

**Excerpt from:**

*the Evaluation Center@HSRI Toolkit:*

**A Model of Indicators & A Report Card for Assessment of  
Mental Health Plans' & Systems' Performance**

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## **Presentation and Interpretation of Performance Assessment Data**

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The presentation of performance assessment data should be designed to facilitate an understanding of the results. Publication of such data can reflect the relative strengths and weaknesses of a single plan, compare one plan against others on selected measures, or compare a plan against averages, contractual levels, standards, or best practices. This is likely to be accomplished best through graphical portrayal of the findings. The relative merits of five formats for presenting performance assessment data are discussed and illustrated below (see Figure 2).

- **Run chart.** Run charts are line graphs that relate the level of a performance indicator in a time series. They are most suitable to reflect performance on the same variable over time.
- **Histogram.** A histogram is a graphical presentation of categorical data, such as the proportion of clients by age or ethnic group. Histograms are particularly suitable for communicating similarities and differences, relative strengths and weaknesses, and patterns within a distribution of data, e.g., proportion of clients by living arrangements or income sources.
- **Pareto chart.** A pareto chart is a prioritized bar graph most suitable for display of such information as the prevalence of disorders, the magnitude of different presenting problems, etc.
- **Control chart.** A control chart is a trend chart with statistically determined limits that depicts how much variation in the data is to be expected and indicates when a level is within or beyond chance fluctuation. Control charts are suitable for monitoring both process and outcome measures. They can be used to show trends in the data over time and include control limits (e.g., standard deviations) that delimit the extent of variation expected under normal conditions and indicate what would be considered a significant deviation.
- **Scatter diagram.** A scatter diagram features placement of all units of observation in a space defined by two variables used to describe the units. The diagram reveals the association between the two measures and the degree of dispersion.

## **Dissemination of Findings**

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Presentation of performance assessment results may need to be tailored to different audiences. For example, managers, whose time is always limited, might prefer brief, one-page presentations consisting of a statement of the issue or concern, a graphical portrayal of the findings, and a brief interpretation of the most significant results. Policy makers might respond best to a combination of text and graphical presentation of statistical results, but they may be even more impressed with accompanying case illustrations. Researchers require literature references, in-depth statistical analyses, and a theoretically framed discussion.

***Performance assessment results might be presented on one of three levels:***

- **Factual communication** assumes that knowledge of the facts alone would create appropriate reaction and encourage desired change. For example, an agency might be unaware that its indigent care rate is lower than most and might use this information to increase the accessibility of its services to low-income people.
- **Persuasive communication** combines a set of arguments matched with the factual evidence to support the assertions.
- **Public disclosure** of performance levels is designed to create societal pressure to modify and improve performance. The disclosure of performance data is a powerful tool that can be used to shape the behavior of health plans or service systems.

When an adequate number of units is available, performance indicators can be transformed into standardized scores. The standardized scores, such as T-scores, allow comparisons of very different aspects of performance, such as level of outreach efforts, service accessibility for persons with serious mental illnesses, dropout rates for low-functioning clients, staff productivity, and consumer satisfaction. Such standardized scores can be used in tabular and graphic presentation for internal and external, and for cross-sectional and longitudinal, comparisons.

## **Sample Report Card Formats**

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The figures that follow are a set of mock report cards that could be produced using the suggested set of performance indicators outlined in Chapter 3. Specific advantages of each type of presentation are discussed below.

**Performance summary.** Figure 3 is a performance summary report card designed to show average levels of all performance indicators in the overall dimensions of **capacity, responsiveness, efficiency, and effectiveness**. All scores are presented as standardized T-scores with an average of 50 and a standard deviation of 10. Individual performance indicators were also transformed into T-scores and then averaged for each dimension. Thus, scores on all measures of capacity were added up and divided by the total number of measures, and the same was done for responsiveness, efficiency, and effectiveness. In this figure, the data show that the plan assessed had good capacity and effectiveness ( $T = 60$ ), even better efficiency ( $T = 65$ ), and good responsiveness ( $T = 45$ ). Because the score for responsiveness is less than one standard deviation from the mean, this outcome could invite attention but not warrant penalties or other consequences.

**Performance report.** The next four figures present greater details of findings in each of the broader dimensions. For example, in Figure 4, findings for the capacity dimension show significantly above average measures for resource base, management capacity, and clinical capacity. The most favorable data are those concerning management capacity ( $T = 65$ ) and resource base ( $T = 62$ ). The financial capacity is sufficient, but the technical capacity is very low ( $T = 35$ ) and might require attention.

In like fashion, Figure 5 presents the highlights of responsiveness and accessibility of the plan assessed. On the positive side, market penetration is excellent ( $T = 70$ ) and response promptness is very good ( $T = 65$ ). All the measures of accessibility, however, are below average, and the congruence with need is significantly below average ( $T = 35$ ). On the whole, the pattern of responsiveness suggests an emphasis on marketing and satisfying customers with little attention to reaching traditionally underserved groups.

The next two figures have the added dimension of comparing this year's data to last year's data as a way to establish trends that require attention or show improvement. Figure 6 shows performance in the dimension of efficiency, including levels of productivity, cost containment, occupancy, and service substitution. The current year data reflect excellent productivity ( $T = 70$ ), very good occupancy, and above average cost containment, but almost a standard deviation below the mean in service substitution. The comparison between the current and previous year shows improvement in productivity and occupancy rate, but lower performance in cost containment and service substitution.

A similar presentation of the five areas within effectiveness (Figure 7) shows significantly good performance in clients' functional levels, clients' quality of life, and consumer satisfaction, and above average performance in improving clients' symptomatology, but significantly poor performance in terms of providers' satisfaction. Only minor changes are shown between the two years.

**Performance indicator.** Figure 8 focuses more narrowly on a single performance indicator; in this case, cost per unit of service by program element (inpatient, residential, day hospital, and outpatient). Also, instead of comparing the same entity with itself over time, this figure compares the performance of four agencies. The data show the differential costs of the four program elements with inpatient care being the most expensive and outpatient treatment being the least costly. Agency B tends to have the highest costs overall.

**Additional analyses.** The final three figures (9-11) show additional analytic possibilities. Figure 8 compares client diagnoses to national data. It shows the proportion of clients with depressive disorders, schizophrenia, adjustment disorders, substance abuse, and "others" transformed into T-scores. The data of the plan assessed is also compared with national data from the Epidemiologic Catchment Area (ECA) projects. Overall, the plan served slightly fewer clients with depressive disorders and schizophrenia than would be expected based on the ECA data but not significantly so. Creation of this type of chart assumes the plan and/or SMHA has access to a management information system and to national data for comparison purposes.

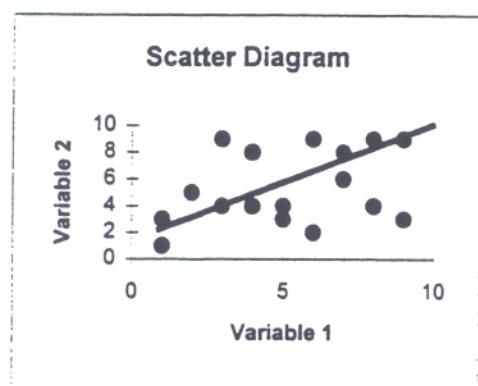
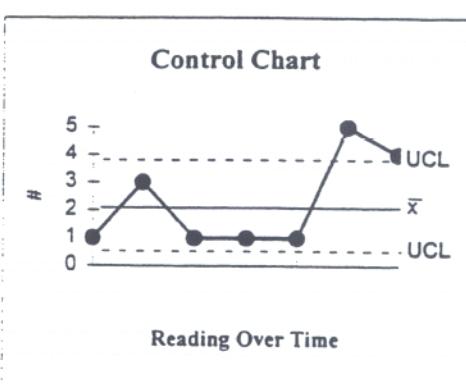
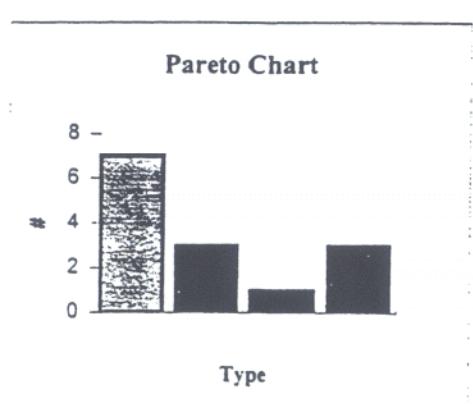
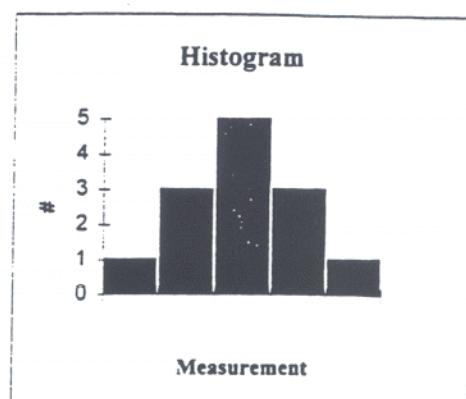
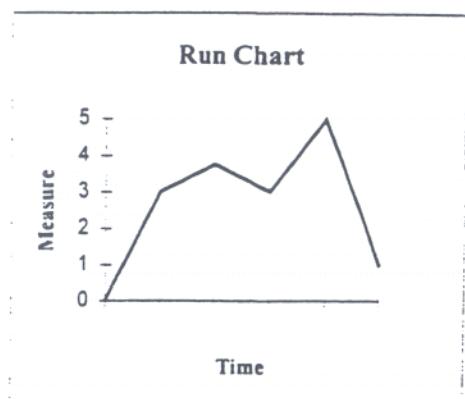
The next example (Figure 10) shows the average length of stay in inpatient care over four reporting periods. It also compares the data from the plan assessed with the expected length of stay based on the clinical mix of clients hospitalized during that period. According to the figure, the actual data show length of stay that was greater than expected in the first three periods but below what could be expected, based on the clinical mix, in the last reporting period.

Finally, Figure 11 shows the relationship between length of stay in an inpatient program and change in symptomatology at discharge. Overall, the data presented show little improvement for stays between 1 and 3 days, an almost direct relationship between improvement and stays between 4 and 15 days, and no gains beyond 15 days (although the data for the latter may suggest somewhat greater severity of symptoms at admission).

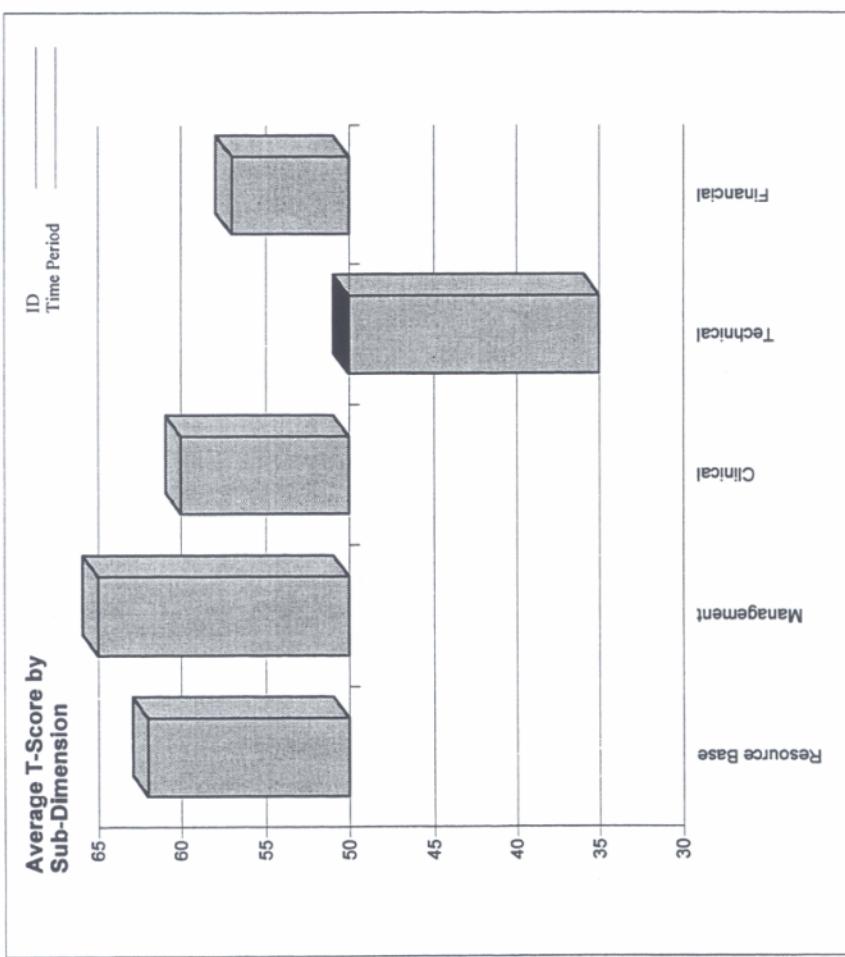
The figures presented above indicate that the possibilities for presenting report card data are almost limitless. It is highly advisable, therefore, for any SMHA to identify in advance the most important issues to be addressed, and to separate desired reports into what should be produced on a regular basis, what should be included in

ad-hoc analyses, what should be delegated to a one-time study, and what should be postponed.

**Figure 2**



## Performance Report; Capacity

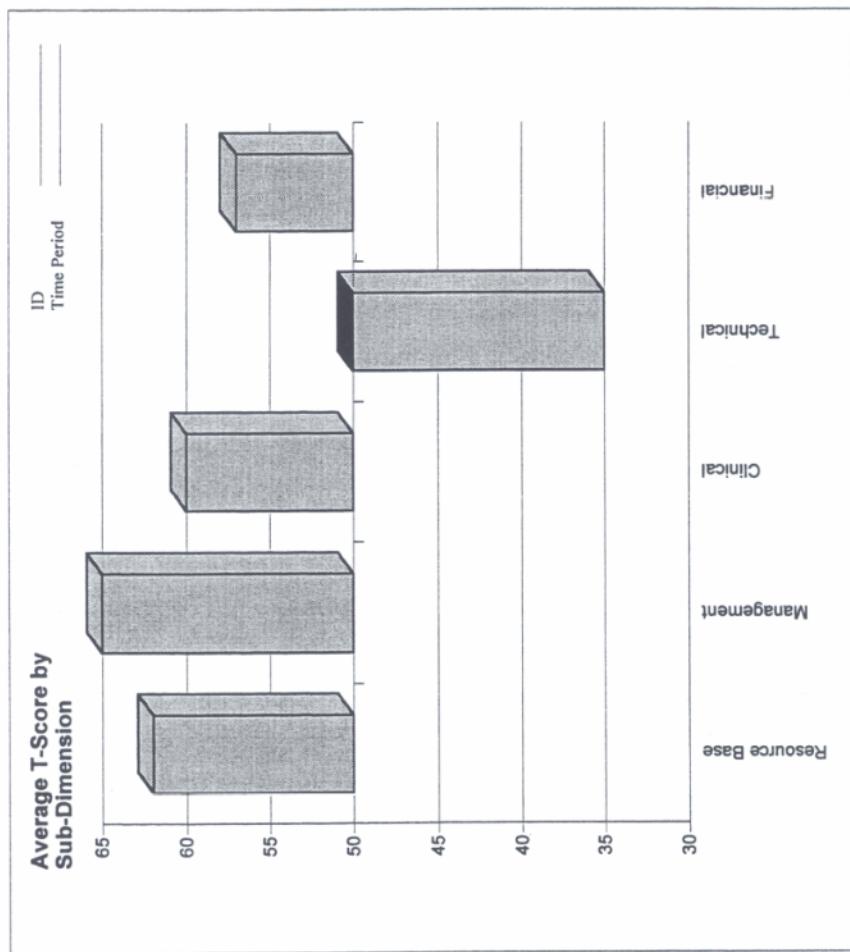


**Figure 3**

	T-Score
Resource Base	62
Management	65
Clinical	60
Technical	35
Financial	57

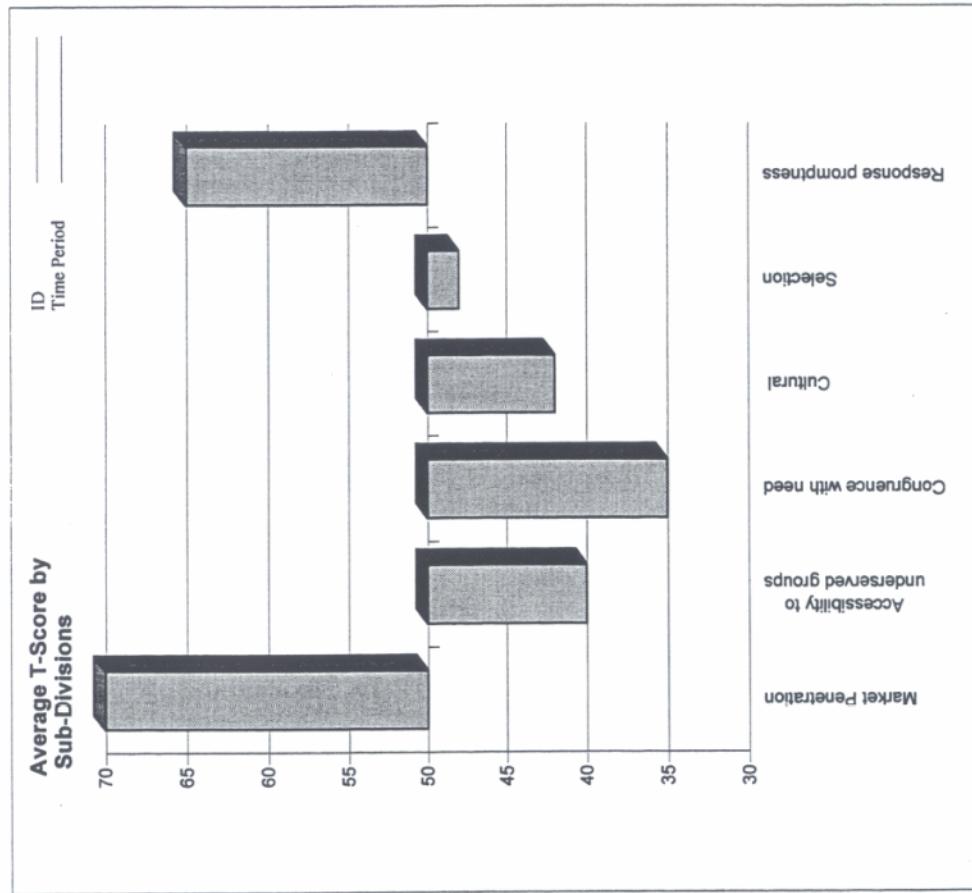
## Performance Report; Capacity

**Figure 4**



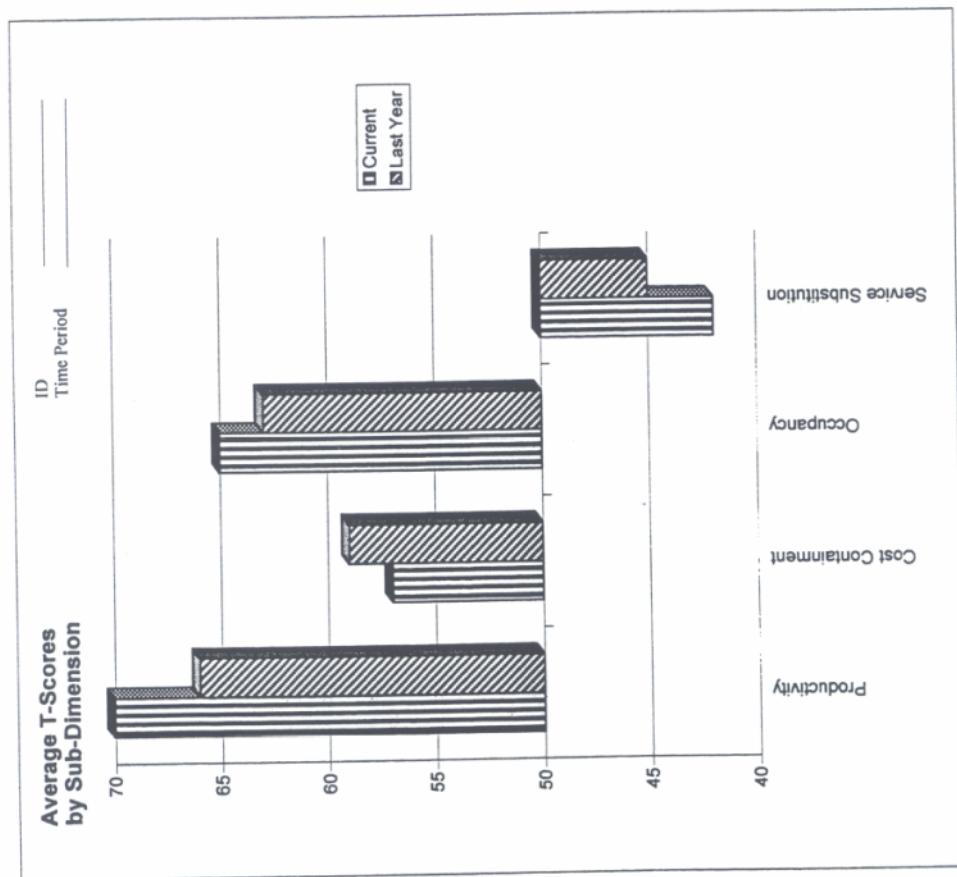
## Performance Report; Access/Responsiveness

**Figure 5**



# Performance Report; Efficiency

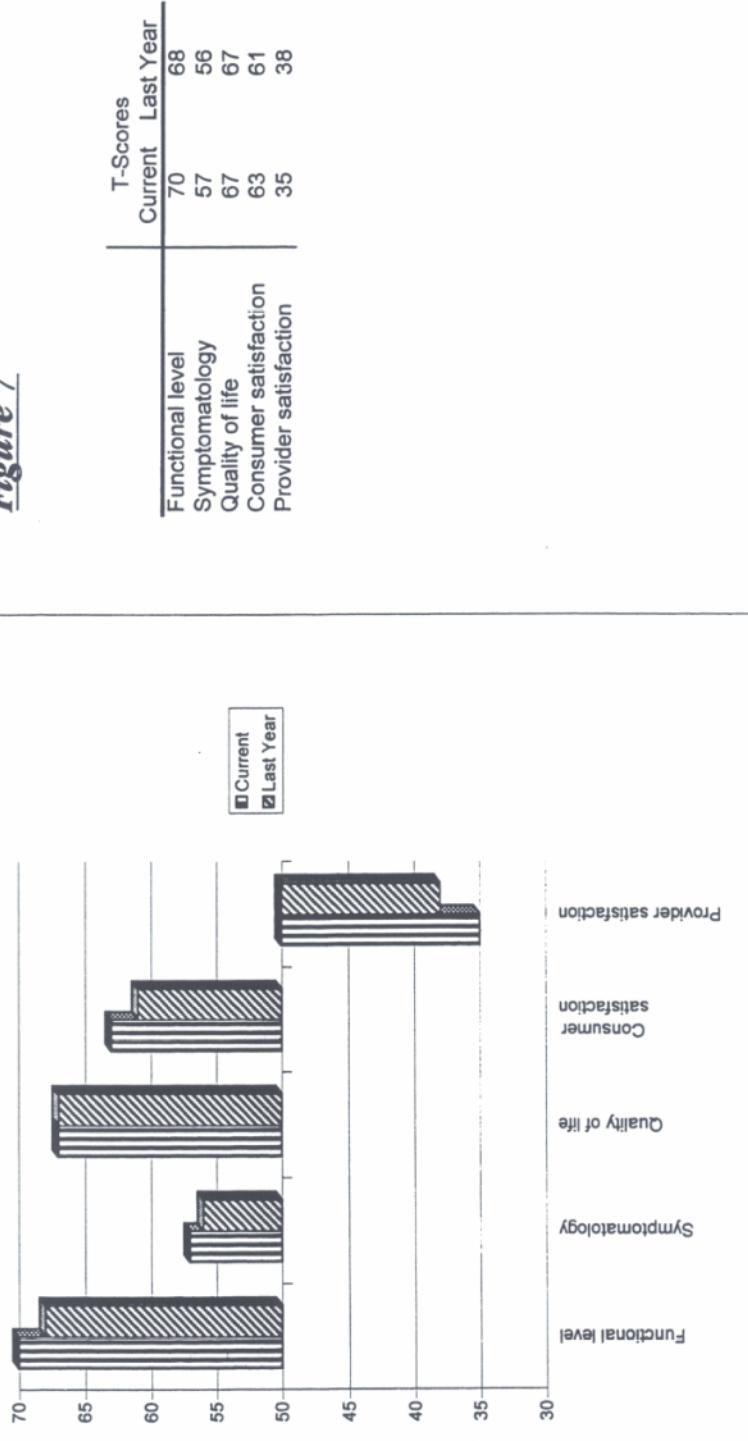
**Figure 6**



	T-Scores	
	Current	Last Year
Productivity	70	66
Cost Containment	57	59
Occupancy	65	63
Service Substitution	42	45

## Performance Report; Effectiveness/Outcomes

**Figure 7**  
Average T-Scores  
by Sub-Dimension



## Cross Agency Comparison; Cost per Unit of Service

Cost per unit of services  
by program element

ID  
Time Period

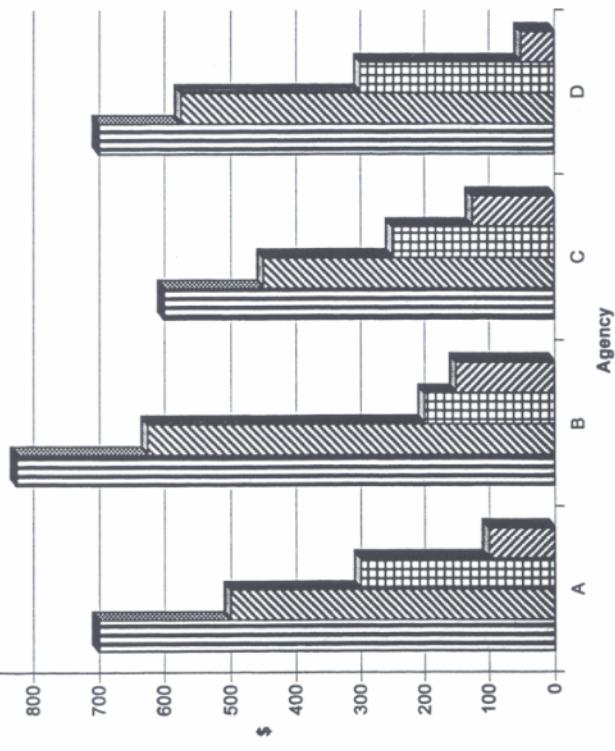


Figure 8

	Inpatient	Residential	Day Hospital	Outpatient
A	700	500	300	100
B	825	625	200	150
C	600	450	250	125
D	700	575	300	50

Prevalence of Diagnostic Groups among Enrollees

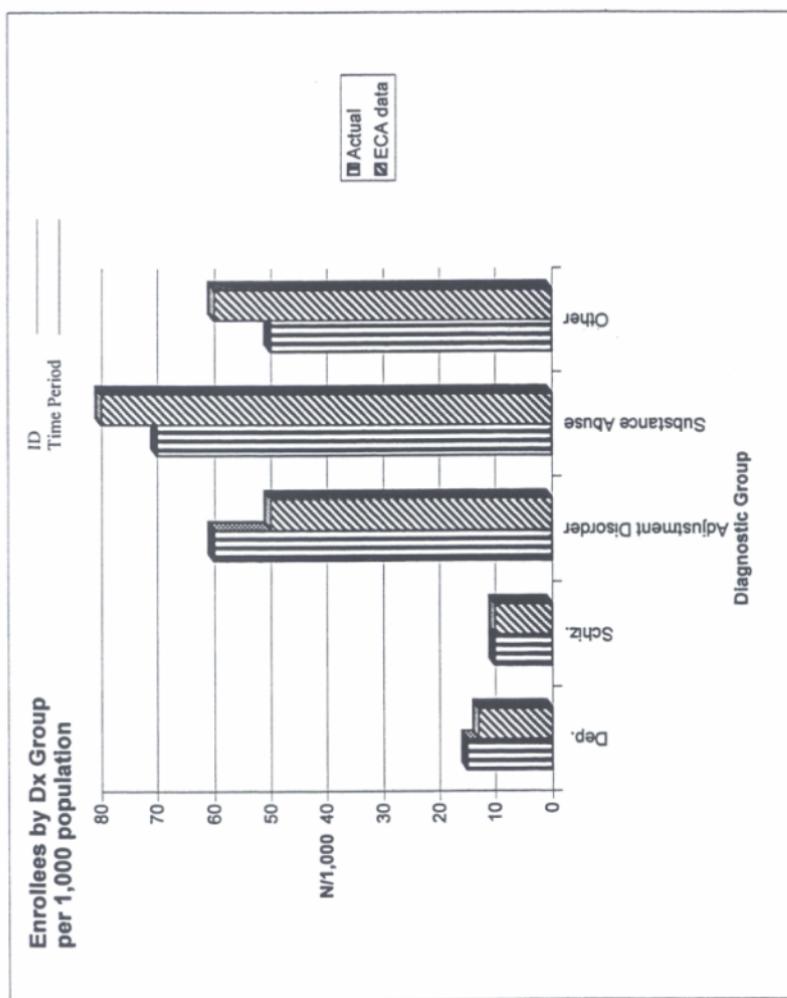
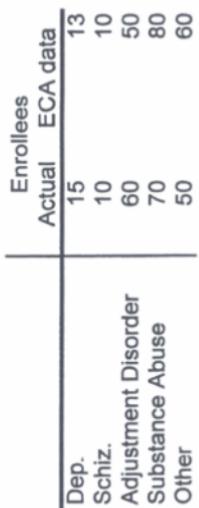
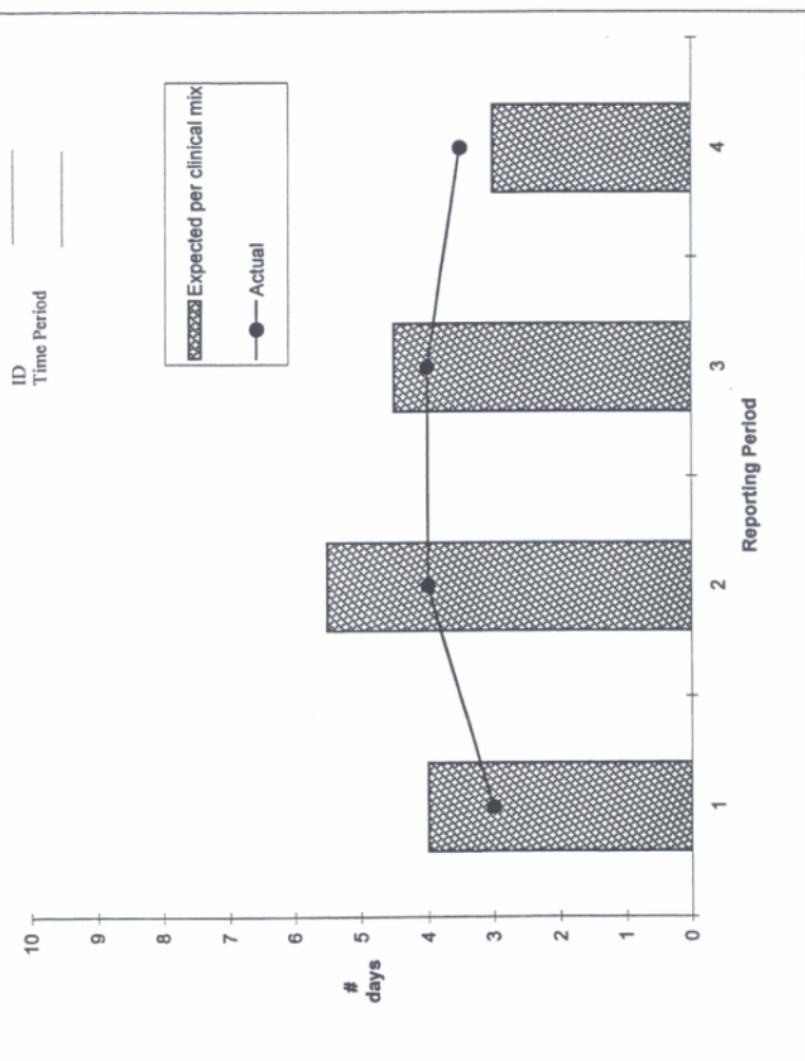


Figure 9



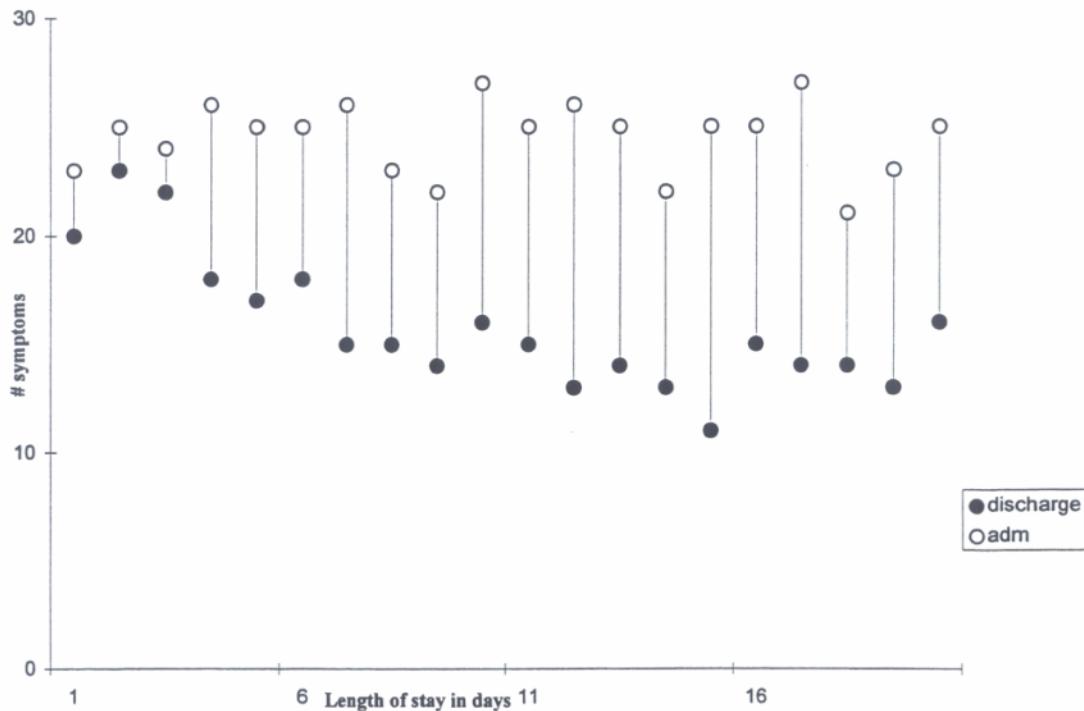
### Average Inpatient Length of Stay

**Figure 10**



***Figure 11***

Average change in symptomatology between admission and discharge from inpatient, by length of stay



Length of stay	Discharge	Admission
1	20	23
2	23	25
3	22	24
4	18	26
5	17	25
6	18	25
7	15	26
8	15	23
9	14	22
10	16	27

Length of stay	Discharge	Admission
11	15	25
12	13	26
13	14	25
14	13	22
15	11	25
16	15	25
17	14	27
18	14	21
19	13	23
20	16	25