

# ***Treatment Cost Analysis Tool (TCAT)***

## **Data Entry and Review Guide**

**Texas Christian University/Brandeis University**

Thank you for your interest in the Texas Christian University/Brandeis University Treatment Cost Analysis Tool (TCAT; Flynn et al., 2009). This descriptive outline is designed to serve as a reference guide for the TCAT. You may also consider using this as a paper and pencil based note sheet before entering data into the Microsoft® Excel-based workbook. More specifically, this reference guide will assist you with entering data, making informed decisions about allocating costs, and conducting unit cost analyses to improve the administrative capacity of your program.

The TCAT uses information about client volume, counseling activities, total program costs and revenues, indirect or parent facility overhead costs as well as detailed personnel data to analyze costs for outpatient drug-free substance abuse treatment programs and to conduct management planning. The TCAT is designed to conduct an analysis and management planning for one specific treatment program, although some limited information is requested regarding the program’s parent organization (if any) to get an idea about the program’s larger resource context. Sometimes costs, revenues, personnel, etc. can be “shared” among many treatment programs within a larger parent organization, and a careful financial assessment must take this into account. Close review of the examples and further clarification with the cost analyst, will help to resolve any potential data entry and analysis problems and provide insight into allocating various treatment costs.

The TCAT includes 7 data entry pages (overview, parent organization data, program-level data, FTE Personnel, Allocated Personnel, FT/Contract Personnel, and non-personnel costs), 4 summary pages (Unit Costs, Personnel Costs, Counseling Costs, and Key Data Summary), plus 3 charts comparing extend data with national figures collected through ADSS (Alcohol and Drug Services Study; Substance Abuse and Mental Health Services Administration, 2003).

<b>Individual Workbook Spreadsheets</b>	<b>Description/Type of Data</b>
<b><i>DATA ENTRY PAGES</i></b>	
Page 1. Overview	Workbook Summary and Facility Administrative Information
Page 2. Parent Organization Level Data	Parent Organizational Level Information and Relationship to Program
Page 3. Program Level Data	Client Volume, Facility Level Costs/Revenues and Counseling Information
Page 4. FTE (Full-Time Employee) Costs	FTE and Volunteer Counts, Hourly Rates, and Hours Worked Per Week
Page 5. Allocated FTE Costs	FTE Staff with Time Allocated to the Program, Hourly Rates and Hours Worked Per Week
Page 6. PTE (Part-Time Employee)/ Contractor Costs	PTE, Contractor, and Volunteer Counts, Hourly Rates, Hours Worked per Week
Page 7. Non-Personnel Costs	Capital and Other Non-Personnel Resource Costs

**Individual Workbook Spreadsheets  
(Continued)**

**Description/Type of Data**

<b>Analysis Pages (NO DATA ENTRY)</b>	
Page 8. Unit Cost Analyses	Calculated Unit Costs – Page is Locked and For Analysis Only
Page 9. Personnel Cost Analyses	Calculated Personnel Cost Summary – Page is Locked and For Analysis Only
Page 10. Counseling Cost Analyses	Calculated Counseling Cost Analysis – Page is Locked and For Analysis Only
Page 11. Key Data Summary	Workbook Summary Analyses and Wrap-Up Review Items
<b>Appendices and Reporting Pages</b>	
Appendix A. Sources Codes	Data Source Codes are Defined for Data Entry
Appendix B. Capital Cost Worksheet	Worksheet for Computing Capital Costs
Comparison Chart #1	Compares ADSS Personnel Cost Distribution with Program Personnel Cost Distribution
Comparison Chart #2	Compares ADSS Adjusted Unit Costs for Outpatient Programs to the Current Program
Comparison Chart #3	Compares ADSS Adjusted Mean Hourly Personnel Rates by Full-Time Staffing Category

**DATA ENTRY PAGES:**

Please fill in the following information into the workbook as accurately as possible.

**Page 1. Overview**

**Type of Data:** Workbook Summary and Facility Administrative Information

1. **Drug Free OP Program Name** – Official Name of the Program (not the “Parent Organization”)
2. **Parent Name** – If the Drug Free OP Program is Part of a Larger Parent Organization
3. **Program Address** – Main program location (for this analysis)
4. **Primary Program Contact** – Individual who serves as the primary contact for this analysis
5. **Program Contact Number** – Telephone number of primary program contact
6. **Program ID Number** – Assigned Study Number
7. **Beginning Survey Date** – Date when data collection begins
8. **Preparer's Name** – Primary individual conducting data entry and analysis
9. **Date of Preparation** – Date of entering data into workbook (or range of dates)

10. **Type of Care** – Is the program a regular outpatient or intensive outpatient program?
11. **Ownership Type** – Is the program a public, private, or non-profit organization?
12. **Reporting Period** – What is the exact 12-month period for which you are reporting these data? (Remember: This analysis is for an annual period.)
13. **Fiscal year** – Is the reporting period the last fiscal year?
14. What are the starting and ending months of the fiscal year?
15. **Number of Hours** – What are the total number of hours used to complete this workbook? (Estimate upon completion)

## Page 2. Parent Organization Level Data

**Type of Data:** Parent Organizational Level Information and Relationship to Specific Program (analyzed in the workbook)

1. **Parent Organization** – Does your program operate under a parent organization? Parent Organization: A larger company of which your agency is a part. There may be shared or separate financial accounting practices. If not, your program would be considered a stand-alone organization. A Parent Organization generally consists of an administrative body with several direct service programs.
2. **Total Costs of the Parent Treatment Facility/Organization** – Includes both financial expenditures and economic costs borne by the organization as a whole. (Economic costs includes the cost of volunteer time and donated resources and the cost of all resources should be counted.)
3. **Total Costs of the Parent Treatment Facility/Organization (excluding all direct service program costs)** – Includes both financial expenditures and economic costs borne by the organization excluding all child costs. Most likely, this would include only parent level administrative costs. (Economic costs include the cost of volunteer time and donated resources.)
4. **Estimated Proportion of All Parent Organization Resources Used by the Selected Outpatient Program** – Each program consumes its own resources in addition to resources of the great parent organization (i.e. administrative resources). For example: Program X uses 30% of total organization resources, while programs Y and Z use 70% of total parent organization resources.
5. **Calculated Parent Organization Costs Allocated to the Program** – This is calculated automatically. There is no need to enter data into this field.
6. **Total Costs of the Identified Treatment Program for Cost Analysis** – (includes administrative overhead calculation). Includes both financial expenditures and economic costs borne by the program (i.e., includes the cost of volunteer time and donated resources.) Includes direct program costs as well as indirect costs identified by estimating the estimated proportion of all parent organization resources used by the selected outpatient program.
7. **Calculated Proportion of All Parent Organization Resources Used by the Selected OP Program** – This field is calculated and there is no need for data entry.

### Page 3. Program Level Data

**Please note: These data should correspond with the fiscal reporting period.**

**Type of Data:** Client Volume, Facility Level Costs/Revenues and Counseling Information

1. **Program Name** (NO DATA ENTRY)
2. **Number of Active Clients** – What is the number of clients in your substance abuse treatment program (October 1<sup>st</sup> of Reporting Period or another date during the period)?
3. **Annual Admission Count** – Over the year, or for the most recent 12-month period for which you have data, what was the total number of admissions to this program at your facility?
4. **Annual Discharge Count** – Over the year, or for the most recent 12-month period for which you have data, what was the total number of discharges to this program at your facility?
5. **Average Length of Stay in Days** – What is the average length of stay for a client in this program?
6. **Client Capacity (Average Number of Treatment Slots)** – What is your total client capacity for client’s receiving substance abuse treatment in this program?
7. **Total Costs (NO DATA ENTRY)** – This item is linked to the previous page.
8. **Total Net Revenues** – What are the total revenues specific to this program at your substance abuse treatment facility? Revenues include financial receipts from all sources such as client payments, insurance, contracts, grants, government funds, budget allocations, and in-kind donations.
9. **Individual Counseling Sessions Attended Per Client Per Week** – On average, how many individual counseling sessions does a client receiving services actually obtain per week in this program?
10. **Group Session Average Number of Clients in Attendance** – If applicable, how many clients, on average, attend each of the following types of group sessions in this program?
  1. **Group Therapy Sessions** \_\_\_\_\_
  2. **Group Education Sessions** \_\_\_\_\_
  3. **Other** \_\_\_\_\_
11. **Group Sessions Attended Per Client Per Week** – On average, how many group counseling sessions does a client actually receive per week in this program at your facility?
12. **Average Group Session Length (Tenths of Hours)** – On average, what is the length of a group session? This will most likely range from 50 minutes to 1 and ½ hours. (Please indicate in tenths of hours). So, a 50-minute session would equal approximately .80.
13. **Average Number of Counselors Per Group Session** – On average, how many counselors are present during a group session?

## Page 4. Full-Time Employee (FTE) Personnel Costs

**Type of Data:** FTE, Paid Interns, and Volunteers: Counts, Hourly Rates, and Hours Worked Per Week

Please enter data for employees that work full-time in this program. Employees working full-time for the facility, but “part-time” in programs will be considered “Allocated FTE” employees.

**What is the number of FTE (Full-time employees) in each of the following categories working in this type of care?**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

**What is the average hourly salary rate for FTE in this type of care in each of the following categories? If you only know the annual salary for each category, determine the hourly rate by dividing the salary by 2080 (for 40 hour work week), 1950 (for 37.5 hour work week), and 1820 (for 35 hour work week)**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

**What is the average number of hours worked per week for FTE in each of the following categories? (35-40 Hours per week is assumed to be full-time equivalent.)**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

What is the average fringe benefit rate for all FTEs? \_\_\_\_\_

**Page 5. Allocated Full-Time Employee (FTE) Personnel Costs**

**Type of Data:** Allocated FTEs, Allocated Paid Interns and Allocated Volunteers, Contract Personnel, Paid Interns, and Volunteers: Counts, Hourly Rates, and Hours Worked Per Week

Please enter data for employees that work full-time for the parent organization but “part-time” for the specific program under analysis.

**What is the number of Allocated FTEs (Full-time employees) in each of the following categories working in this type of care?**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

**What is the average hourly salary rate for FTE in this type of care in each of the following categories? If you only know the annual salary for each category, determine the hourly rate by dividing the salary by 2080 (for 40 hour work week), 1950 (for 37.5 hour work week), and 1820 (for 35 hour work week)**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

**What is the average number of hours worked per week for FTE in each of the following categories? (35-40 Hours per week is assumed to be full-time equivalent.)**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

What is the average fringe benefit rate for all Allocated FTEs?

## Page 6. Part-Time Employee (PTE) and Contract Personnel Costs

**Type of Data:** PTE and Contract Personnel, Paid Interns, and Volunteers: Counts, Hourly Rates, and Hours Worked Per Week

Please enter data for employees that work part-time or as contract staff in the program. Again, employees working full-time for the facility, but “part-time” in different types of care will be considered “Allocated FTEs” and will be addressed in the next section.

- 1. Program Name (NO DATA ENTRY)**
- 2. What is the number of PTE (Part-time employees and contract staff) in each of the following categories?**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

**What is the average hourly rate for PTE and contract staff in each of the following categories? If only the annual amount is known, please divide by the average number of hours worked per week in each category x 52 weeks.**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

**What is the average number of hours worked per week for PTE in each of the following categories? (Remember, 35-40 Hours per week is assumed to be full-time equivalent and therefore all part-time and contract staff work less than 35 hours.)**

Physicians	_____	Non-Degreed Counselor	_____
Nurses	_____	Senior Management Staff	_____
Other Medical Staff	_____	Clinical Management Staff	_____
PhD Psychologist	_____	Clerical/Admin Staff	_____
Masters Level Counselor	_____	Paid Interns	_____
Bachelors Level Counselor	_____	Volunteers	_____

What is the average fringe benefit rate for PTE and Contract Staff? \_\_\_\_\_

## Page 7. Capital and Non-Personnel Costs

The analysis of capital and non-personnel costs includes both Non-Personnel Capital Resources and Other Non-Personnel Resources. Appendix B is available in the file for you to conduct cost analyses regarding capital costs, if necessary.

### *Non-Personnel Capital Resources – (Also Please See Appendix B)*

Capital Costs can be accounted for from two different perspectives:

1. Item by item Capital Costing – Using Numbers 1-6 and using the Capital Cost Worksheet – Appendix B.

Capital Items are amortized for a one-year period and may include resources such as computer systems, facilities and buildings, copying machines. These resources generally have a life span of greater than one year. If you choose this method, please refer to Appendix B on how to calculate these costs.

For “Non-Personnel Capital Resources” please enter the annualized cost of each item for the annual period (using the capital worksheet). The donated amount would be estimated by using a “fair market value”.

Other Non-Personnel Capital Resources are listed as follows:

1. Computer Systems – Includes all computer systems
2. Facilities and Buildings – Includes all building costs
3. Other Capital Resource – Use as necessary
4. Other Capital Resource – Use as necessary
5. Other Capital Resource – Use as necessary

Total Non-Personnel Capital Resources  
CALCULATED SUM: NO-DATA ENTRY

2. General Depreciation Costs – This method may be easier for treatment programs with accounting departments that generate this calculation. This amount will be placed in the “General Depreciation Costs” item in the next section.

### *Other Non-Personnel Resources*

For “Other Non-Personnel Resources” please enter the purchased or donated amount of each item for the annual period. The donated amount would be estimated by using a “fair market value”.

Other Non-Personnel Resources include the following:

7. General Depreciation Costs – This category may be used when “top down” depreciation data are available from the financial office/accounting and may include an allocated depreciation to the program. (Please see above section on Capital Costs.)



8. Administrative Items: including office supplies, copying expenses, postage and printing, telephone expenses, accounting expenses, central office overhead, travel and transportation, and indirect costs. PLEASE NOTE THAT THIS IS WHERE YOU SHOULD ALSO ACCOUNT FOR CENTRAL OFFICE OVERHEAD INCLUDING PERSONNEL.
9. Dietary Items: includes raw food, food preparation supplies and equipment, and contracted food preparation services
10. Housekeeping and Laundry: includes housekeeping equipment, laundry equipment, operating supplies, and contracted services for housekeeping or laundry
11. Medical Care: includes medical equipment (\*this may be a capital item) and supplies
12. Laboratory: includes laboratory equipment, prescription drugs, substance abuse testing kits, HIV testing supplies or services, Hepatitis testing supplies or services, and operating supplies
13. Client Transportation: includes vehicle purchase or rental, repairs, gas/tires/oil, registration, insurance, and contracted services
14. Rent and Interest: includes annual building rent or mortgage interest
15. Taxes: includes all federal, state, and local taxes
17. Total Annual Non-Personnel Non-Capital Costs (for purchased and donated items) – CALCULATED SUM: NO-DATA ENTRY
18. Combined Total for Capital and Non-Capital Non-Personnel Costs – CALCULATED SUM: NO-DATA ENTRY
19. Proportion of Non-Personnel Costs to Total Costs: CALCULATED PERCENTAGE – NO-DATA ENTRY

## **THE FOLLOWING PAGES ARE ANALYSIS PAGES ONLY.**

### **Page 8. Unit Cost Analyses**

This page takes summary data from the previous data entry pages and conducts ratio analyses to analyze reported data including, admissions, discharges, average length of stay, client count, client capacity, program costs and revenues. The example below shows the calculations behind the important admissions and discharge derivative calculations.

*Example 1.* A residential facility director confidently reports its client count (55), along with the number of admissions (1813) and discharges (1878) over the past 12-month period. The facility director also indicates that he is very unclear about the average length of stay for clients and is uncomfortable giving any data regarding this variable. As a result, you would provide an internal estimate of the average length of stay, based on the above reported variables, namely, client count, total admissions, and total discharges. In order to obtain this estimate, average client count calculations were used as analysis variables in the facility's data analysis.

These variables include:

Admission Derivative (Derived Client Count) = Annual Admissions Count/(365/Average Length of Stay)

Discharge Derivative (Derived Client Count) = Annual Discharge Count/(365/Average Length of Stay)  
(Client Count)

A and B are formulas of derived average client counts for the facility.

Subsequently, the information given by the director is entered into the above formulas.

$$A = 1813/(365/x1) = 55$$

$$B = 1878/(365/x2) = 55$$

$$\text{Client Count} = 55$$

Solving, x1 (based on admission) = 11.1 days and x2 (based on discharges) = 10.7 days. As a result, x or the average length of stay = approximately 11 days.

This result would be entered into the program's data set as the internal estimate. It is apparent that this analysis is heavily dependent upon the accuracy of the reported admissions, discharges, and client count.

## **Page 9. Personnel Cost Analyses**

This page recalculates the program's personnel costs and provides some key ratio indicators such as "percent of personnel services to total costs" for various staffing categories. Expected ranges are provided based on previous cost analyses of outpatient drug-free substance abuse treatment programs.

Important variables to review include:

1. Percent of Labor Costs to Total Costs
2. Ratio of Counselor Costs to Total Labor Costs
3. Ratio of Medical Costs to Total Labor Costs
4. Ratio of Administrative Costs to Total Labor Costs
5. Ratio of Direct Care Costs to Total Labor Costs

## **Page 10. Counseling Cost Analyses**

This page is used to generate two important unit cost variables as well as important information regarding the amount of time counselors are spending with regard to client contact time.

The two unit costs generated are:

1. Cost Per Counseling Hour (calculated as Total Costs of the Program/Total Counseling Hours Provided)
2. Cost Per Group Counseling Hour Per Client (calculated as Cost Per Counseling Hour/Mean Number of Clients Per Group)

This analysis essentially assumes that both individual and group counseling sessions use the same resources (one individual counselor) to deliver each intervention.

The counselor time analysis variables include:

1. Annual Direct Client Contact Hours of All Counselors
2. Ratio of Direct Client Contact to All Available Hours (for all counselors)
3. Ratio of Direct Client Contact to All Available Hours (for professional counselors, PhD, MA, and BA level)

## **Page 11. Key Data Summary**

The data summary page shows four key global measures for the entire cost analysis. This analysis helps to examine the “bottom line” of the analysis by bringing together four key variables for your review. These variables include the following:

1. Active Client Count
2. Annual Admission Count
3. Annual Discharge Count
4. Average Length of Stay (Calendar Days)
5. Total Costs of the Parent Treatment Organization
6. Total Costs of the Program Identified for Analysis
7. Total Program Personnel Costs (and Percent of Total Program Costs)
8. Total Program Non-Personnel Costs (and Percent of Total Program Costs)
9. Total Derived Costs (and Percent of Total Derived Costs) **USED AS A RELIABILITY CHECK WITH TOTAL PROGRAM COSTS REPORTED**
10. Cost Per Episode\* (based on Admissions)
11. Cost Per Enrolled Client Day\*\* (based on Admissions)
12. Cost Per Counseling Hour\*\*\*
13. Cost Per Group Counseling Hour Per Client\*\*\*\*

\*Cost Per Episode is calculated as Total Costs of the Program/Total Admissions

\*\*Cost Per Enrolled Client Day is calculated as (Total Costs of the Program/Total Admissions)/Average Length of Stay

\*\*\*Cost Per Counseling Hour is calculated as Total Costs of the Program/Total Counseling Hours Provided

\*\*\*\*Cost Per Group Counseling Hour Per Client is calculated as Cost Per Counseling Hour/Mean Number of Clients Per Group

## **APPENDICES**

### **Appendix A. Sources Codes**

Source codes enable the user to record where information entered into the workbook originated in the analysis. Explanations regarding each source code are available in Appendix A.

## **Appendix B. Capital Cost Worksheet**

For these resource costs, the annualized cost is calculated using the Excel formula “PMT” using a discount rate of 3%. For data entry purposes, you are required to enter the “expected life years of the capital item”, “the amount paid for the item” and the “capital resource allocation” amount. For this last item, you must answer the question: “What percentage of the specific capital resource is used directly or indirectly for the program associated with this cost analysis?” We have assumed 100% for this analysis, but you may change it based on the appropriate answer.

### **DATA COMPARISON CHARTS**

#### **Comparison Chart #1**

Percentage Distribution of Personnel Costs for Outpatient Non-methadone Treatment ADSS and Selected Outpatient Program for Analysis

#### **Comparison Chart #2**

Average Program Costs: Adjusted ADSS and Program Data

#### **Comparison Chart #3**

Mean Hourly Personnel Rates, by Full-Time Staffing Category: ADSS and Specified Program Data

### **References**

- Flynn, P. M., Broome, K. M., Beaston-Blaakman, A., Knight, D. K., Horgan, C. M., & Shepard, D. S. (2009). Treatment Cost Analysis Tool (TCAT) for estimating costs of outpatient treatment services. *Drug and Alcohol Dependence, 100*, 47-53.
- Substance Abuse and Mental Health Services Administration. (2003). *The ADSS Cost Study: Costs of substance abuse treatment in the specialty sector* (DHHS Publication No. SMA 03-3762, Analytic Series A-20). Rockville, MD: Office of Applied Studies.