers as well. The focus will be on outpatient services, for which the LOCUS establishes four different levels of care.
- In addition to piloting the LOCUS throughout our system, we will also be testing our application of the LOCUS scores. We have developed an initial service matrix that crosswalks both current and needed services to the LOCUS Levels of Care and estimates the number of clinician hours, both the range and the average, that an adult consumer would receive at each of the four levels of care. We need to test this set of assumptions against actual service utilization and financial feasibility.
- A work group drafted the matrix, starting with a service map that was developed as a part of the Strategic Plan. The service map assessed which services were available in San Mateo County and whether there were sufficient services, when available, based on the judgment of the strategic planning team.
- The work group included services that are not currently available in our system, or available to a limited number of people due to insufficient capacity or program structure. During the Pilot, we will only be able to provide consumers with the services now available, with the capacity now available. The Pilot seeks to understand more about the match between what people need and what we have now.
- The service matrix and estimates of service hours will be adjusted at the end of the Pilot based on what we have learned and our intent regarding the future use of Levels of Care.

San Mateo County Mental Health

**LOCUS Pilot
Level of Care/Service Matrix**

Levels Of Care Non-Acute Annual Clinician Hours, Range and Average	LOCUS Level 1 Recovery Maintenance and Health Management 0-15 hrs Avg: 6	LOCUS Level 2 Low Intensity Community Based Services 16-40 hrs Avg: 25	LOCUS Level 3 High Intensity Community Based Services 41-99 hrs Avg: 60	LOCUS Level 4 Medically Monitored Non- Residential Services 100-400 hrs Avg: 150
Outpatient Treatment Services				
Service Modalities				
Individual tx/counseling	X	X	X	X
Family tx/counseling	X	X	X	X
Group tx/counseling	X	X	X	X
Dual dx tx groups	X	X	X	X
Psychiatric evaluation	X	X	X	X
Psychiatric consultation	X	X	X	X
Psychiatric management /prescribing (routine and urgent, clinic or 1:1)	X	X	X	X
Advice nurse (consult on medication issues)	X	X	X	X
ECT				X
Lab service	X	X	X	X
Psychological testing		X	X	X
24/7 intensive home /community case management				X
Day treatment services (focused, short term intensive)				X
Supported employment /supported education		X	X	X
How Services are Delivered				
Services on-site at primary care facilities	X	X		
Services available evening/Saturday (for both access and clinical)	X	X	X	X
Services for homebound frail or physically disabled			X	X
Targeted Services				
Transitional services for young adults		X	X	X
Programs for older adults (organized focus)		X	X	X

Levels Of Care Non-Acute Annual Clinician Hours, Range and Average	LOCUS Level 1 Recovery Maintenance and Health Management 0-15 hrs Avg: 6	LOCUS Level 2 Low Intensity Community Based Services 16-40 hrs Avg: 25	LOCUS Level 3 High Intensity Community Based Services 41-99 hrs Avg: 60	LOCUS Level 4 Medically Monitored Non- Residential Services 100-400 hrs Avg: 150
Case Management Services				
Service coordination, including targeted case management /linkage and brokering		X	X	X
Case specific interdisciplinary consults		X	X	X
Representative payee/financial services			X	X
Supports For SPMI/SED Population				
Financial mgmt, other life skills support groups			X	X
Self help organizations consumer operated	X	X	X	X
Self help/ socialization /drop in center	X	X	X	X
Warm line service (peer telephone support)				X
Referral and support for family members			X	X
Peer counselors/ community friends			X	X
Intensive peer support (trained peers available 7 days/wk)			X	X
Peer advocates			X	X

In addition to the Outpatient Services that are included in the Level of Care above, clients can access acute care services offered by San Mateo County as well as addiction treatment and other services in the community, based on medical necessity and/or appropriateness of the service to the needs of the individual.

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