

# Insanity Acquittees and Rearrest: The Past 24 Years

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Insanity acquittees have been the focus of intense study over the past 24 years. Whether from a treatment or program evaluation perspective, the outcomes of the cohorts are vital for legislative initiatives and resource allocation. The rearrest rate is one commonly used program outcome.

Community councils are interested in the program outcomes for insanity acquittees. Treatment providers, patients, and legislators also form the stakeholder group. Each group has its own perspectives regarding program effectiveness.<sup>1\*</sup> Relative resources, weight, and voice are given (from none to a lot) to each perspective in terms of program direction and fiscal support. Program descriptions and evaluations in the published literature on insanity acquittees have most often taken the perspective of the community/system where perceived safety is paramount. Published literature on acquittees' self-reported outcomes or program evaluation from the providers' perspective could not be found.

Legislators are interested in rearrest as a marker of the effectiveness of community-release programs for insanity acquittees<sup>2</sup> for several reasons. First, constituents in the surrounding encatchment areas, especially those areas with transitional housing, will want and need these numbers. Second, influence and direction for community support services will, in part, be determined by the rate of rearrest. Third, if there is any likelihood of a catastrophic event involving a

released insanity acquittee in their area, legislators will require comparison rates close at hand.

Despite the appeal and need for rearrest information from several perspectives, insufficient information is available to determine whether rearrest is an indication of program success or failure. Although it is a marker for perceptions of increased community safety, rearrest may be a surrogate marker for medication noncompliance in this population. Previous work has defined program success or failure as the revocation of conditional release status,<sup>3</sup> and most authors did not attempt to discuss whether the rearrest rate was indicative of program effectiveness or lack thereof.

Nonetheless, rearrest remains an important outcome. The shortcomings of using this variable for criminal justice program evaluation have been discussed previously.<sup>4</sup> There is a potential systematic bias for those persons rearrested to be accused of a more serious crime and for those previously identified as not guilty by reason of insanity (NGRI) to be rearrested.<sup>5</sup> The issue of systematic bias toward rearrest, once identified and treated as an insanity acquittee, may well be hidden by the high rate of rearrest among members of any criminal justice group.<sup>6–8</sup> Finally, on release from prison, the rearrest of identified mentally ill offenders (MIOs) is influenced by factors such as financial support, housing, substance abuse treatment, and mental health treatment.<sup>7,9</sup> It is likely that these factors also influence rearrest among insanity acquittees.<sup>5, 10, 11</sup>

This article attempts to summarize the peer-reviewed literature on insanity acquittees and rearrest. One focus is a meta-analysis published on insanity acquittees and rearrest that, unfortunately, contains a transcription error, which potentially has significant

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\* Surrogate measures for program "effectiveness" are ideally defined prior to measurement. The program goals and measures of effectiveness are ideally linked both causally and temporally. Finally, a description of program effectiveness might well be considered incomplete without clear definitions of whose perspective is used.

ramifications for the main supposition of the work.<sup>10</sup> Before the article, error, and corrected calculations are discussed, a literature review of insanity acquittees and rearrest will be presented. After the discussion of the article and its error, an attempt will be made to further the knowledge and to highlight areas of lack of knowledge concerning insanity acquittees and rearrest after release to the community.

### Insanity Acquittees and Rearrest

Despite the inherent shortcomings, an evaluation of judicial decisions and legislative mandates on the care and supervision of insanity acquittees necessitates the inclusion of rearrest as part of the program outcomes. As programs have been developed, implemented, and described, the peer-reviewed literature provides a national view of initiatives involving insanity acquittees.<sup>5, 11-26</sup> Table 1 summarizes studies published that are available through PubMed (MEDLINE 1975 to present; PSYCHINFO 1967 to present) on the rearrest of insanity acquittees.

The focus on this population and on outcome appeared at an accelerated rate in the literature beginning with a Canadian study in 1975.<sup>12</sup> Nine percent ( $n = 5$ ) of released insanity acquittees were rearrested over a mean follow-up period of 30.5 months. New York reported a 20 percent rearrest rate for released insanity acquittees in the late 1970s.<sup>11, 13</sup> Public sentiment concerning insanity acquittees was eloquently articulated a few years later: "They found that the criminally insane are generally considered dangerous, harmful, and violent, and as a class they are feared and rejected by society far more than are the mentally ill."<sup>27</sup> Although written almost a quarter of a century ago, there is ample evidence the belief patterns remain the same in 2000. The New York program for insanity acquittees was evaluated by following in the community 225 individuals released anytime between 1971 and the study's end in 1981. Twenty-nine percent were rearrested during the decade of study.<sup>15</sup>

Early researchers recognized that rearrest among insanity acquittees was likely to be influenced by factors that influence repetitive criminal behavior and rehospitalization of psychiatric patients. Past criminal behavior, age, and gender have consistently been shown to be highly influential factors in the determination of future criminal behavior.<sup>4, 6-8, 11, 28</sup> The strongest of early landmark studies controlled for these factors by the use of a matched cohort.<sup>14</sup> In

addition to comparison with matched convicted felons, later researchers added MIOs as a comparison group (usually those who received treatment in a prison psychiatric unit) for the rearrest rates of insanity acquittees.<sup>22</sup>

Further work in the mid to late 1980s on rearrest and insanity acquittees became available through journals and at professional meetings. Maryland was in the "wake of the insanity acquittal of a would-be presidential assassin,"<sup>16</sup> and Oregon studied the effects of the Oregon Psychiatric Security Review Board.<sup>3, 5</sup> Using an unmatched prospective design, Maryland reported that 56 percent of insanity acquittees followed over 15 years were rearrested.<sup>2, 16</sup> Oregon initially reported 11 crimes by 161 insanity acquittees who had been released between 1980 and 1983, with a revocation of community placement rate of 51 percent.<sup>5</sup> Forty-four NGRI acquittees receiving court-ordered treatment in an outpatient program in Chicago were followed, and five percent ( $n = 2$ ) were rearrested over the two-year study period.<sup>17</sup> Comparatively, France indicated a 10.4 percent rearrest rate over 22 years among those who were mentally ill and "nonresponsible for an act of crime."<sup>18</sup> Hawaii reported a 76 percent rearrest rate over eight years among released insanity acquittees.<sup>19</sup> Posthospitalization arrest of insanity acquittees over (up to) 10 years in New York was reported at 29 percent ( $n = 225$ ).<sup>20</sup> Insanity acquittees under California's Conditional Release Program for the Judicially Committed were rearrested at the rate of 32 percent (25 of 79 subjects) over 5 years.<sup>21</sup>

As the knowledge concerning insanity acquittees increased, the sophistication of the studies also increased. In terms of comparative studies among insanity acquittees, MIOs (those treated in a prison psychiatric unit), and non-mentally ill felons, the design employed in Maryland represented a leap forward. Three groups were followed. The NGRI group had the lowest rate of rearrest (53.3%), followed by the matched non-mentally ill group (64.5%) and the MIO group (73%).<sup>22</sup>

Three important articles became available in the early 1990s. Oklahoma reported on 30 insanity acquittees, with a rearrest rate of 33 percent over five years.<sup>23</sup> In New York, 22 percent of 331 individuals placed on conditional release from 1980 to 1987 were arrested over a maximum of almost eight years.<sup>24</sup> In California, the rearrest of 243 individuals who had been found to be either NGRI or a mentally

## Insanity Acquittees and Rearrest

**Table 1** Summary of Studies on Insanity Acquittees and Rearrest Rates from 1975 to 1999

Study	Subjects	Study Design/Outcome of Interest	Recidivism Rate	Comments
Quinsey <i>et al.</i> , 1975 <sup>12</sup>	56 released Canadian insanity acquittees	Unmatched prospective cohort Entry: 3/73 Follow-up ended: 7/1/74 Outcome: rearrest	9% (n = 5) Mean follow-up of 30.5 months (4 to 70 months)	Includes those who had been discharged or care transferred to Advisory Review Board
Pasewark <i>et al.</i> , 1979 <sup>13</sup>	107 released insanity acquittees from New York	Comparison group from prison Cross-sectional cohort Entry: 4/1/65 to 6/30/76 Time at analysis: 6/30/76 Outcome: rearrest	21/105 (20%)	
Pasewark <i>et al.</i> , 1982 <sup>14</sup>	33 released insanity acquittees from New York matched with 33 released convicted felons	Matched prospective cohort Entry: 9/1/71 to 12/31/73 Follow-up stopped: 6/20/76 Outcome: rearrest	Acquittees: 15% (Ex)-felons: 18% Over 2.5 years	Outcomes related to influence of change in disposition of New York State insanity acquittees to Department of Mental Hygiene
Pasewark <i>et al.</i> , 1982 <sup>15</sup>	133 released insanity acquittees from New York compared with 15 escaped NGRI	Comparative study of those found NGRI Entry: 1971 to 1976 Follow-up stopped: 8/31/81 Outcome: rearrest	29% over 10 years for released NGRI; 20% over 10 years for escaped NGRI	Use of step-wise discriminant analysis for three outcome groups Re-arrest seen as "[evaluation] of system and individual disposition"
Spodak <i>et al.</i> , 1984 <sup>16</sup>	Maryland insanity acquittees	Prospective (unmatched) Entry: 8/67 to 6/76 Follow-up stopped: mid-1982 Outcome: rearrest over 15 years	48/86 (56%)	Governor's Task Force sought to answer questions about the criminality of those who had been insanity acquittees <sup>2</sup>
Cavanaugh <i>et al.</i> , 1985 <sup>17</sup>	44 NGRI acquittees from Illinois	Unmatched prospective study Study period: 7/81 to 6/83 Follow-up for two-year study period Outcome: rearrest	2/44 (5%)	Receiving court-ordered treatment in outpatient program
Bloom <i>et al.</i> , 1986 <sup>5</sup>	Oregon Psychiatric Security Review Board (PSRB): conditional release and hospitalization; N = 161	Prospective (unmatched) Study entry: 1980 to 1983 Follow-up stopped: unclear	11 crimes	Bloom <i>et al.</i> <sup>3</sup> 51% revocation rate
Yesavage <i>et al.</i> , 1986 <sup>18</sup>	1096 MI and "nonresponsible for an act of crime" in France	22 year prospective follow-up Outcome: readmission to specialized hospital after committing another crime	114/1096 = 10.4% over a maximum of 22 years	Outcome in study might now be defined as "rehospitalization" Not all subjects followed for 22 years
Begenberger <i>et al.</i> , 1987 <sup>19</sup>	Hawaii insanity acquittees N = 107 insanity acquittees	Prospective (unmatched) Study entry: 1/1/70 to 6/30/76 Follow-up stopped 6/30/84	72 (67%) rearrested over (up to) 14 years	ALI definition of "insane"
Beiber <i>et al.</i> , 1988 <sup>20</sup>	225 insanity acquittees sent to New York State mental hospitals	Prospective follow-up Study entry: 1971 to 1976 Follow-up stopped: 8/31/81	38 (29%) post hospitalization arrest over (up to) 10 years	
Lamb <i>et al.</i> , 1988 <sup>21</sup>	79 individuals found NGRI Referred and accepted for court mandated community outpatient treatment California	Prospective (unmatched) Rearrest within five years	32% rearrested 72% of rearrested were violent crimes	

(Continues)

Table 1 Continued

Study	Subjects	Study Design/Outcome of Interest	Recidivism Rate	Comments
Silver <i>et al.</i> , 1989 <sup>22</sup>	127 insanity acquittees from Maryland matched with 127 convicted felons Comparison group of 135 mentally disordered prisoners transferred for hospital treatment	Matched prospective cohort Entry: 1/1/67 to 12/31/78 Follow-up: 5 to 17 years Outcome: rearrest at five years	53.3% of NGRI 65.4% of matched prison group 73% of MIO group	Calculation of point prevalence of rearrest required a <i>priori</i> determination of time interval
Nicholson <i>et al.</i> , 1991 <sup>23</sup>	30 insanity acquittees from Oklahoma (NGRI)	Prospective (unmatched) Entry: 1983 to 1984 Follow-up: up to five years (1989) Outcome: rearrest at five years	10/30 (33%) arrested over (up to) five years	"Jurisdiction previously unstudied" <sup>23</sup>
McGreevy <i>et al.</i> , 1991 <sup>24</sup>	331 insanity acquittees from New York on conditional release	Prospective (unmatched) 1980 to 1987 Exact follow-up period unclear	53% rearrested in less than a year 22% of those remaining arrested over ~8 years	
Wiederanders <i>et al.</i> , 1992 <sup>25</sup>	243 individuals either found NGRI or Mentally Disordered Sex Offender California	Prospective (unmatched) Entry: Release from state hospital (1986 to 1987) Follow-up: up to three years Outcome: rearrest	23/243 = 9% over (up to) three years	
Kravitz <i>et al.</i> , 1999 <sup>26</sup>	43 individuals found NGRI and mandated to receive outpatient psychiatric care	Retrospective chart review Entry: 1996 Data collection: end of 1996 Outcome: rearrest	8/43 (19%)	Provides follow-up on previous study in Chicago <sup>17</sup>

disordered sex offender was 9 percent over up to three years.<sup>25</sup> Finally, a follow-up on a previous study<sup>17</sup> indicated 19 percent rearrest rate for released insanity acquittees over one year.<sup>26</sup>

As noted in all reviewed work, rearrest was but one component of program evaluation that, presumably, cycled back to stakeholders as well as through the peer-reviewed literature and presentations at professional conferences. Nonetheless, as has been described,<sup>25</sup> rearrest is a sufficiently important outcome such that study termination dates were set *a priori*. In addition, the ability to tailor the analysis so that rearrest is seen as a continuous time-dependent outcome and not merely a dichotomous variable with a "yes" or "no" outcome has indeed revolutionized the ability to study this issue.<sup>8, 25, 29</sup>

### Forensic Conditional Release Programs

An article entitled "Forensic Conditional Release Programs and Outcomes in Three States,"<sup>10</sup> which appeared in 1997, also represented a move forward in the ability to compare and discuss the outcomes of insanity acquittees released to the community. A

meta-analysis<sup>29, 30†</sup> compared the outcomes (as a measure of program effectiveness) of programs in three states: New York, Oregon, and California. Unfortunately, the published article contains a transposition error in the crucial table on the rearrest of the insanity acquittees.

As the authors indicate, a vital function of the "... forensic mental health system is the safe release, after confinement and inpatient treatment [of insanity acquittees]. . . ." (p 249). The study sought, through program comparison, to evaluate the "... effectiveness of conditional release programs in promoting the safe reentry of patients to communities. . . ." (p 249). The authors apparently followed the four basic steps in any meta-analysis<sup>29, 30</sup>: (1) identification of studies with relevant data; (2) definition of eligibility

† The overall goal of a meta-analysis is to combine the results of previous studies to arrive at summary conclusions about a body of research. Initially and most often applied to combine the results of small randomized trials, meta-analysis seeks trends in a group of studies. While there are inherent difficulties in combining different bodies of work in a meaningful way, meta-analysis has gained acceptance in the peer-reviewed literature.

## Insanity Acquittees and Rearrest

**Table 2** Original Meta-analysis<sup>10</sup> and Recalculations After Corrections on Studies of Rearrest Among Insanity Acquittees

	New York		Oregon		California
	Article %	Recalculation %	Article %	Recalculation %	%
<b>Patient characteristics</b>					
Years of study	1980-87		1976-86		1986-93
Population size	331		366		888
Average conditional release follow-up time (years)	3.8		1.9		2.3
<b>Patient outcomes</b>					
Percent rearrested during follow-up time	22		15		8
Estimated annualized rearrest rate	7.8	5.7	5.8	7.9	3.4 <sup>a</sup>
Estimated annualized violent rearrest rate	—	—	1.4	1.9	1.6
Estimated annualized nonviolent rearrest rate	—	—	4.4	6.0	1.8
Estimated annualized felony rearrest rate	2.8	2.1	2.8	3.9	2.2
Estimated annualized misdemeanor rearrest rate	5.0	3.7	3.0	4.0	1.2

<sup>a</sup> All original calculations for California were correct.

for inclusion/exclusion in the study; (3) abstraction of data; and (4) statistical analysis of the abstracted data.

After an extensive literature search that encompassed "... 1,524,551 books, articles, and thesis citations in biomedical research, and titles from within more than 1,300 journals and publications . . ." (p 250), three studies met the criteria for inclusion in the reported meta-analysis. The most stringent criterion for inclusion was that the articles included "... the frequency with which clients have been monitored or provided mental health treatment in community settings. . . ." Work from New York, California, and Oregon met this criteria for inclusion.

In terms of a calculated outcome, an estimated annualized rearrest rate (EARR) was calculated for each program by taking the percentage of persons who had been rearrested and dividing by the mean conditional release follow-up time, that is:

$$\% \text{ rearrested} / \text{years followed} = \text{EARR}$$

Table 2 presents the data from which EARRs were calculated, the original published values, and the corrected values for significant variables, taking into account the transposition error that occurred. Using values from Table 1, the New York rate was calculated as: EARR = 22 percent/3.8 years = 5.7 percent per year. Similarly, the rate for Oregon was calculated as: EARR = 15 percent/1.9 years = 7.9 percent per year. Oregon would then show the highest EARR (7.9%), which was 36 percent higher than the original estimate. The transposition resulted in errors of calculation for other patient outcomes.

One might hypothesize that the transposed EARRs for New York and Oregon were in fact, the years of follow-up for New York and Oregon, or the percentage of individuals rearrested during the follow-up time. However, the former is fundamental to both the studies included and excluded from the meta-analysis and the analysis itself, making it unlikely that an error occurred here. The latter was the primary outcome of interest and would have been calculated very early, also making it unlikely that the error in transposition occurred with this variable.

Given the error, is the fundamental supposition of the article sound? The authors predefine program "effectiveness" as the safe return of the individual to the community. The authors state that Oregon has the most effective program, primarily as the length of hospitalization is the shortest. However, with the recalculations, it now appears that Oregon had both the highest revocation and highest rearrest rate. Despite the fact that Oregon reported the shortest average hospital time prior to release (data not shown), given the relatively high revocation and rearrest rates, it is misleading to continue to consider the Oregon program to be the most effective in this context. If the data and subsequent calculations are now correct, it might be that the shorter length of stay in Oregon was causally associated with the higher rearrest and revocation rates.

### Insanity Acquittees and Rearrest: One Step Further?

Numerous articles have commented on the difficulty of comparing the rearrest rates of insanity ac-

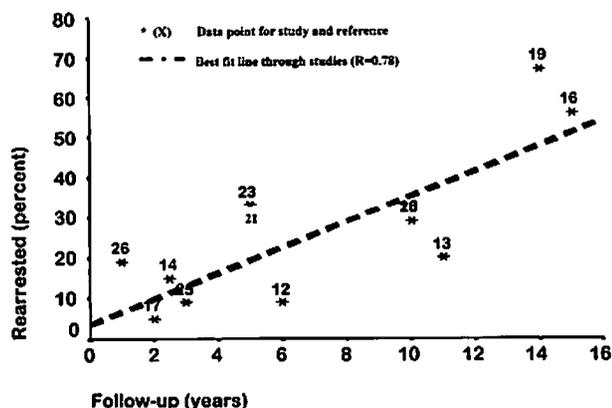


Figure 1. Summary of studies on insanity acquittees and rearrest showing a strong linear relationship.

quittes. It quickly became apparent that revocation/rehospitalization could be implemented, often avoiding a criminal arrest.<sup>3, 5, 14</sup> Local and jurisdictional nuances could have a dramatic effect on the rate of rearrest, as well as on the support for such programs and evaluation systems. In studies spanning decades, the rearrest rates of released insanity acquittees are as high as those persons released from jail and prison.<sup>7, 8</sup>

Attempts have been made to describe the release programs for insanity acquittees, and the amount of community supervision and control for those "revoked" and re-hospitalized. However, a thorough discussion concerning the differences in rearrest rates could not be located in the (English-language) peer-reviewed literature. The published studies are fraught with differences and imprecise time lines, making comparisons difficult.<sup>25</sup> The extent of community support and mental health treatment is often not included,<sup>10</sup> making it difficult to discuss any differences. While authors often note a component of the published literature in their particular article, attention has not previously focused on the apparently different rearrest rates.

Program comparison on a single outcome variable (rearrest) that uses imprecise follow-up periods is fraught with difficulties. However, Figure 1 graphically depicts a summary of available studies with rearrest rates shown as a function of (maximum possible) study duration. As shown, previous studies indicate that there is a very strong direct linear relationship between length of follow-up and rearrest rate. Figure 1 suggests that rearrest is more likely to occur within cohorts over time, that individual programs can compare their group outcome to others in

a manner that is directly time-dependent, and that, despite individual program variations, the rearrest of insanity acquittees is significantly explained by the time of community follow-up.

For statistical reasons, the data points from the European study<sup>18</sup> and the six-month rearrest rate from New York<sup>24</sup> were omitted from the study comparisons. Results from statistical tests that specifically identify outliers in data sets<sup>33</sup> indicate that omission was justified. With data inclusion, the maximum values for the Mahalanobis and Cook's Distances were 5.46 and 2.53, respectively. After exclusion of the data point, Mahalanobis and Cook's Distances were 2.75 and .60, respectively.<sup>31</sup> Seventy-eight percent of the variance of the remaining data points that form the linear (solid) line in Figure 1 is explained by the direct linear relationship between the length of follow-up and the percentage rearrested.

The model has potential practical implications for future program evaluations that incorporate rearrest as a primary outcome variable. It is clearly disconcerting that the trajectory of the line does not indicate a "ceiling effect" where the percentage rearrested levels off. While rearrest may level off over time within individual programs, any ceiling effect is potentially lost when each study itself serves as a single data point in a summary such as that in Figure 1.

While it is important to continue long-term comparative studies, the compilation of studies also suggests that it is in the first two years after release that insanity acquittees are the most vulnerable to rearrest. Although the New York study reported a 53 percent rearrest rate in the first year,<sup>24</sup> it represents a single point of reference for that time frame and may indicate a program anomaly rather than a true trend. The trajectory of the line from summarizing previous studies suggests that, in general, the rearrest rate of insanity acquittees is much lower than the rearrest rate of MIOs released from prison or jail.<sup>7, 8</sup> Some programs have recognized that released acquittees are particularly vulnerable during the early years of release.<sup>3</sup> However, relatively little is known about this initial period and the rearrest of insanity acquittees.

Rearrest likely will remain a prominent outcome variable for studies following the release of insanity acquittees. Rearrest remains relatively easy to track through state criminal databases, and often through the particular program itself. The ability to calculate and use rearrest as an outcome variable over time has vastly improved through the use of statistical software

within the past 10 years.<sup>25, 32</sup> The ability to account for varying time intervals between release and rearrest allows for increased precision.<sup>8, 25, 29, 32, 33</sup> With sufficient numbers, one can examine factors such as housing, drug and alcohol treatment in the community, financial support, and the number of case management appointments that might influence the rate of rearrest over the first two years after release.<sup>8, 32</sup>

Aside from the first two years, it would appear that insanity acquittees remain at the same risk for rearrest over time. If this were true at the individual program level as well, perhaps specific interventions early in release could decrease the rate over time.

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