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HEALTH MANAGEMENT ASSOCIATES

*State and Community Considerations for
Demonstrating the Cost Effectiveness of AOT
Services*

FINAL REPORT

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ABOUT HEALTH MANAGEMENT ASSOCIATES

HMA is a consulting firm specializing in the fields of health system restructuring, health and behavioral health care program development, health economics and finance, program evaluation, and data analysis. HMA is widely regarded as a leader in providing technical and analytical services to health care purchasers, payers, and providers, with a special concentration on those who address the needs of the medically indigent and underserved. Founded in 1985, Health Management Associates has offices in Atlanta, Georgia; Austin, Texas; Boston, Massachusetts; Chicago, Illinois; Denver, Colorado; Columbus, Ohio; Harrisburg, Pennsylvania; Indianapolis, Indiana; Lansing, Michigan; New York, New York; Olympia, Washington; Sacramento, San Francisco, and Southern California; Tallahassee, Florida; and Washington, DC.

HMA has clients across the country, including the major safety-net health systems, private sector providers, and local, state, and federal governments. The firm has extensive experience and expertise in the design and implementation of health programs, particularly with respect to system development, managed care, long-term care, and behavioral health care.

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CONTENTS

Acknowledgements.....	2
About Health Management Associates.....	2
Executive Summary	4
The Cost Study Sites.....	5
New York.....	5
Summit County, Ohio.....	5
Summary of Recommendations to Policymakers.....	6
Introduction.....	9
How Assisted Outpatient Treatment is Utilized	9
Who Receives Assisted Outpatient Treatment Services?.....	10
What is the Impact of AOT Services?.....	10
Assessing the Cost Impact of Implementing AOT	11
What Data are Necessary to Assess Net AOT Costs?	11
What are the Obstacles to Collecting the Necessary Data?.....	12
Methods for Collecting Relevant Data.....	13
Cost Drivers and Savings Centers	13
Mental Health Service Costs	13
Medicaid Services Costs	14
Criminal Justice Costs.....	15
Determining Homelessness Services/Housing Costs	16
AOT Program Administration Costs	17
Summary of New York AOT Cost Effectiveness Findings.....	18
Summary of Summit County AOT Cost Effectiveness Study	21
Other Studies	23
Calculating AOT Cost Effectiveness.....	24
Strategic Recommendations for Policymakers	25
Conclusion	25
Appendix A.....	28

EXECUTIVE SUMMARY

Assisted outpatient treatment refers to a program or collection of services in which community-based mental health treatment is delivered under a civil court order to an individual who meets criteria established by the state where the order is issued. Criteria for assisted outpatient treatment differ by state but almost universally is for individuals who have a demonstrated difficulty adhering to prescribed mental illness treatment on a voluntary basis and, as a result, have experienced recurring negative outcomes (e.g., multiple hospitalizations, violent acts, or suicide attempts). Called by a variety of names depending on location [AOT, involuntary outpatient commitment or IOC, mandatory outpatient treatment or MOT, and others] the process is most often used in conjunction with discharge from involuntary hospitalization but in some jurisdictions may also be ordered pre-emptively before an individual experiences complete decompensation.

Individuals ordered to receive AOT are, by definition, already known to public mental health systems. Because of their unique treatment patterns, individuals typically have a history of utilizing high-cost resources, often in multiple systems. A substantial body of independent research has found that AOT reduces the incidence of psychiatric emergency/crisis services, inpatient psychiatric utilization, criminal justice involvement, and reduces costs for at-risk adults with severe mental illness. However, there is limited information and guidance for states and communities about how to quantify and measure the costs and potential savings associated with its use, particularly those that are non-medical in nature, such as reductions in homelessness.

This report attempts to close that gap by examining cost data in seven settings where two dramatically different AOT models have been in use for at least a decade: Summit County, Ohio, which includes Akron, and New York, including New York City's five boroughs and five additional jurisdictions. Categories of cost savings common to both are noted, and guidance is offered for states and communities to identify and obtain relevant data to assess AOT cost effectiveness in these categories in their own communities.

Potential savings include reduced costs for providing health services – that is, direct costs – and indirect costs for non-health services that may be changed by the implementation of AOT (i.e., reduced incarceration costs). Relevant costs include but are not limited to:

- Direct costs
 - mental health treatment costs, including inpatient and outpatient psychiatric services
 - hospitalization to provide non-psychiatric medical services
 - pharmaceutical costs
 - outpatient services for non-mental health issues
 - administrative costs for serving the individuals, including any civil commitment court costs
- Indirect costs
 - shelter costs (homeless housing/housing supports)
 - criminal justice costs (public safety costs to arrest and book offenders, jail services, public defender costs, district attorney costs, and court costs)

Health Management Associates (HMA) was engaged to examine and report on cost findings in these seven jurisdictions, including and additionally, to note any sources of cost savings common among the sites, and to identify the measures that other states and counties might use either to analyze or to project taxpayer cost impacts of implementing AOT. The scope of HMA's report was limited to documenting and summarizing findings of independent AOT cost effectiveness research. HMA was not tasked with evaluating the methodology or findings of cost effectiveness research.

THE COST STUDY SITES

NEW YORK

Known as "Kendra's Law," New York's assisted outpatient treatment law took effect in 2000. In the case of both New York City and the five outlying jurisdictions, hospitalization was found to decline markedly in the first 12 months after AOT was initiated and, with it, the cost of inpatient treatment. Medicaid costs also declined substantially as participants in the program experienced fewer psychiatric emergencies and needed fewer crisis services and clinical visits. Service costs for case management, assertive community treatment, other outpatient services, and psychotropic medication fills were higher for AOT participants than non-participants, but every jurisdiction reported net savings when all the data points evaluated were included (e.g., higher medication adherence by participants increased medication costs but lowered hospitalization costs).

"Results of this study reveal significantly reduced overall costs under New York's assisted outpatient treatment program, attributable mainly to a marked shift in patterns of mental health services provision from inpatient to outpatient care settings. For a large proportion of baseline services, costs were associated with lengthy hospitalizations preceding assisted outpatient treatment, which suggests that averting extended inpatient treatment could yield significant savings." – Swanson, Van Dorn, Swartz, et al., 2013

SUMMIT COUNTY, OHIO

Despite the findings described in the New York cost outcome study, the results are often discounted in the discussion of AOT because the state's model and funding are unique (i.e., New York established a governmental division dedicated exclusively to AOT implementation). To examine the question of cost effectiveness absent New York's infrastructure, this study considers the experience of Summit County, Ohio, an urban county of 541,000 that has employed the AOT process for over twenty years.

In Summit County, annualized aggregated costs per participant in AOT were found by researchers to have declined 50% in the period before and after participation. The majority of cost savings resulted from significant reductions in hospitalizations, mental health assessments by non-physicians, individual counseling, crisis intervention, and mental health pharmacologic management services.

“These results indicate that there were significant declines in costs for those who were on assisted outpatient treatment when comparing the costs per individual prior to, during, and after the treatment. That these costs declined in a program that has been in existence since 1994 indicates that there are significant benefits to not only the individual who is placed in the controversial treatment program, but also to the systems that administer the program through the shift from crisis oriented services to outpatient services.” – Ritter, Munetz and Teller, 2014

Using the data points tracked by those jurisdictions as a starting point, HMA developed guidance for policymakers and other public officials to project the net costs of proposed new AOT programs or to assess the cost of existing ones.

SUMMARY OF RECOMMENDATIONS TO POLICYMAKERS

Whether considering a new AOT program or assessing an existing one, it is essential for policymakers to obtain as much relevant data as possible in order to accurately gauge the system’s return on its investment in the outpatient commitment process. Gathering such data can also provide a baseline to gauge the utility and cost effectiveness of an approach and to allow comparisons to other potential solutions.

However, in the context of a program like AOT, which impacts a number of different cost centers, finding reliable sources of information for each impacted data element can be complicated and daunting. The strategies below offer experience-based guidance to help public officials overcome these difficulties and more reliably project and/or assess the impact of the AOT-eligible population on budgetary resources and the cost effectiveness of new or expanded AOT as an option for providing treatment in a less restrictive, community-based setting.

Collecting mental health data

Policymakers and other public officials should:

- Identify and meet with local and state mental health authorities (e.g., state mental health department officials and, as applicable, county mental health board leadership) to understand what mental health treatment and support services are available and how they are financed. Determine what services are provided to adults with mental illness and whether they are paid using local-only, state-only, Medicaid-only, or other funding sources.
- Work with officials to isolate available data that describes utilization of publicly funded mental health treatment and support services and costs. Learn who reports the data, in what format it is collected, for what periods it is collected, where it resides, on what terms it can be released for analysis, what privacy limitations are attached, costs to obtain the data, and other factors effecting access to the data.
- Determine processes and limitations for obtaining and utilizing mental health cost and service data. Privacy and security policies will limit access to individually identifiable data,

but access to aggregated and de-identified data containing average utilization and service cost profiles may be available.

- Determine the extent of federal Medicaid coverage for various treatment options. Because resources used to implement AOT typically do not trigger the Medicaid Institutions for Mental Diseases (IMD) exclusion, state resources utilized for AOT-eligible individuals will typically be federally reimbursable in a manner that treatment in an inpatient psychiatric facility is not.
- Seek the following baseline information from local and state officials:
 - Total number of adults with severe mental illness in the community
 - Insurance status of service users (e.g., uninsured, Medicaid, Medicare, commercial, etc.)
 - Service utilization and cost per service per individual (e.g., total days and cost per day of inpatient psychiatric hospitalization as well as total units and cost per unit of crisis emergency service, counseling, medication management, and community/social support services)
 - Date of service, so that analysis can include comparisons pre-, during-, and post-AOT

Collecting other relevant medical data

- Local policymakers may want to convene stakeholders around a broader, statewide effort to engage Medicaid and discuss the potential cost savings associated with appropriate use of mental health services. Most states are aware of the higher costs of care associated with persons with mental illness and may already have initiatives underway that convene stakeholders on this topic.
- In partnership with the state or county mental health authorities, work to establish a relationship with state Medicaid officials. In many cases, state Medicaid and mental health departments work closely together to administer the Medicaid mental health benefit, and meeting with state mental health officials may facilitate access to key Medicaid staff.
- While Medicaid officials have the capacity to associate other medical service costs with mental health service users, policymakers may face barriers in accessing such information due to a number of issues, including competing Medicaid priorities.
- Specific information from state Medicaid officials should include the following state and county baseline data :
 - Total number of Medicaid-eligible adults with severe mental illness
 - Total annual average per person utilization and cost by service (e.g., inpatient psychiatry, inpatient non-psychiatry, pharmacy, primary care, lab, x-ray, etc.)

Collecting criminal justice data

- Criminal justice costs will vary in amount and by what costs are reported across jurisdictions. However, since jails are typically county-funded, policymakers may have success accessing criminal justice costs through partnership with county officials.
- County budgets may delineate jail costs and provide specific information about average costs per jail day, psychiatric and prescription drug costs, as well as other general medical costs associated with inmates who have mental illness.

- When county-specific information is not available, peer-county information (e.g., data from counties of similar size, financial resources) may be useful provided that their differences in inmate mental health treatment policies and practices are taken into account.

Collecting AOT program data

In communities where policymakers are still exploring AOT cost effectiveness, formalized AOT programs are not yet likely to be established. Therefore, local policymakers may want to limit analysis to costs of existing systems and structures similar to the Summit County approach. For example:

- Court costs associated with administration of mental health courts (if available)
- Costs of court liaisons who work with courts to ensure communications between the treatment system and courts
- Costs of county mental health board staff and technology systems that track service utilization and costs by person.

Quantifying the impact of AOT is essential for demonstrating the return on investment in formal AOT programs or existing mental health treatment systems. The framework provided in this report to calculate AOT cost effectiveness aligns with the cost drivers and savings centers identified in the New York and Summit County examples, both of which showed promising results. While the strategic recommendations and considerations for undertaking analysis may appear overwhelming, they are rooted in existing roles and processes that merely need to be coordinated and carried out. In the end, state and local policymakers should arrive at a defensible decision to adopt or implement AOT laws.

INTRODUCTION

Assisted outpatient treatment refers to a program or collection of services in which community-based mental health treatment is delivered under a civil court order to an individual who meets criteria established by the state where the order is issued. Criteria differ by state but are universally limited to at-risk adults with severe mental illness who have a history of cycling through jails, prisons, emergency departments, or hospitals because of symptoms associated with repeated non-adherence to prescribed treatment. Psychosis, paranoia, or delusions typically are among the associated symptoms.

A number of studies have found that court-ordered outpatient treatment improves treatment adherence and engagement in the target population, reducing the incidence of psychiatric emergency/crisis service use, criminal justice involvement, and other consequences of non-treatment. Additionally, because AOT services are provided in home and community-based settings, they offer a less costly and less restrictive alternative to inpatient treatment for persons with severe mental illnesses. As a result, the costs incurred by the high utilization of public services in the eligible population drop significantly when costs are compared prior to, during, and after AOT.¹ Cost savings have been found both in jurisdictions where AOT is administered with new funding in discrete programs and where it is integrated with and delivered through existing mental illness treatment and support services.²

This report reviews cost effectiveness findings in six New York jurisdictions that provide AOT within discrete programs and in Summit County, Ohio, where it is provided within the existing mental health structure. It identifies data elements that have been isolated as determinants of AOT cost impact by independent researchers and concludes with guidelines for projecting or analyzing AOT cost impacts and limitations of the data available. The scope of HMA's report was limited to documenting and summarizing findings of independent AOT cost effectiveness research. HMA was not tasked with evaluating the methodology or findings of cost effectiveness research.

HOW ASSISTED OUTPATIENT TREATMENT IS UTILIZED

Known variously as assisted outpatient treatment (AOT), involuntary outpatient commitment (IOC), mandatory outpatient treatment (MOT), and by other names, AOT universally involves a civil court finding that an individual with an untreated severe mental illness meets AOT criteria established by state statute. In fewer than half the states, AOT is used as a pre-emptive mechanism for avoiding psychiatric deterioration that may result in commitment in an inpatient facility. In most states, it is applied after an individual living in the community has decompensated and been found to meet commitment criteria related to either grave disability or dangerousness. It is also widely used in connection with discharge planning from involuntary psychiatric hospitalization to assure treatment continuity (or, less commonly, between jail and the community). Typically,

¹ Ritter, Munetz and Teller, 2013

² Swartz and Swanson, 2013

violation of the court-ordered conditions can result in individuals being evaluated and treated in a psychiatric facility if they are found to meet the inpatient commitment standard. Only five states (Connecticut, Maryland, Massachusetts, New Mexico, and Tennessee) have not yet codified AOT in their statutes. Other states (e.g., California, Florida, and Texas) have AOT statutes but either have not promulgated statewide policies implementing AOT or have left it to local communities to implement, as they deem appropriate.

Jurisdictions that utilize civil court orders to provide outpatient psychiatric services often refer to their AOT as “programs,” but many jurisdictions – including Summit County, Ohio – provide AOT as part of the existing framework for outpatient mental health services. In these locations, individuals are fully integrated into service programs that are offered to all public mental health recipients; no additional staff positions, funding streams, or services dedicated to the AOT recipients are created. In such “programs,” the existence of a court order is the only difference between an AOT patient and an individual who has chosen to accept services. While discrete AOT programs do exist in some locations (the most well-known being New York’s Kendra’s Law program described herein), these are in the minority. Discrete programs typically develop separate infrastructure and bureaucracy for managing and providing services to AOT patients.³

Although AOT laws are enacted on a statewide basis, services are administered locally. As a result, the structure of AOT services may vary according to each state and local mental healthcare delivery system.

WHO RECEIVES ASSISTED OUTPATIENT TREATMENT SERVICES?

AOT is designed to benefit adults with severe mental illness who need ongoing psychiatric care to prevent relapse, re-hospitalization, or dangerous behavior, and who have a documented history of difficulty following through with community-based treatment. The demographics of AOT participants typically mirror those of other participants in the public mental health system in terms of incidence of co-occurring disorders, age, homelessness rate, etc.

In the jurisdictions studied, AOT recipients represented a small proportion of the total adult mental health service population. For example, in 2005, of the 138,602 New York state Office of Mental Health (OMH) adult services recipients with severe mental illness, only 2,420 (1.7%) were AOT recipients. However, this segment of the population, characterized by their history of noncompliance/disengagement with treatment, represents a major driver of treatment and system costs through the repeated use of crisis services, inpatient hospitalization, and contact with the criminal justice system.

WHAT IS THE IMPACT OF AOT SERVICES?

Both the New York and Ohio studies found that court-ordered outpatient treatment reduced the incidence of psychiatric emergency crisis services, hospitalization, and criminal justice involvement

³ Ibid.

– the leading drivers of costs in the public mental health system. Increased costs were associated with treatment adherence in all jurisdictions as individuals refilled their medication prescriptions, kept appointments with case workers, were served by assertive community treatment (ACT) teams⁴, and otherwise made use of community services. But, in all cases, the cost savings in other categories resulted in a net savings across the population (i.e., higher community mental health service costs were more than offset by the reduction of other public investments such as hospitalization and incarceration).

Summary of Per Person AOT Cost Savings			
	New York		Summit County
	New York City	Outlying 5 counties	
A. Total systems costs pre-AOT	\$104,753	\$104,284	\$35,103
B. Total systems cost post-AOT	\$52,386	\$39,142	\$17,540
C. Cost of AOT “program”	3,641.00	4,289.00	0.00
D. Net AOT cost (B + C)	56,027.00	43,431.00	17,540.00
E. AOT savings (A - D)	\$48,726	\$60,853	\$17,563
	47%	58%	50%

ASSESSING THE COST IMPACT OF IMPLEMENTING AOT

Jurisdictions seeking to assess the cost effectiveness of AOT will have different needs, different systems, and varying levels of access to data, but will be focusing on the same population which is impacting numerous systems common to all of them. AOT-eligible individuals, by definition, have a history of utilizing high-cost resources, often in multiple systems, which means that obtaining relevant data and conducting meaningful cost impact analysis is feasible. The remainder of this report utilizes assessments of the New York and Summit County AOT programs to suggest a framework that decision makers can apply to project the cost of implementing AOT and to calculate the economic return from having implemented it.

WHAT DATA ARE NECESSARY TO ASSESS NET AOT COSTS?

Four basic questions must be answered to project or analyze AOT cost effectiveness:

1. What is the size of the jurisdiction’s AOT-eligible population?
2. What are the quantifiable direct and indirect public service costs of individuals in this population *prior to* initiation of AOT?
3. What are the quantifiable direct and indirect public service costs of these individuals *during and after* participation in AOT?
4. What are the net savings realized from AOT (the difference between 2 and 3 above)?

⁴ Assertive community treatment, or ACT, is an intensive and highly integrated approach for community mental health service delivery. ACT programs serve outpatients whose symptoms of mental illness result in serious functioning difficulties in several major areas of life, often including work, social relationships, residential independence, money management, and physical health and wellness.

Relevant cost data associated with serving AOT-eligible patients include but are not limited to:

- Direct costs
 - inpatient and outpatient psychiatric services
 - hospitalization for non-psychiatric medical conditions
 - outpatient services for non-psychiatric issues
 - pharmaceutical costs
 - administrative costs for serving these patients, including any civil commitment court costs
- Indirect costs
 - shelter costs (homeless housing/housing supports)
 - law enforcement costs (e.g., police response, transportation)
 - court costs, including legal assistance and court proceedings for implementation
 - jail and/or prison costs, including medication costs

WHAT ARE THE OBSTACLES TO COLLECTING THE NECESSARY DATA?

Meaningful cost-effectiveness assessment requires elected officials and their agency leaders to look at costs and savings cooperatively and comprehensively. Peering into the mental health silo, the courts silo, or the corrections silo alone might be instructive, but assessing the real return on investing in AOT – the *net* savings or cost to taxpayers – requires identifying all the silos that using AOT impacts, extracting the cost/savings information from each, and calculating the total return on investment of public dollars. Effectively accessing data about relevant cost drivers may require establishing new relationships between mental health authorities at the state and county levels and among Medicaid officials, courts, and the criminal justice system.

This can be challenging. For example, AOT-eligible individuals are more likely than other citizens to be criminal justice-involved, but the discrete costs of law enforcement arrest, transport, and booking may not be tracked. In addition, jail budgets exist entirely independent of mental health service budgets – and often in competition with them, with agency heads seeking the same dollars to fund their programs. Savings that occur in the corrections silo – as a result of fewer individuals being jailed – do not show up in the bottom line of the mental health department, where medication costs are likely to rise because the AOT participants adhered to treatment and avoided the relapse that otherwise might have landed them into jail.

Other likely challenges to overcome include:

- Data or parts of certain measures may be collected by several agencies in different formats.
- Cross-agency collaboration may not be developed enough to readily share data.
- Data collection systems may not readily share data between systems.
- Data elements may be reported in differing periods or formats.
- External policy, program, and funding changes may occur that impact cost and utilization outside of the AOT experience.

METHODS FOR COLLECTING RELEVANT DATA

The methods used by researchers in New York and Summit County to determine AOT costs are described below and in the Costs Drivers and Savings Center section to illustrate how data may be collected to assess/project AOT cost effectiveness.

New York

In New York, researchers interviewed stakeholders throughout the state; conducted structured interviews in the six sampled New York jurisdictions; obtained lifetime arrest records, obtained Medicaid claim histories, and psychiatric facilities admissions records for the study sample; and collected AOT program administrative, tracking, and evaluation data.

Summit County

In Summit County, researchers examined previously collected data on people participating in assisted outpatient treatment between 2001 and 2005. Data were collected through Summit County Alcohol, Drug Addiction and Mental Health Services Board administrative and services database.

COST DRIVERS AND SAVINGS CENTERS

MENTAL HEALTH SERVICE COSTS

In both New York and Summit County, the largest savings resulted from decreased psychiatric hospitalizations. Pre-AOT hospital costs were 40% percent of the average total per person costs in New York City, and 52% percent of the average total per-person costs in the five-county area. They represented 67% percent of the average total per person costs in Summit County. It is important to keep in mind that the New York study identified costs that Summit County did not track, including the costs of operating the AOT program and the increased use of outpatient and community services, which reduces the impact of hospital costs compared with total costs. This suggests that access to data regarding mental health service utilization and cost is essential for assessing the cost impact of using AOT.

How New York Assessed Mental Health Service Costs

Mental health services costs for the study sample were obtained from state psychiatric hospital admission files, the Tracking for Assisted Outpatient Treatment Cases and Treatment database mandated by the Kendra's Law legislation, and Medicaid service claims. Mental health services costs were obtained for the following categories:

- hospitalization paid for by the New York State Office of Mental Health
- hospitalization paid for by Medicaid
- partial hospitalization (outpatient psychiatric services provided to patients during the day without overnight stays as an alternative to inpatient care)
- psychiatric emergency room visits or crisis services
- outpatient programs, including assertive community treatment and continuing day treatment

- case management (including intensive, blended, and supportive types)
- clinician visits (including billed encounters with psychiatrists, psychologists, and clinical social workers)
- outpatient prescription medication
- chemical dependency treatment; and
- transportation to treatment

How Summit County Assessed Mental Health Service Costs

Measures of mental health services costs were obtained from:

- physician and non-physician assessment
- community residential treatment
- crisis care and intervention
- group and individual community psychiatric support
- group and individual counseling
- pharmacologic management
- other non-health services
- partial hospitalization (see definition above)
- residential treatment and care
- social recreation
- subsidized housing
- vocational services

In both examples, the researchers aggregated data by service type (e.g., mental health, hospitalizations, substance abuse) and time period (before and after AOT; though Summit County also assessed changes in data during AOT).

MEDICAID SERVICES COSTS

Medicaid-reimbursed non-psychiatric service costs emerged in the disparate New York settings and in Summit County as significant cost and savings centers. This makes Medicaid service and expenditure data a valuable source of information, particularly when paired with other data typically available at the local level (e.g., jail, housing, community mental health services).

Medicaid utilization and payment data permit an understanding of elements including, but not limited to:

- client demographics (Medicaid ID #, name, address, gender, ethnicity, date of birth)
- diagnosis
- service rendered
- date of service
- unit of service
- and service costs

Non-psychiatric Medicaid costs often incurred by the AOT-eligible population included hospital emergency department (ED) visits; non-psychiatric pharmaceuticals; and primary and specialty medical, dental, laboratory/diagnostic, preventive, and other services.

NOTE:

Accessing Medicaid savings data may require ongoing coordination and collaboration with state Medicaid officials. Medicaid data requests from multiple counties with unique data needs are usually difficult to fulfill. To the extent possible, data requests should focus on the broadest data sets feasible, rather than seeking individual county data sets.

CRIMINAL JUSTICE COSTS

An estimated 40% of individuals with serious mental illness experience incarceration, at least briefly, at some point in their lives⁵, and research has found that AOT-eligible individuals are significantly more likely to have repeated contact with the criminal justice system than the general population. A major study of prison populations found that inmates with major psychiatric disorders had a substantially increased risk of multiple incarcerations. A large proportion of persons with severe mental illness who have committed criminal offenses and are now in jails and prisons have been found to be highly resistant to psychiatric treatment⁶. Therefore, it is not surprising that both Ohio and New York saw reductions in criminal-justice-related consequences after implementing AOT. These cost savings are important to consider in combination with the significant cost savings realized by reductions in psychiatric hospitalizations.

How New York Assessed Jail Costs

In New York, matching records of arrest, jail, and prisons stays were obtained for participants in the AOT program from local sheriffs' offices, the New York State Division of Criminal Justice Services, and the New York State Department of Corrections and Community Supervision. Criminal justice costs were obtained for arrests and jail and prison days. Arrest costs were based on inflation-adjusted published estimates from a 1999 study by Clark and colleagues.⁷

These estimates included costs for:

- police
- booking
- courts,
- attorney services
- transportation
- jail

⁵ More Mentally Ill Persons Are in Jails and Prisons Than Hospitals: A Survey of the States, Treatment Advocacy Center, May 2010 at http://www.treatmentadvocacycenter.org/storage/documents/final_jails_v_hospitals_study.pdf.

⁶ Lamb, HR, et al. Treatment prospects for persons with severe mental illness in an urban county jail. *Psych Services* 2007 58: 782-786.

⁷ Clark RE, Ricketts SK, McHugo GJ: Legal system involvement and costs for persons in treatment for severe mental illness and substance use disorders. *Psychiatr Serv* 1999; 50:641-647

Per-day jail costs were obtained from individual county jail “Cost of Operation” worksheets, which are completed by jails on an annual basis and submitted to the State. Costs for medication prescribed in jail were obtained from interviews with key jail personnel. Per-day prison costs were based on information obtained from the New York State Department of Corrections and community supervision chief fiscal officer.

How Summit County Assessed Jail Costs

Data on jail dates were collected through administrative and services databases. Service data were aggregated by service type and time period (before, during, or after) of occurrence and merged with the hospitalizations, incarcerations, demographics, and diagnoses data. The data were then annualized by dividing the number of each type of service unit by the number of days in the period and multiplying by 365. These data were analyzed by means and paired samples tests (e.g., before/during; during/after, and before/after AOT). Then, each type of annualized service, as well as jail and hospital days, were multiplied by its cost per unit. These data were then analyzed by means and paired samples tests. In addition, the costs were aggregated by time period of before, during, and after AOT.

Neither the studies in New York nor the study in Summit County included indirect cost savings from reduced law enforcement and court costs associated with reduced arrest rates in the target population. However, this data would be useful to collect in the future to determine a more accurate view of net cost savings.

NOTE:

Criminal justice costs will vary in amount and by what costs are reported across jurisdictions. However, since jails are typically county-funded, decision makers may have success accessing criminal justice costs through partnership with county officials and law enforcement organizations. County budgets may delineate jail costs and provide specific information about average costs per jail day, psychiatric and prescription drug costs as well as other general medical costs associated with inmates who have mental illness. When county-specific information is not available, peer-county information (e.g., counties of similar size, financial resources) may be utilized, but with the awareness that counties approach mental health treatment for inmates differently from one another.

DETERMINING HOMELESSNESS SERVICES/HOUSING COSTS

Homeless services (e.g., shelter, food) for individuals with severe mental illness are another public cost driver to be considered in assessing the cost effectiveness of assisted outpatient treatment. A 2010 study in Philadelphia, for example, found that the city was spending \$22,372 per person – 60% of the city’s entire cost for homeless individuals – on 438 homeless people with serious mental illness.

Approximately 26 percent of homeless adults staying in shelters live with serious mental illness.⁸ In New York, homelessness was analyzed through self-reporting; homelessness outcomes compared individuals currently receiving AOT to those who never had AOT or who had received it for more than six months previously. Research found that current AOT recipients and individuals participating in similarly high-intensive assertive community treatment without AOT experienced comparable rates of homelessness. However, a slightly lower percentage of active AOT recipients were homeless. The proportion of individuals reporting at least one night of homelessness decreased from 12% to 7%-8%.

New York Homelessness Services/Housing Costs

- Costs for shelter were reduced significantly, based upon increased engagement in supportive housing as a result of increased treatment adherence
- Annual shelter costs: \$4,658 (pre-supportive housing)
- Annual shelter costs: \$1,839 (post-supportive housing)

Summit County, Ohio, Homelessness Services/Housing Costs

The Summit County report did not include an analysis of shelter costs.

NOTE:

Administrators of local Homeless Management Information System (HMIS) may be able to assist policymakers in gathering information about daily census and costs of emergency shelters. Local homelessness service systems may also assist policymakers with understanding permanent supportive housing costs to factor into cost effectiveness studies. Where county-specific information is not available, policymakers may rely on state or national statistics that can be adjusted to reflect local realities

AOT PROGRAM ADMINISTRATION COSTS

The cost of administering AOT programs and related activities is important to quantify, particularly if communities invest in specific activities that would not otherwise exist absent AOT implementation.

In New York, OMH established a discrete AOT program responsible for developing and disseminating guidelines to counties to ensure the appropriate implementation and operation of AOT statewide. OMH program staff includes a statewide AOT director, assistant counsel, and other staff. In addition, OMH established regional AOT program coordinators responsible for monitoring and oversight of single or multiple counties.

In most counties (except in New York City) the county mental health directors operate, direct, and supervise their AOT programs either directly or by designation to other local mental health officials. In New York City, the director of community services (executive deputy commissioner for mental

⁸Mental Illness Facts and Numbers, NAMI, http://www.nami.org/factsheets/mentalillness_factsheet.pdf

hygiene) for the New York City Department of Health and Mental Hygiene oversees implementation of the city's AOT program, which is administered by designated teams of employees of the New York City Department of Health and Mental Hygiene.⁹

In Summit County, Ohio, administration of AOT is less defined and relies on a collaborative approach that builds on existing roles and functions of the court, county mental health treatment systems, and mental health providers. The mental health treatment system includes the Summit County Alcohol Drug and Mental Health Board, which oversees the mental health system for indigents, and private, nonprofit mental health treatment service providers. Treatment providers employ staff such as a treatment manager, treatment supervisor, court liaison, community living specialist, vocational specialist, and treatment psychiatrist, jail screening psychiatrist, therapists, and counselors.

SUMMARY OF NEW YORK AOT COST EFFECTIVENESS FINDINGS

In 1999, New York State created a program (Kendra's Law) authorizing court-ordered treatment in the community for people with severe mental illness at risk of relapse or deterioration absent voluntary adherence to prescribed treatment. Since then, the state made a substantial investment in AOT services.

A 2009 evaluation report of New York's AOT implementation and effectiveness concluded that AOT recipients were at lowered risk of arrest than their counterparts in enhanced voluntary services and that receiving AOT combined with assertive community treatment (ACT) services substantially lowered the risk of hospitalization compared to receiving ACT alone. The evaluation also determined that AOT recipients appeared to fare better during and after AOT if the AOT order lasted for six months or more. When the initial period of AOT was longer than six months, reduction in hospitalization in the post-AOT period was sustained whether or not the recipient continued to receive intensive treatment services. When recipients received AOT for a period of six months or less, the risk of re-hospitalization was found to be dependent on their continued receipt of intensive treatment services.¹⁰

Researchers conducted a follow-up study, published in the *American Journal of Psychiatry* in 2013, to assess the state's net costs for assisted outpatient treatment. Total service costs were collected for a sample of 634 AOT recipients before participation and compared with costs for the first and second year of AOT participation and following participation.

The comparison found that inpatient psychiatric hospitalization declined markedly during the first 12 months after AOT was initiated while the cost of providing community-based services once the participants began adhering to treatment increased (e.g., case management, assertive community treatment, other outpatient services). The study also found increased cost for psychotropic medication refills associated with adherence to prescription medications.

⁹ New York Office of Mental Health Assisted Outpatient Treatment Reports at <http://bi.omh.ny.gov/aot/about>

¹⁰ New York State Assisted Outpatient Treatment Program Evaluation, 2009.

In the second 12-month period, additional modest declines were observed for hospitalization rates. Case management and outpatient program participation also declined but remained above pre-AOT levels. Use of AOT also resulted in declines in use and cost of psychiatric emergency and crisis services, clinician visits and criminal justice involvement.

This net cost impact on the New York Office of Mental Health was reported to be a 41% reduction in per-person inpatient treatment costs from the pre-AOT period to the first 12 months after AOT was initiated (from \$142,000 to \$84,000 per person). Some of those reductions were lost in the second 12 months following discharge from AOT (from \$84,000 to \$119,000) but remained lower than pre-AOT costs, reflecting a 16% overall reduction from pre-AOT to post-AOT.

New York State also experienced consistent reductions in Medicaid costs per person hospitalized in both of the 12-month periods following initiation of AOT (30% reduction from \$66,000 to \$46,000 in NYC; 61% reduction from \$47,000 to \$18,000 in the five-jurisdiction sample). The average annual costs to provide outpatient treatment increased per person served after AOT began, but those costs were less than inpatient hospital costs, and services were provided in home and community-based settings that are less restrictive for participants.¹¹

Please see below for additional highlights from the New York AOT cost effectiveness study.

¹¹ Swanson, et. al. "The Cost of Assisted Outpatient Treatment: Can it Save States Money?" AJP Online. Aia:1-10.

Highlights from New York AOT Cost Effectiveness Study

Study Timeframe: 36 months (12 months before AOT was initiated upon discharge from the first psychiatric hospitalization and two subsequent 12-month periods following initiation of AOT)

Changes in Service/System Utilization:

First 12 months of AOT participation

- **Hospitalization declined** markedly (41%).
- **Service utilization increased** (case management, assertive community treatment/ACT, other outpatient services, and psychotropic medication fills).

Second 12 months of AOT participation

- **Continued modest declines** (16%) in hospitalization rates.
- **Declines for case management and outpatient program participation** but still more than pre-AOT costs.
- **Declines in** use of psychiatric emergency and crisis services, clinician visits and criminal justice involvement.

Increases in outpatient utilization rates were sustained into the third 12-month period of observation, during which members of the study population typically were no longer subject to court-ordered treatment.

Changes in Cost:

- Average annual cost of **inpatient treatment per person declined** from about \$142,000 to about \$84,000 from the pre-AOT period to the first 12 months of AOT participation.
- Inpatient treatment costs per person rose to \$119,000 per person hospitalized in the second 12 months under an AOT order.
- **Medicaid-paid cost per person hospitalized consistently declined** in both periods following initiation of AOT (\$66,000 to \$46,000 in NYC and \$47,000 to \$18,000 in the five-county sample).
- Average **annual costs for assisted outpatient treatment increased** from about \$6,000 per person served in the year before AOT was initiated to about \$14,000-\$18,000 per person served in the first year of AOT.
- Average annual criminal justice costs per person revealed no clear pattern but mostly increased. Fewer individuals were involved with the criminal justice system during AOT periods, but those who were arrested or incarcerated incurred approximately the same or higher costs.
- Medication adherence also was associated independently with lower service costs in these samples.

Limitations:

- In patients without prior hospitalization, assisted outpatient treatment cost savings are reduced significantly.
- The magnitude of the New York results may not be experienced in jurisdictions where AOT operates differently and/or where the public system may be less generously funded, even in New York State.
- The sustainability of improved outcomes and their resulting reduced costs after outpatient services terminate has not been studied.
- Hospitalizations paid for by private insurance were uncommon and not included in analysis.

SUMMARY OF SUMMIT COUNTY AOT COST EFFECTIVENESS STUDY

Assisted outpatient treatment has been used in Summit County, Ohio, consistent with the state's civil commitment statute since the early 1990s. Service cost data was collected for individuals who received court-ordered outpatient services from 2001-2007 and compared to costs prior to AOT in order to assess the cost effectiveness of civil commitment to community-based services.

In Summit County, additional resources were not budgeted for the implementation of AOT. Instead, collaboration among county stakeholders produced an AOT "program" through use of existing resources and roles such as the court (e.g., judge, public defender, prosecutor, bailiff, and court security personnel), the mental health treatment system (e.g., court liaison, community living specialists, vocational specialists), and the existing county mental health board. For purposes of this report, Summit County has no additional program costs associated with AOT because the county presumes it would incur related costs to provide care for AOT-eligible individuals absent court-ordered treatment, either through criminal justice or inpatient civil commitment.¹²

Economic analysis of the Summit County data found that, as in the multiple New York study sites, there were significant reductions in specific public cost components from the period prior to AOT participation to the periods during and after the treatment.

The analysis found that annualized aggregated costs per person declined 50% from a mean of \$35,104 before court-ordered outpatient treatment to \$26,137 during AOT participation and further to \$17,540 after participation (i.e., cost savings were sustained even after the program ended).

As in New York, the majority of cost savings resulted from decreased hospitalizations that occurred while the court order was in effect. Group community psychiatric support and respite services were the only cost components to experience increases when the period prior to AOT was compared to the period following AOT. The researchers concluded there were significant benefits to individual participants in the outpatient commitment program and to the public systems administering the program with the shift from crisis-oriented services to outpatient services.¹³

Please see below for additional highlights from the Summit County cost effectiveness study.

¹² A Case Study Of The Akron Mental Health Court, Ohio Office of Criminal Justice Services, Statistical Analysis Center http://www.publicsafety.ohio.gov/links/ocjs_AkronMHCcasestudy.pdf, 2002.

¹³ Final Report to the Treatment Advocacy Center Assisted Outpatient Treatment Cost Savings Study, 2014.

Highlights from Summit County, Ohio, AOT Cost Effectiveness Study

Study Timeframe: 2001-2007

Changes in Service / System Utilization

- **Significant declines in** hospitalizations, mental health assessment by a non-physician, and individual counseling during and after AOT.
- **Declines in** crisis intervention and mental health pharmacologic management services from pre-AOT to post-AOT.
- **Declines in** crisis intervention, individual community support, individual counseling, and partial hospitalization *during* AOT to post-AOT.
- **No significant changes** occurred in any of the alcohol and drug services.

Changes in Cost:

- **Annualized aggregated costs per person declined** during the period the court order was in effect and after the court order ended (mean: \$35,104 before, \$26,137 during, and \$17,540 after, a 50% reduction in total costs).
- **Majority of cost savings was due to the decrease in hospitalizations during the court order.** Hospital costs did not significantly change in the post-AOT period.
- **Group community psychiatric support and respite services costs** increased from the pre-AOT to the post-AOT period.

Limitations:

- Generalizability is limited by the small sample size, representing a single jurisdiction.
- Information was not available for service administration costs for AOT participants prior to entering the program.
- Hospital cost savings are likely underestimated because data was available only for *public* hospitalization days but not for *private* hospitalization days.

OTHER STUDIES

To expand the geographic representation of this report, supplemental, albeit limited, information was identified on AOT cost effectiveness in Bexar County, Texas; Nevada County, California; and Seminole County, Florida. Changes in hospitalization costs similar to those experienced in New York were reported in Nevada County and Seminole County.

Nevada County

- Assisted outpatient treatment (“Laura’s Law” in California) was delivered largely from within the county’s existing mental health services program, with new expenditures of \$40,000 for a half-time position. The county’s existing mental health services included assertive community treatment teams, which were used for the AOT program.
- The county reported a net 45% savings (\$503,621) over the first 30 months of the program.
- This translated into savings of \$1.81 for every \$1 spent.
- Savings resulted primarily from reduced acute psychiatric hospitalization and incarceration among those eligible for AOT.
- The county projected that if AOT were implemented statewide, California counties would save \$189,491,479 in mental illness-related costs in the subsequent 30-month period.

Seminole County

- Assisted outpatient treatment (a provision of Florida’s “Baker Act”) was delivered by the Seminole Behavioral Health Acute Care team, a seven-member committee responsible for monitoring the county’s most severely impaired clients. Thirty-six patients in the model AOT program were treated with existing services and funding. The program obtained grant funds to hire a short-term coordinator to initiate the program and collect outcome data.
- Aggregated hospitalization costs for AOT recipients while placed in the program were reduced by a cumulative \$303,728 from the year prior to participation in the program
- Cumulative incarceration costs decreased \$14,455.

Please see Appendix A for additional information regarding these counties and Bexar County.

CALCULATING AOT COST EFFECTIVENESS

The cost analyses in New York and Summit County provide one framework for other jurisdictions to use in projecting or assessing the cost implications of implementing assisted outpatient treatment. Both counties applied the following common measures to AOT recipients before and after court-ordered treatment (Summit County also included costs “during” AOT).

Calculating the net savings from implementing an AOT program requires collecting various data elements to compare costs of treating the relevant population before the implementation of AOT and after. The potential savings include not only a reduction in the cost of providing health services – that is, the direct costs – but also indirect costs for non-health services that may be changed by the implementation of AOT. Relevant costs (not necessarily exhaustive) are listed below.

Total per-person costs for mental health services

- Total state inpatient psychiatric hospital costs
- Total outpatient mental health service costs
 - Evaluation/assessments
 - Crisis services
 - Assertive community treatment (ACT)
 - Case management/care coordination
 - Counseling
 - Medication management
 - Community/social supports

Total per-person costs for other medical services

- Total costs of inpatient psychiatric care in a general hospital
- Total costs of non-psychiatric inpatient care
- Total hospital emergency department
- Total outpatient costs:
 - Physician
 - Facility diagnostic and treatment costs
 - Private duty nursing
 - Home health care
 - Rehabilitative therapies
 - Personal care
 - Durable medical equipment
 - Lab
 - X-ray
 - Pharmacy

Total per-person criminal justice costs

- Total general costs per inmate day
- Total general medical costs per inmate day
- Total psychiatric costs per inmate with SMI per day

- Average court costs (e.g., filing fees, courtroom, public defender, prosecutor) per individual
- Average per person costs associated with psychiatric evaluation

Total per-person homelessness services costs

- Emergency shelter costs per day
- Post AOT, policymakers may want to compare shelter costs with costs of permanent supportive housing

Total per-person legal and court costs

- Average court costs (e.g., filing fees, courtroom, attorney) per individual who has been civilly committed
- Average per person costs associated with psychiatric evaluation per individual who has been civilly committed

If not operated within existing services, total per-person “AOT program” administration costs

- Court-costs associated with administration of mental health court
- Court liaisons who work with courts to ensure communications between the treatment system and courts
- Costs of county mental health board staff and technology systems that track service utilization and costs by person.

NOTE:

It is essential to normalize all costs to the same denominator. Some will be reported by person per month, some by person without a time frame, some for different time periods. To be meaningful, final calculations must put each data element into a format that supports comparison with the other elements. AOT costs can then be analyzed by reviewing total all-costs incurred prior to AOT with costs during and post-AOT.

STRATEGIC RECOMMENDATIONS FOR POLICYMAKERS

Whether considering a new AOT program or assessing an existing one, it is essential for policymakers to obtain as much relevant data as possible in order to accurately gauge the system’s return on its investment in the outpatient commitment process. Gathering such data can also provide a baseline to gauge the utility and cost effectiveness of an approach and to allow comparisons to other potential solutions.

However, in the context of a program like AOT, which impacts a number of different cost centers, finding reliable sources of information for each impacted data element can be complicated and daunting. The strategies below offer experience-based guidance to help public officials overcome these difficulties and more reliably project and/or assess the impact of the AOT-eligible population on budgetary resources and the cost effectiveness of new or expanded AOT as an option for providing treatment in a less restrictive, community-based setting.

Collecting mental health data

Policymakers and other public officials should:

- Identify and meet with local and state mental health authorities (e.g., state mental health department officials and, as applicable, county mental health board leadership) to understand what mental health treatment and support services are available and how they are financed. Determine what services are provided to adults with mental illness and whether they are paid using local-only, state-only, Medicaid-only, or other funding sources.
- Work with officials to isolate available data that describes utilization of publicly funded mental health treatment and support services and costs. Learn who reports the data, in what format it is collected, for what periods it is collected, where it resides, on what terms it can be released for analysis, what privacy limitations are attached, costs to obtain the data, and other factors effecting access to the data.
- Determine processes and limitations for obtaining and utilizing mental health cost and service data. Privacy and security policies will limit access to individually identifiable data, but access to aggregated and de-identified data containing average utilization and service cost profiles may be available.
- Determine the extent of federal Medicaid coverage for various treatment options. Because resources used to implement AOT typically do not trigger the Medicaid Institutions for Mental Diseases (IMD) exclusion, state resources utilized for AOT-eligible individuals will typically be federally reimbursable in a manner that treatment in an inpatient psychiatric facility is not.
- Seek the following baseline information from local and state officials:
 - Total number of adults with severe mental illness in the community
 - Insurance status of service users (e.g., uninsured, Medicaid, Medicare, commercial, etc.)
 - Service utilization and cost per service per individual (e.g., total days and cost per day of inpatient psychiatric hospitalization as well as total units and cost per unit of crisis emergency service, counseling, medication management, and community/social support services)
 - Date of service, so that analysis can include comparisons pre-, during-, and post-AOT

Collecting other relevant medical data

- Local policymakers may want to convene stakeholders around a broader, statewide effort to engage Medicaid and discuss the potential cost savings associated with appropriate use of mental health services. Most states are aware of the higher costs of care associated with persons with mental illness and may already have initiatives underway that convene stakeholders on this topic.
- In partnership with the state or county mental health authorities, work to establish a relationship with state Medicaid officials. In many cases, state Medicaid and mental health departments work closely together to administer the Medicaid mental health benefit, and meeting with state mental health officials may facilitate access to key Medicaid staff.
- While Medicaid officials have the capacity to associate other medical service costs with mental health service users, policymakers may face barriers in accessing such information due to a number of issues, including competing Medicaid priorities.

- Specific information from state Medicaid officials should include the following state and county baseline data :
 - Total number of Medicaid-eligible adults with severe mental illness
 - Total annual average per person utilization and cost by service (e.g., inpatient psychiatry, inpatient non-psychiatry, pharmacy, primary care, lab, x-ray, etc.)

Collecting criminal justice data

- Criminal justice costs will vary in amount and by what costs are reported across jurisdictions. However, since jails are typically county-funded, policymakers may have success accessing criminal justice costs through partnership with county officials.
- County budgets may delineate jail costs and provide specific information about average costs per jail day, psychiatric and prescription drug costs, as well as other general medical costs associated with inmates who have mental illness.
- When county-specific information is not available, peer-county information (e.g., data from counties of similar size, financial resources) may be useful provided that their differences in inmate mental health treatment policies and practices are taken into account.

Collecting AOT program data

In communities where policymakers are still exploring AOT cost effectiveness, formalized AOT programs are not yet likely to be established. Therefore, local policymakers may want to limit analysis to costs of existing systems and structures similar to the Summit County approach. For example:

- Court costs associated with administration of mental health courts (if available)
- Costs of court liaisons who work with courts to ensure communications between the treatment system and courts
- Costs of county mental health board staff and technology systems that track service utilization and costs by person.

CONCLUSION

Quantifying the impact of AOT is essential for demonstrating the return on investment in formal AOT programs or existing mental health treatment systems. The framework provided in this report to calculate AOT cost effectiveness aligns with the cost drivers and savings centers identified in the New York and Summit County examples, both of which showed promising results. While the strategic recommendations and considerations for undertaking analysis may appear overwhelming, they are rooted in existing roles and processes that merely need to be coordinated and carried out. In the end, state and local policymakers should arrive at a defensible decision to adopt or implement AOT laws.

APPENDIX A

Other AOT Cost Effectiveness Studies Reviewed				
	Bexar County, TX	Nevada County, CA	Seminole County, FL	Multiple Sites ¹⁴
Purpose:	CMS Grant Evaluation	Cost-effectiveness analysis of AOT compared to alternatives	Program evaluation	Advocate for Maine to make PTP more accessible
Study Timeframe:	One year (April 16, 2008 – March 31, 2009)	30 months (started in 2008)	20 months - June 1, 2005 and Jan 1, 2007	N/A
Limitations:	None specified	None specified	None specified	N/A
Changes in Service / System Utilization:	79% reduction in hospital bed day use, post Involuntary Outpatient Commitment program (first year evaluation)	None specified	<ul style="list-style-type: none"> • Significant reduction in hospital days for each patient – overall reduction of 43% (includes drop in CSU days, state hospital days and private hospital days) • Significant reduction in incarceration days post-order – reduction of 72% 	<ul style="list-style-type: none"> • In a study of PTP results in NY: <ul style="list-style-type: none"> ○ 77% fewer experienced hospitalizations ○ 83% fewer experienced arrests ○ 88% fewer experienced incarceration ○ 74% fewer experienced homelessness • In Seminole County, FL – average number of hospital days per patient decreased from 64 to 36.8, a reduction of 43% • In Bexar County, TX – days spent in a hospital bed dropped as much as 87% (with the most current data showing a 67% reduction)

¹⁴ Maine’s study of multiple AOT efforts also referenced initiatives in New York; Seminole County, Florida and Bexar County, Texas.

Other AOT Cost Effectiveness Studies Reviewed

	Bexar County, TX	Nevada County, CA	Seminole County, FL	Multiple Sites¹⁴
Changes in Cost:	There were other cost changes reported, but it was unclear whether they were directly related to the IOCP or not]	<ul style="list-style-type: none"> • Every \$1 spent on AOT yielded savings of \$1.81 from preventing acute psychiatric hospitalizations and jailing. • AOT resulted in a net 45% savings (\$503,621) for Nevada county over the first 30 months of the program • If AOT were adopted statewide, the projected savings for the rest of the state over the next following 30 months would be \$189,491,479 	<ul style="list-style-type: none"> • Group costs for hospitalization days after the order was \$303,728 less than it was prior to the court order • At a rate of \$59/day for an inmate with medical costs at the Seminole County jail, the reduction in costs for incarceration days totaled \$14,455 	<ul style="list-style-type: none"> • In Nevada County, CA program costs of \$80,000 were offset by savings estimated at \$203,000 based on decreased hospitalization costs and reduced incarcerations <ul style="list-style-type: none"> – In Seminole County, FL savings in hospital costs averaged \$14,463 per patient – Reductions in incarcerated days produced an estimated cost savings of \$14,455 • Bexar County, TX estimated savings from reduced hospitalization alone at \$2 million. Additional savings were realized in reduced law enforcement and court costs, incarceration, etc.