Effectiveness and Cost Savings of a Care Coordination Guardianship Model for Clients with Severe Mental Illness

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Background

Guardians are court-appointed representatives who have the authority to make legal, medical, and financial decisions for individuals who lack the capacity to make essential decisions for themselves. Numerous guardianship program models exist, and understanding their effectiveness for particular populations is essential to guide decision-making by guardians, care coordinators, program managers, judicial personnel, program funders, and policy makers.

This study investigates the effectiveness of a program for adults whose mental illness has reached a level of severity where a guardian has been appointed by the probate court. Developed in 2001 by a steering committee of Connecticut mental health, criminal justice, legal, and academic professionals, the program uses a care coordination approach known as the Guardian Model and is implemented by Guardian Ad Litem Services, Inc. (GAL) in Connecticut. The model was developed with the dual goal of improving client outcomes and improving service efficiency to reduce costs for medical, mental health, and criminal justice services.

Implementing care coordination approaches is a high priority of the health and mental health systems nationally (McDonald et al., 2007). The Guardian Model is designed as an independent program that facilitates coordination among the multiple providers who serve each program client. Desired client outcomes include meaningful community involvement, stable housing, adherence to medical and clinical prescriptions, and reduced involvement with the criminal justice system.

The program develops a care plan with input from the client and all service providers. Then GAL maintains regular contact with the client, guardian, and team members to implement the plan and adapt it as the client's circumstances change or shortcomings are identified. Extensive information is gathered about each client's current and past care and outcomes, and this is shared with team members to capitalize on past successes and avoid repeating past failures. GAL provided an average of 63 hours of services per client per year for the three years analyzed in this study.

Assessing the Program's Effectiveness

Since its inception in 2002, GAL has collected medical, psychiatric, and legal data about their clients, primarily to guide their clinical work and inform court hearings. The data can also be used to assess the program's effectiveness.

GAL gathers historical and ongoing records of each client's psychiatric hospitalizations, arrests, emergency room visits, and incarcerations. The program requests information from all of the facilities where the client has been treated, multiple times if needed, with signed releases from the client's guardian. The resulting information makes it possible to compare client health and behavior indicators from before and after they enter the program.

This study describes a time series analysis of GAL client outcomes – a rigorous approach that yields causal conclusions. In other words, rather than showing only whether clients changed after they enrolled in the program, it indicates whether they changed because of the program.

Specifically, the time series analyses answer two questions:

- Was there a significant decrease in the number of incidents during the first year after clients entered the program?
- Was there a significant decrease in the multi-year trend of incidents in the three years after clients entered the program?

The study is based on the 217 GAL clients who stayed in the program for at least three consecutive years after their initial enrollment and whose records contained other key variables that were used in the analyses.[1] The clients' levels of health and behavior indicators from the four years before entering the program were used to establish a baseline level and trend.

The 217 clients included in the study were 68% White, 25% Black/African-American, 5% Hispanic/Latino, and 2% other. Fifty-six percent were male and 99% spoke English as their primary language. All were diagnosed with at least one major mental illness, including 77% with schizophrenia or schizoaffective disorder and 11% with major depression or bipolar disorder. Many also had co-occurring mental health conditions, such as substance abuse disorders.

Improvements in Client Outcomes

For four of the five client outcomes, participating in the GAL program significantly decreased both the number of incidents in the first year of program participation and the trend of incidents across multiple years. These outcomes were psychiatric hospitalizations, number of days in psychiatric hospitals, emergency room visits, and arrests. For the fifth outcome – number of days in jail – participating in the program did not have statistically significant positive or negative impacts on client outcomes.

Figure 1 shows the changes in number and trend one year after program enrollment. For the four outcomes with significant improvement, indicators were trending upward before enrollment, then fell significantly during clients' first year in the program and began trending downward.

[1] Time series analyses controlled for possible influence of gender, race/ethnicity, and age at program enrollment on program impacts. Additional covariates investigated were month of program entry (to assess seasonal effects), and date of program entry (to assess program maturation effects); neither covariate was statistically significant. Income data was available for only 83% of study clients, so it was not used in the primary analyses reported. However, the same time series analyses were conducted with this smaller group, including income as a covariate, and statistical significance of program impacts did not change.

For example, the average number of days spent in a psychiatric hospital was trending upward and reached 82 days per client in the year before enrollment. This fell to 59 days in the first year of program participation. In contrast, if the pre-enrollment trend had continued, psychiatric hospital days would have increased to 88 days during the first year of program participation.

Figure 1: Level and Trend of Client Indicators Before and After Program Enrollment

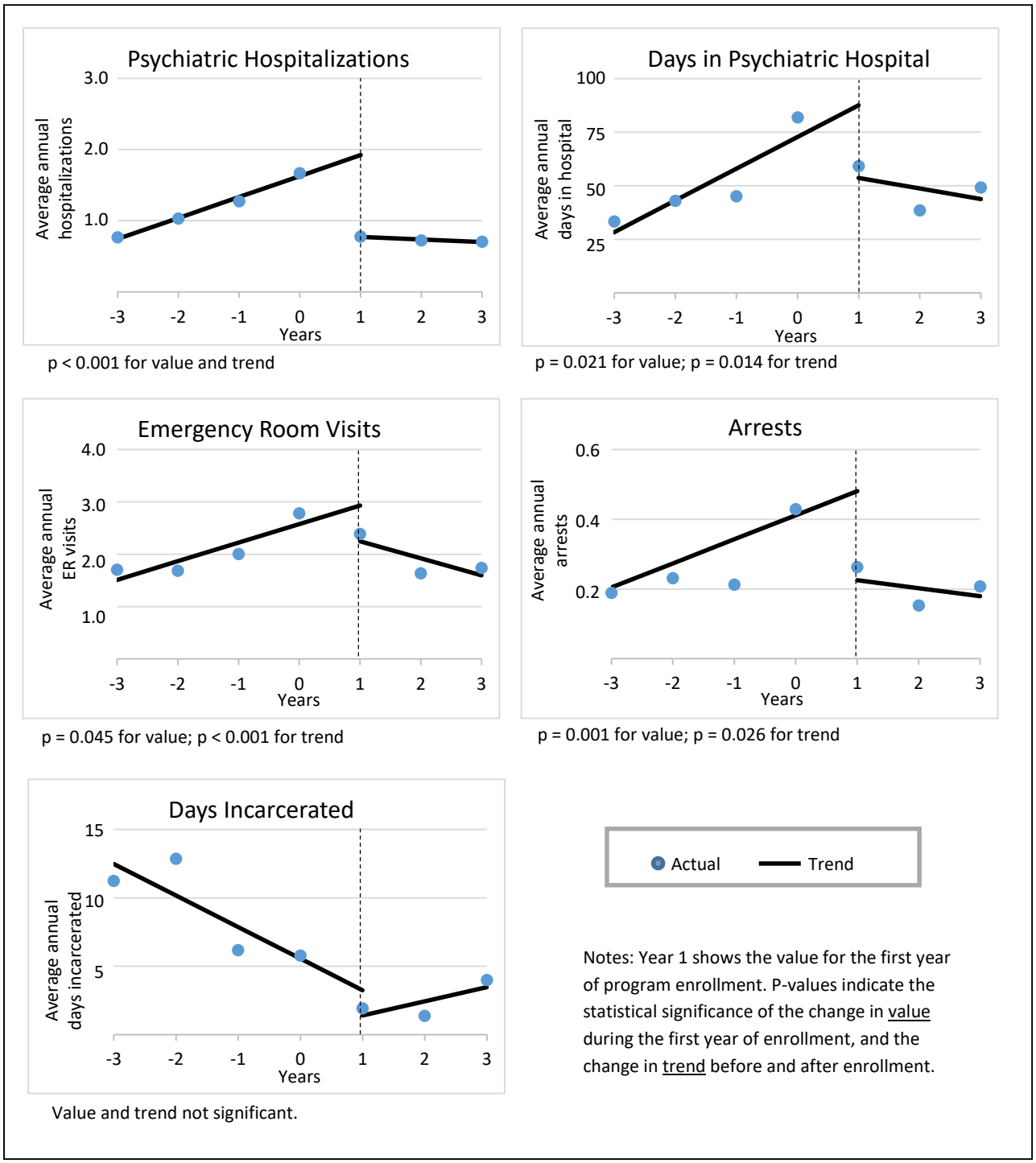

Table 1 provides similar information about actual and predicted values for all five outcome indicators. It shows, for example, that annual arrests were predicted to rise from 0.4 to 0.5 per client but instead fell to 0.3 per client. This translates into one of every three clients being arrested on average, rather than one of every two, a substantial (and statistically significant) difference.

Table 1: Program Impacts on Health and Legal Outcomes

	Average Number of Incidents		
Outcome	Year Before Enrollment	Year After Enrollment	Predicted for Year After Enrollment
Psychiatric Hospitalizations	1.7	0.8	1.9
Days in Psychiatric Hospital	81.9	59.2	87.6
Emergency Room Visits	2.8	2.4	2.9
Arrests	0.4	0.3	0.5
Days Incarcerated	5.8	1.9	3.2

Cost Savings Due To Program Participation

The significant reduction in use of medical, psychiatric, and legal services by program participants demonstrates that the program saves substantial service costs. We calculated two estimates of cost savings that made different assumptions about what would have happened if clients had not enrolled in the program (Table 2). The "maximum" estimate assumed that the increasing trends in client indicators would have continued growing at the same rate, whereas the conservative estimate assumed that the trends would have leveled out.[2]

Table 2: Estimated Cost Savings Due to Program Participation

	Conservative Estimate		Maximum Estimate	
Outcome	First-Year Savings Per Client	Total First-Year Savings (N=217)	First-Year Savings Per Client	Total First-Year Savings (N=217)
Psychiatric hospitalizations[1]	$84,572	$18,352,100	$105,665	$22,929,223
Emergency room visits[2]	$581	$125,970	$809	$175,649
Days Incarcerated[3]	$656	$142,290	$225	$48,875
Total	**$85,808**	**$18,620,360**	**$106,699**	**$23,153,747**

[1] Estimated cost per day is $3,715. Source: Connecticut Department of Public Health, 2015.
[2] Estimated cost per visit is $1,482. Source: Nicks and Manthey, 2012; adjusted to 2015 dollars.
[3] Estimated cost per day is $170. Source: Vera Institute of Justice, 2015.

Based on the conservative estimate, reductions in days hospitalized, emergency room visits, and days incarcerated correspond to a savings of about $18.6 million during the first year after program enrollment for the 217 clients in the study.[3] This corresponds to an average savings of about $85,800 per client in their first year of program participation. Based on the maximum estimate, total savings

[2] The maximum estimate was based on the difference between the predicted and actual values for the first year after clients enrolled in the program. The conservative estimate was based on the difference between the actual values for the last year before clients enrolled and the first year after they enrolled.
[3] Cost savings are in 2015 dollars. The clients in the study began program participation across several years.

would be about $23.2 million during the first year after program enrollment, or an average of $106,700 per client. In contrast, the average annual program cost is about $6,000 per client (Mackniak 2016).

Moreover, these savings continue and increase slightly in the second and third years of program participation, as can be seen by the falling trend lines in Figure 1. The reduced number of days in psychiatric hospitals account for 99% of the estimated savings.

Further research could refine cost savings estimates by incorporating additional factors. For example, accounting for the costs of caring for inmates with severe mental illness could increase estimated savings. Conversely, accounting for the cost of providing additional community services to clients who spend fewer days hospitalized could reduce estimated savings.

Conclusions

The study demonstrates that an intensive care coordination model can have substantial positive effects on health and legal outcomes for adults with severe mental illness who require a guardian. The approach can also produce large cost savings for health and legal services. The Guardian Model warrants replication and additional research to determine its effectiveness in other settings.

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