Jail Mental Health Resourcing: A Conceptual and Empirical Study of Social Determinants

Ronald Helms¹, Ricky S. Gutierrez², and Debra Reeves-Gutierrez³

Abstract
U.S. county jails hold large populations of mentally ill inmates but have rarely been researched quantitatively to assess their collective capacity for providing mental health treatment. This research uses ordinal logit and a partial parallel slopes model and a large sample of U.S. counties to assess conceptualized links between local institutional and structural indicators and jail mental health resourcing. Strong church networks and high rates of adult education completion are associated with enhanced jail mental health resourcing. Urbanized areas and areas with deep economic ties to manufacturing appear supportive of a strong jail mental health system. Conversely, conservative political environments and areas with strong medical and mental health networks based in the community are correlated with reduced jail mental health resourcing. Evidence from this research adds to a growing understanding of the need for enhanced community mental health service and diagnostic capabilities in our nation’s jails, noting the characteristics and correlates of model program jurisdictions and jurisdictions where program enhancements are most likely in order.

Keywords
mental health, jails, incarceration, politics of crime, social control

Introduction
How well-prepared are local jails to manage the full range of mentally ill defendants who are arrested and detained in them? Despite widespread recognition that mental

¹Western Washington University, Bellingham, WA, USA
²California State University, Sacramento, CA, USA
³Rise Charter School, Sacramento, CA, USA

Corresponding Author:
Ronald Helms, Department of Sociology, Western Washington University, Bellingham, WA 98225-9081, USA.
Email: Ronald.Helms@wwu.edu
illness is a serious health concern throughout the United States (National Institute of Mental Health, 2015), and is also a condition experienced by many who are held in local jail facilities (Bureau of Justice Statistics, 2006; Cornelius, 2008), the empirical literature does not provide much insight regarding the readiness of local jails to address the mental illness concerns with which they are routinely confronted. This is unfortunate because the county jail is typically the largest facility in any local community for housing the mentally ill (Kerle, 2004), and thus represents one of the key mechanisms available for the public management of mental illness in communities throughout the country. The following research focuses on diverse correlates of jail mental health resourcing. We assess the utility of community-level indicators as predictors of location on a scale representing jail mental health response capacity. Documenting community correlates, we believe, is a first step in reconsidering the foundations of mental health public policy, a task to which we turn in our concluding discussion.

Review of the Literature

Mental Illness: A Brief Overview of the U.S. Experience

Much of the history of mental health care in the United States over the past 150 years has been focused at the level of individuals rather than at systems of support for the mentally ill (Helms, Gutierrez, & Reeves-Gutierrez, 2014). Throughout this history, policy questions regarding care for the mentally ill were the topic of vigorous debate and occasional sharp controversy (Torrey, Kennard, Eslinger, Lamb, & Pavle, 2010). In 1930, the U.S. Public Health Service established the Narcotics Division, bringing together research and treatment programs to combat drug addiction and to study the prevalence of mental/nervous disorders and the efficiency of interventions developed to treat them. The onset of World War II, however, brought disruption to the study of mental health provisioning (Grimes, 1974). Eventually, a national mental health program was proposed, culminating in passage of the National Mental Health Act of 1946. One consequence of this successful legislative effort is that the number of institutionalized mentally ill persons in the United States expanded dramatically and then stabilized over the following decade.

The expansion was short lived, and the reversal was dramatic as the federal court ruling issued in Wyatt v. Stickney (1972) set in motion a national process of deinstitutionalization. Today, the number of persons held in state mental health hospitals has been reduced by approximately 90%. From the standpoint of committed bed space, Lamb and Weinberger (2005, p. 529) assert that “by the year 2000, the number of state hospital beds had dropped from its high in 1955 of 339 per 100,000 to just 22 per 100,000.” What had been a state- or county-provider system shifted to a vast array of behavioral health networks that are organized primarily as a combination of private for-profit and non-profit agencies (Cox, Morschauser, Banks, & Stone, 2001). Since the decision in Wyatt v. Stickney (1972), the criminal justice system has emerged as a primary provider of mental health services (Perez, Leifman, & Estrada, 2003).
Given these historical reversals in resourcing for the mentally ill, it is well worth considering what constitutes a mental health problem for any individual. Most clinical assessments emphasize one of two indicators: (a) a recent documented history or symptoms of a mental health problem in the 12 months prior to the interview, or (b) a recent history of mental health problems that included a clinical diagnosis and/or treatment by a mental health professional consistent with criteria identified in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV; James & Glaze, 2006, p. 1). Recent research documents that 21% of arrestees processed in the local jails had recently experienced some form of mental health intervention, while fully 60% of jail detainees showed symptoms indicating some level of mental disorder (Cornelius, 2008; James & Glaze, 2006). By comparison, the National Institute of Mental Health (2015) reported that approximately 26.2% of the adult U.S. population in any year experiences symptoms consistent with a diagnosable mental health disorder. It is apparent from the disparity in these published statistics that a substantial percentage of mental health cases are discovered through criminal justice processing.

The U.S. Jail Census (U.S. Department of Justice, 1999) documents an uneven pattern of mental health resourcing. Meanwhile, mental health researchers have focused nearly exclusively on individual-level determinants and consequences, while leaving largely unexplored the community-level correlates of mental health treatment. Local jails have been almost completely overlooked, which is a surprising omission, because these community-level facilities have emerged as key features in managing mentally ill persons and delivering mental health services (Gibbs, 1982; Gibbs et al., 1983; Hardy, 1984; Holcomb & Ahr, 1988; Kalinich, Embert, & Senese, 1988; Steadman, Morrissey, & Robbins, 1985; Teplin, 1984).

This research seeks to document patterns of mental illness and mental health treatment resourcing in county jail systems throughout the United States. In addition to summarizing the scholarly literature on mental illness and treatment, we develop a conceptual and empirical analysis of diverse social determinants of variation in jail mental health resourcing. The point of departure for this research is an orienting hypothesis that functional community-level institutional and structural contexts are a likely determinant of community-level mental health provisioning and should also be predictive of local jail resourcing. If this working hypothesis is valid, we expect to find that movement along a scale of increasingly comprehensive jail mental health services is closely correlated with community-level structural and institutional variation. The following section offers a summary of literature on mental illness and treatment, documenting the relative absence of systematic research on community correlates of jail mental health resourcing.

**Mental Illness: Academic Research Findings**

The Bureau of Justice Statistics (Bureau of Justice Statistics, 2009) offers descriptive evidence that mental illness among those incarcerated in local jails is an important problem in many areas of the country. Local jail administrators face difficult problems linked to a high level of co-occurring disorders or dual diagnoses. Peters,
LeVasseur, and Chandler (2004) highlight that “individuals with co-occurring disorders frequently cycle through acute care facilities in the community and are increasingly placed in jails or prisons” (p. 563). At the time of booking, screening efforts may reveal the presence of mental disorders, but all too often local jail facilities do not possess adequate capacity to address mental illness even if it is diagnosed accurately during the intake process. Moreover, even when referred to county mental health services, these agencies may view incarcerated individuals as bad organizational risks to take on as clients because behaviors that led the mentally ill into the criminal justice system are often viewed as not being amenable to treatment (Kalinich et al., 1988). Put more directly, these offenders are viewed as dangerous to staff and require a security-centered approach with mental health treatment being a secondary concern.

Kalinich et al. (1988) note that fiscal support for community mental health services is a low priority for most state legislators, and state mandates for county mental health services delivery typically have not been backed with adequate resource supports. Regardless, many local jails have emerged as the most convenient location for mental health services locally, irrespective of their actual capacity for delivery of such services. An unfortunate sidebar to this situation is the political posture of many locally elected sheriffs who see themselves primarily as “crime fighters” rather than managers of mental health services for inmates (Helms, 2008; Kalinich et al., 1988). The near absence of political advocacy for this subpopulation within the U.S. system of jails is an unfortunate and pressing problem today. Given the dire fiscal circumstances confronting most local political systems, the situation is not likely to change without a strengthened foundation for claiming scarce public financial resources.

With the foregoing summary in mind, the following analysis examines local institutional and structural correlates of jail mental health services across U.S. communities. This effort is motivated by the optimistic belief that doing so will add to the current base of knowledge and strengthen advocacy in this area of community resource allocation decisions. As this study focuses on a diverse array of contextual correlates, the following theory section emphasizes multiple hypotheses.

**Theory and Hypotheses**

Local jail administration and mental health resourcing both tend to be highly politicized and, as a consequence, our conceptualization of social correlates draws implicitly from an overarching model that is sensitive to the politics of crime and social control. Strong local institutions should be linked with expanded social consciousness and would seem key to an expanding embrace of social justice and an ethic of care, which in turn we expect will manifest as correlates of robust jail mental health treatment resources. Empirically, variation in the functioning of diverse local institutions should be predictive of movement along an ordered scale representing increasingly comprehensive jail mental health treatment resources. Below we proceed with conceptualization of key community structures and institutional processes, noting their expected relation to the dependent variable. *We note parenthetically that many of these
conceptualized relationships have not been studied previously in relation to jails or the empirical evaluation of mental health resourcing.

**Mainstream Churches**

Research has rarely attempted to examine empirical connections between religious institutions and outcomes in the criminal justice system. However, the presence of a strong network of churches may be a plausible source of support for local public mental health provisioning because church doctrines across the mainstream religions emphasize an ethic of care for those who are homeless, hungry, and experiencing illness (Willits, Broidy, Gonzales, & Denman, 2011). This ethic of care, we believe, should be a factor underwriting support at the community level for jail mental health resourcing. *In short, we hypothesize that stronger local church networks should contribute to a supportive environment for mental health services inside local jail systems.*

**Medical and Mental Health Professionals**

This study draws attention to the substantial influence of medical and mental health professionals in managing mentally ill populations *in the community*. Given the privatized incentives shaping the delivery of health care, a subset of individuals with mental disorders undoubtedly remains largely invisible until they are “discovered” through their criminal offending activities (Kerle, 2004). The local jail becomes a primary mechanism for political management of these individuals in addition to the more general instrument for managing criminal threats to the community. We emphasize that a dense network of locally operating mental health professionals is likely to negatively influence pressures for elaboration of jail resourcing because privately practicing professionals provide key sources of screening, diagnosis, and treatment of mental illness, as well as ongoing management of cases *in the community*.

This link highlights the function of community mental health services as a source of informal diversion and reduced demand for mental health services in local incarceration facilities. At the same time, a dense professional network in the community might perplexingly be a factor that contributes to local law enforcement hand-wringing over their own role in addressing the mental health needs of their incarcerated population. Jail administrators, who characteristically see themselves primarily as law enforcers, may take a hands-off approach to addressing mental illness to the extent that such services are widely disseminated in their jurisdiction. To the extent that such attitudes prevail, a strong medical and mental health presence in the community might reinforce this tendency to de-emphasize mental health service delivery inside the local jail in favor of a de facto reliance on community providers to address these social needs in other privatized institutional settings. In any case, *our expectation is that across jurisdictions a stronger medical and mental health presence should be associated with downward movement on a scale of local jail mental health services.*
**Education**

As with the previous conceptualizations, the literature on jail mental health has typically not focused on community education as a correlate of mental health inside the jail environment. However, there is some basis for postulating that a well-educated community might be more inclined toward supporting an enhanced mental health regime operating within the jail. We emphasize in this context the effects of education as a civilizing institution (Elias, 1969) whose processes contribute to the dissemination and reinforcement of conforming attitudes and cooperative behaviors. This view emphasizes how schooling inculcates self-discipline and delayed gratification while also fostering social norms of deference to authority, respect for others, and adherence to discursive mechanisms for handling conflict. Moreover, educational success likely reinforces other pro-social institutions, including the labor market and political system, which rely on similar socialization.

Educational attainment has been shown to be positively associated with volunteering time and donating money to social services. In addition to volunteer activities, we note that education may also be a factor in better interpersonal relationships and social acquaintanceships because these are potentially benefitted when people behave civilly and solve problems peacefully rather than resorting to confrontation, threats, and intimidation. Widespread completion of a high school degree also is likely a factor helping individuals and communities become more tolerant of diversity and may leverage localized support for programs and services that contribute to a well-ordered community. A better resourced jail and assistance for those with mental health disorders and other deficits arguably are features of a well-ordered community. With these insights in mind, we expect that across communities a higher percentage of high school completion among adults should be associated with upward movement on the jail mental health services indicator.

**Conservative Political Environments**

Political participation generally may contribute to heightened interest in and support for social services. However, the politicization of crime and social control has been shaped by substantial conservative forces over the last several decades in the United States. Conservative, primarily Republican party, forces have typically de-emphasized the social circumstances that diminish the utility of law-abiding behavior and instead emphasize reprehensible individual choices as the primary explanation for crime (Helms & Jacobs, 2002). One conservative politician, John Major, a past prime minister of Great Britain, captured the essence of the expected direction of supports by noting publicly that “crime is a decision, not a disease” (quoted in Garland, 2001, p. 191). A substantial percentage of offenders exhibiting signs of mental illness come to the attention of authorities as a result of their criminal activities, not because of their mental health condition. We expect that where local citizens are most supportive of conservative law-and-order political candidates, jail mental health services will be less fully elaborated. In contrast, where conservative political support is modest, support for
jail mental health services will be more strongly expressed, as indicated by upward movement on the dependent variable scale.

**Other Explanations That Should Be Statistically Held Constant**

**Community Poverty**

Community poverty may preclude any effort to provide services in the jail setting because county jails rely heavily on the local tax base to provide basic services (Helms, 2008). Independent of any local desire to support such services, the high costs associated with programmatic delivery means that in jurisdictions with a large impoverished population, these services are likely to be less than fully funded (if at all). To assess this possibility, we introduce an indicator for the percentage of the population in poverty. *We expect to observe an inverse association, suggesting that communities with the largest impoverished populations are the least fiscally capable of supporting comprehensive jail mental health services.*

**Urbanized Populations**

We expect that larger urbanized populations will be more supportive of mental health programming than their counterparts in less urbanized communities. One reason stems from the fact that people who live in close proximity experience greater variation in their social interactions across all domains of social life. The presence of diverse, highly urbanized populations likely contributes to social tolerance generally and may result in enhanced support for those in their community experiencing mental health and other deficits. In addition, urban populations may experience heightened awareness of the presence of the mentally ill and could therefore be expected to give greater consideration to the prospect of assistance. Finally, urbanized communities often are characterized by stronger public sector service delivery systems, including jail services. Consequently, *we expect to observe a close association between the presence of urbanized populations and support for mental health services in county jails.*

**The Effects of Manufacturing and Manufacturing Decline on Community Services**

Manufacturing jobs have long been theorized as a source of middle-class expansion and sustained public revenues. When local communities experience declines in these types of high-wage, high-benefits jobs, they should face more serious problems in maintaining a public commitment to service delivery for the least well off, including the mentally ill. Nevertheless, these areas with deep long-term participation in manufacturing processes have been centers of work for labor-class communities over a substantial period of time, and this has likely contributed to the ability to sustain a tax base that would support elaboration of community services including support for
mental health resourcing inside the local jails. We note in this context the extensive research on employment and mental health functioning, and emphasize that uncertainty about employment or long periods of unemployment are linked in diverse ways with negative mental health outcomes in a variety of research reports (Butterworth, Rodgers, & Windsor, 2009; Marshall & Funch, 1979; Shandro et al., 2011). It should not be surprising, given this documented link in the literature between negative mental health outcomes and declining labor opportunities, that areas with long-term ties to manufacturing that have experienced recent sustained losses in this vital industrial sector would be areas most closely correlated with more extensive jail mental health resourcing. In this study, we introduce an indicator that measures change in manufacturing employment to assess this plausible link to jail mental health services. We expect areas that have long been characterized by their reliance on manufacturing, but that experienced the greatest sustained losses in manufacturing employment, will be most strongly correlated with jail mental health services.

Concentrated Disadvantage in the Community

Research on communities and crime has recently focused on combined structural conditions that place local residents at a life course disadvantage and contribute to crime and other markers of social disorder. A combined indicator that captures the overlapping and reinforcing effects of structural disadvantage should be a strong factor affecting local public sector mental health provisioning. In this study, we expect to observe an inverse association between a combined measure of concentrated disadvantage and support for jail mental health because under such adverse conditions, local politicians will be most attentive to community threats to social order and less attentive to mental health resourcing for a criminalized population. Among the most important community threats is that of crime itself, which has been shown to vary with indicators of social disadvantage. Formally, we expect to observe that where conditions of structured disadvantage are prevalent, local jails will be under-resourced in the area of mental health assistance for mentally ill criminal populations.

Drunk Driving and Drug Arrests

Local jails are noted for processing individuals who represent a wide array of localized problems, including drinking and driving and drug-related activities. The presence of these conditions might be expected to result in a strong emphasis on processing for these types of cases, with relatively little support garnered for mental health concerns. Alternatively, because alcohol and drug abuse are so often linked with and mask underlying issues related to mental illness, communities may respond to these populations by expanding mental health services in the jail environment. We are “agnostic” with regard to the hypothesized direction of this association because either condition might plausibly be present across local communities. Nevertheless, such obvious sources of jail admissions should be statistically controlled in any empirical study of
jail mental health. Therefore, these sources of jail admissions are introduced in the analyses that follow.

**Regional Dummies**

We include a series of regional dummies with the western region serving as the omitted category. There are several reasons for including dummy indicators (Helms, 2009). Regions may differ substantially in their respective cultures and political advocacy systems surrounding support of mental illness treatment and programming. Likewise, a dummy operationalization can assist in reducing spatial autocorrelation. Finally, the inclusion of regional dummies can be expected to capture systematic influences on the dependent variable that are otherwise unmeasured and untheorized. For all of these reasons, we include regional dummy indicators in the analyses below.

**Data and Methods**

**Sample and Dependent Variable**

The data used in this analysis are comprised of indicators developed for 2,313 counties and are drawn from the 1999 Jail Census, the U.S. Census Bureau. (2000; 1990), and other secondary sources. The dependent variable is a constructed scale measuring reported mental health services, which ranges from no jail services to full hospital care, within the local county jail facility. The observed mental health services outcomes for the jails in the sample were recoded across the following ordered categories (sample observations are included in parentheses):

- 0 = No mental health services, no mental health assistance available (1,128 obs.)
- 1 = The use of psychotropic drugs is present (264 obs.)
- 2 = Therapeutic environment/intervention counseling and psychotropic drugs (573 obs.)
- 3 = 24-hr medical staff on site with medical facility and other services inclusive (348 obs.)

The analysis that follows reports empirical relationships estimated using ordinal logit (for discussion of this method, see Stata, 2001, 2007). Ordinal logit uses observed values to estimate corresponding threshold values for an analytical predictive model. The model assumes a logistic distribution on the outcome variable, and proceeds by estimating an underlying score as a linear function of the independent variables and a set of cut points (Helms, 2009). The probability of observing an outcome, \( I \), “corresponds to the probability that the estimated linear function, plus random error, is within the range of the cut points estimated for the outcome” (Stata, 2001, p. 453). The method uses maximum likelihood estimation, producing ordinal logit estimates that are consistent, asymptotically normal, and asymptotically efficient.
Measurement of Indicators

This study draws from previous research, utilizing similar measures where possible, in the interest of advancing our understanding of theorized large-scale processes as they affect the range of capacities for treating mentally ill inmates in county jail facilities. Alcohol and drug use are often co-occurring conditions for detainees with mental health manifestations, and so we include two indicators—public drunkenness arrests and drug arrests. Both are operationalized as per capita rates. We also include an index of concentrated disadvantage that captures the combined influences of multiple social structure variables: the Gini index (Gini, 1912, 1997) computed on household incomes, percent single-parent households, and percent Black population. The concentrated disadvantage indicator was developed using un-rotated principal components (Stata, 2007). These indicators exhibited strong factor loadings (α = .725) and were utilized to form an integrated measure. Manufacturing change is measured as the percent change in the employed population working in manufacturing over a 10-year period (1980-1990). Poverty is dummied, coded 1 at or above the 70th percentile, for the sample of counties. Urbanized population is operationalized as a dummy indicator, coded 1 for urbanized population at or above the 70th percentile for the sample of counties. We operationalized the effects of church networks with a per capita rate for all mainline churches. The indicator is logged to address skew. We proxy for the presence of medical and mental health professionals with an indicator for hospitals, measured as a county per capita rate. Education is measured as the percentage of the county adult population 25 years of age and older that has obtained a high school degree or its equivalent. Political conservativeness is operationalized with an indicator for the county percent voting Republican in the 2000 presidential election. Finally, regional dummy indicators are included to capture systematic regional influences. The west region is omitted and serves as the reference category in the multivariate models that follow.

Analyses

Analysis of Descriptive Statistics

Table 1 provides descriptive statistics for all indicators used in the analysis. The typical jail is characterized by limited mental health services. Indeed, the modal category for the mental health index in this study is zero (representing 1,128 jails or 48.7% of the sample), and the low-reported mean (1.061) reflects this underlying reality.

With regard to independent variables, the poverty indicator shows that 40% of the sampled jurisdictions are characterized by a high concentration of poverty. Similarly, 26% of the county units are characterized as being highly urbanized. We note that the concentrated disadvantage indicator is a composite measure and ranges from −1.783 to 4.762. The mean value is slightly above zero (.0996), reflecting the fact that some counties experienced substantial structural disadvantage. With the foregoing notations in mind, we observe that all of the indicators exhibit reasonable variation. We proceed next with analysis of bivariate relationships.
Table 1. Descriptive Statistics for Variables in the Analysis of Mental Health in Local Jails.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>Index of jail mental health treatment</td>
<td>0</td>
<td>3</td>
<td>1.061</td>
<td>1.550</td>
</tr>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline churches</td>
<td>Per capita mainline churches</td>
<td>0</td>
<td>6.858</td>
<td>3.059</td>
<td>1.028</td>
</tr>
<tr>
<td>Hospitals (hos9599)</td>
<td>Per capita hospitals/clinics</td>
<td>0</td>
<td>129.6</td>
<td>3.198</td>
<td>7.859</td>
</tr>
<tr>
<td>Education (edu9599)</td>
<td>Percent of population 25+ with a HS diploma</td>
<td>33.84</td>
<td>95.83</td>
<td>75.467</td>
<td>8.775</td>
</tr>
<tr>
<td>Poverty (dpov70)</td>
<td>Dummy coded 1 for poverty at/or above 70th percentile</td>
<td>0</td>
<td>1</td>
<td>0.400</td>
<td>0.490</td>
</tr>
<tr>
<td>Urban (durban70)</td>
<td>Dummy coded 1 for urban population at/or above 70th percentile</td>
<td>0</td>
<td>1</td>
<td>0.262</td>
<td>0.441</td>
</tr>
<tr>
<td>Republican voting (voterep)</td>
<td>County percent republican votes in 2000 presidential election</td>
<td>0.124</td>
<td>0.925</td>
<td>0.561</td>
<td>0.116</td>
</tr>
<tr>
<td>Concentration disadvantage index</td>
<td>Index includes Gini index HH incomes, single-parent households, percent African American population</td>
<td>−1.78</td>
<td>4.76</td>
<td>0.011</td>
<td>0.987</td>
</tr>
<tr>
<td>Rate of drunk driving arrests (rtdrunk)</td>
<td>Drunk driving arrests per 10,000 population</td>
<td>0</td>
<td>216.27</td>
<td>23.850</td>
<td>33.701</td>
</tr>
<tr>
<td>Rate of drug arrests (rtdrugto)</td>
<td>Drug arrests per 10,000 population</td>
<td>0</td>
<td>394.90</td>
<td>42.585</td>
<td>33.545</td>
</tr>
<tr>
<td>Regions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwest (dmidwest)</td>
<td>Dummy coded 1 for midwest counties</td>
<td>0</td>
<td>1</td>
<td>0.305</td>
<td>0.461</td>
</tr>
<tr>
<td>South (dsouth)</td>
<td>Dummy coded 1 for southern counties</td>
<td>0</td>
<td>1</td>
<td>0.492</td>
<td>0.501</td>
</tr>
<tr>
<td>North East (dntheast)</td>
<td>Dummy coded 1 for northeastern counties</td>
<td>0</td>
<td>1</td>
<td>0.065</td>
<td>0.246</td>
</tr>
<tr>
<td>West (dwest)</td>
<td>Dummy coded 1 for western counties</td>
<td>0</td>
<td>1</td>
<td>0.137</td>
<td>0.344</td>
</tr>
</tbody>
</table>

Note. Number of cases = 2,313. HS = high school; HH = household.

Analysis of Zero-Order Correlations

Zero-order correlations are presented in Table 2. Mainline churches, high school education completion rates, and urban populations exhibit strong positive correlations with the mental health index, while the measure for Republican votes exhibits an inverse association with the dependent variable. Also, the indicator for manufacturing employment change exhibits an inverse association.
### Table 2. Zero-Order Correlations.

<table>
<thead>
<tr>
<th></th>
<th>mentalindex</th>
<th>rtdrunk</th>
<th>rtdrugto</th>
<th>condadv</th>
<th>manpctch</th>
<th>dpov70</th>
<th>durban70</th>
<th>lnmaincg</th>
<th>hos9599</th>
<th>edu9599</th>
<th>voterep</th>
<th>dmidwest</th>
<th>dsth</th>
<th>dntheast</th>
<th>dwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>mentalindex</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rtdrunk</td>
<td>-.0134</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rtdrugto</td>
<td>.0559</td>
<td>.2990</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>condadv</td>
<td>-.0021</td>
<td>.1842</td>
<td>.2767</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manpctch</td>
<td>-.1923</td>
<td>.0547</td>
<td>-.0500</td>
<td>.0232</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dpov70</td>
<td>-.1371</td>
<td>.2517</td>
<td>.1595</td>
<td>.6868</td>
<td>.1621</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>durban70</td>
<td>.2580</td>
<td>-.0137</td>
<td>.1859</td>
<td>.1054</td>
<td>-.1644</td>
<td>-.1236</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lnmaincg</td>
<td>.3045</td>
<td>-.0887</td>
<td>.0623</td>
<td>.0329</td>
<td>-.3921</td>
<td>-.2277</td>
<td>.5263</td>
<td>.10000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hos9599</td>
<td>.0895</td>
<td>-.0068</td>
<td>.1431</td>
<td>.1654</td>
<td>-.1418</td>
<td>.0165</td>
<td>.4095</td>
<td>.5366</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>edu9599</td>
<td>.1675</td>
<td>-.2957</td>
<td>-.1209</td>
<td>-.5523</td>
<td>-.0934</td>
<td>-.6107</td>
<td>.3226</td>
<td>.3253</td>
<td>.1084</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>voterep</td>
<td>-.1889</td>
<td>.0647</td>
<td>-.0968</td>
<td>-.3819</td>
<td>.1362</td>
<td>-.1016</td>
<td>-.2366</td>
<td>-.3873</td>
<td>-.2600</td>
<td>.0465</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dmidwest</td>
<td>-.1082</td>
<td>-.3130</td>
<td>-.2479</td>
<td>-.4119</td>
<td>.0777</td>
<td>-.3749</td>
<td>-.0448</td>
<td>.0638</td>
<td>-.0600</td>
<td>.3668</td>
<td>-.0086</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dsth</td>
<td>-.0372</td>
<td>.4168</td>
<td>.1782</td>
<td>.4742</td>
<td>-.0469</td>
<td>.4430</td>
<td>-.0893</td>
<td>-.1131</td>
<td>-.0633</td>
<td>-.5724</td>
<td>.0584</td>
<td>-.6529</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dntheast</td>
<td>.2278</td>
<td>-.1037</td>
<td>-.0009</td>
<td>-.1010</td>
<td>-.3306</td>
<td>-.1614</td>
<td>.0787</td>
<td>.3057</td>
<td>.0599</td>
<td>.1547</td>
<td>-.1913</td>
<td>-.1745</td>
<td>-.2594</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>dwest</td>
<td>.0365</td>
<td>-.1124</td>
<td>.0734</td>
<td>-.0654</td>
<td>.2007</td>
<td>-.0264</td>
<td>.1333</td>
<td>-.1397</td>
<td>.1293</td>
<td>.2299</td>
<td>.0635</td>
<td>-.2646</td>
<td>-.3933</td>
<td>-.1051</td>
<td>1.0000</td>
</tr>
</tbody>
</table>
with the dependent variable. Table correlations show that independent indicators exhibit only modest covariation, with several approaching .50 but none approaching .70, which in conventional research stands as a rough guideline for detecting the presence of collinearity. Indeed, correlations on the whole are quite modest, suggesting that collinearity is unlikely to seriously bias estimates in the predictive models that follow.

**Analysis of Ordinal Logit Results**

Table 3 provides evidence about overall community correlates of jail mental health across the 2,313 counties that make up the sample data used in this study. The analysis begins with a base model (Model 1) that includes arrest information and regional dummy indicators. In Model 2, we add structural indicators along with the previously included indicators. Finally, in Model 3 we introduce institutional indicators to see whether, after statistically holding constant arrests and commonly theorized structural indicators, these indicators are useful in predicting movement on the jail mental health scale.

**Model 1.** Model 1 (Table 3) shows initial estimates for the fitted ordered logit model. The likelihood ratio (LR) chi-square is significant, $\chi^2(5, 2313) = 134.02, p < .001$, implying a significant association between the mental health index and this combination of predictors.

The indicators used in the first model exhibit some surprises because all of the significant variance appears to have been captured in the regional dummies; neither of the arrest indicators is statistically significant in this model. The regional dummies show relative mean differences measured against the omitted category, which in this analysis is the western region of the United States. Relative to western jurisdictions, jails located in the northeastern United States on average reported more comprehensive jail mental health resourcing than their counterparts.

**Model 2.** The second model (Table 3) introduces structural indicators used in much of the criminal justice literature, including operational measures of poverty, urbanization, labor market experiences, and a composite indicator of concentrated disadvantage. All of the indicators introduced in Model 1 are retained in Model 2. For Model 2, the LR chi-square is significant, $\chi^2(9, 2313) = 315.05, p < .001$. The two models can be assessed using another LR test comparing Model 1 (base) with Model 2 (basic model + block of structural indicators). Doing so resulted in a large and statistically significant chi-square, $\chi^2(4, 2313) = 181.03, p < .001$, supporting the assertion that inclusion of structural predictors resulted in a significant improvement in the model fit.

Turning to individual coefficients, the arrest indicators continue to exhibit non-significant associations, respectively, with the dependent variable. Also, regional indicators continue to exhibit consistent coefficient signs and statistical significance values on the respective coefficients as were observed in the first model, with jails located in
the northeastern United States exhibiting the largest positive mean differences in jail mental health services relative to the omitted (West) category.

Model 2 introduces several structural indicators to assess the effects of social context on jail mental health resourcing. The poverty dummy is operationalized to capture threshold effects at the highest concentrations of poverty across the communities that make up the sample.\textsuperscript{13} The tabled results show that the hypothesized negative association receives empirical confirmation because the poverty coefficient exhibits a substantial negative and statistically significant value ($-0.607$, $p < .001$).

The urban dummy indicator is highly positively associated with the mental health index ($0.928$, $p < .001$), implying that when compared with non-urban environments, urbanized areas are most likely to develop the most elaborated jail mental health systems. The index of concentrated disadvantage is a construct that captures geographically overlapping features of race, income inequality, and family disorganization. In

\begin{table}[h]
\centering
\caption{Ordinal Logit Estimates of Determinants of County Jail Mental Health Services, 1999.} 
\begin{tabular}{lrrr}
\hline
Independent variables & Model 1 & Model 2 & Model 3 \\
\hline
General population arrest controls & & & \\
Drug sale/manufacturing arrest rate & 0.0026 & $-0.0004$ & 0.0003 \\
Drunk/disorderly arrest rate & $-0.0005$ & 0.0009 & 0.0016 \\
Social structure controls & & & \\
Dummy Poverty (above 70th %) & $-0.607^{***}$ & $-0.364^{**}$ & \\
Dummy Urban (above 70th %) & 0.928^{***} & 0.582^{**} & \\
Concentrated disadvantage & 0.115^{*} & $-0.021$ & \\
% Change manufacturing employment & $-0.043^{***}$ & $-0.024^{*}$ & \\
Institutional controls & & & \\
Natural log mainline churches & $-0.607^{***}$ & $-0.364^{**}$ & \\
Per capita hospitals/clinics & 0.928^{***} & 0.582^{**} & \\
% high school education completion, 25+ years & 0.115^{*} & $-0.021$ & \\
Republican presidential votes 2000 & $-0.043^{***}$ & $-0.024^{*}$ & \\
State dummy effects\textsuperscript{a} & & & \\
Midwest & $-0.450^{***}$ & $-0.529^{***}$ & $-0.936^{***}$ \\
Northeast & 1.370^{***} & 1.013^{***} & 0.282 \\
South & $-0.247^{*}$ & $-0.145$ & $-0.278^{*}$ \\
Log likelihood & $-2,774.6991$ & $-2,684.1843$ & $-2,633.2047$ \\
Model chi-square & 134.02^{***} & 315.05^{***} & 417.01^{***} \\
Number of cases & 2,313 & 2,313 & 2,313 \\
Likelihood Ratio test values and significance & & & \\
Model 1 vs. Model 2 & $181.03^{***}$ & & \\
Model 2 vs. Model 3 & & 101.96^{***} & \\
\hline
\end{tabular}
\footnotesize{Note. Dependent variable: Jail Mental Health Index (coded 0-3). \\
\textsuperscript{a}West region is the omitted category. \\
* $p = .05$. ** $p = .01$. *** $p = .001$.}
\end{table}
Model 2, the indicator exhibits a weak, positive association with the jail mental health scale. The initial hypothesis suggested that this indicator would show a negative relationship to the dependent variable. As with other indicators in the first model, we must await further evidence before drawing any firm conclusions about the directionality of these model effects.

Finally, an indicator of change in the percentage of the working population currently employed in the manufacturing sector is included, and it exhibits an inverse association with the dependent variable. Several comments are in order with regard to this finding. The indicator itself shows change over a 10-year period in manufacturing employment across sampled jurisdictions. Most areas of the country experienced net losses in manufacturing employment during this period, but some select areas experienced expanded manufacturing employment. One thing is certain: Those areas traditionally most heavily dependent on these sources of employment were generally speaking the hardest hit by the losses. Even with the large negative values (lost employment), these areas remain on average more heavily manufacturing-based. With this in mind, the negative coefficient on this indicator ($-.043, p < .001$) suggests that areas experiencing the greatest losses in manufacturing—counties that disproportionately remained strongly dependent on manufacturing jobs—were closely correlated with enhanced jail mental health systems.

Manufacturing employment losses would obviously be a factor undermining local tax revenues. These types of labor jobs have traditionally been filled by less well educated and minority members of the community and have been a key source of mobility for groups that were traditionally economically marginalized. These have also been areas most likely to support liberal programming in general and to be most supportive of the liberal Democratic Party. We note as well that many suburban areas that saw recent gains in manufacturing employment did so amidst an overall national trend that witnessed sustained job losses in the manufacturing sector. These recent labor market beneficiaries have not been historically as deeply dependent on manufacturing jobs, and so current expansion may not be a strong political factor in their support for local social services generally and jail mental health specifically. On the other hand, areas that experienced the manufacturing job losses likely exhibited a long history of supporting public services for the working classes and the poor generally, and, perhaps, services for the mentally ill as well. These places have also experienced some of the most difficult economic restructuring effects over a sustained period of time, a factor likely to have contributed to added widespread experiences with stress and depression among the population. With all of this in mind, we are not surprised to find that the places most dependent on manufacturing-based employment, specifically those places experiencing the greatest losses in this sector, continue to be areas where local jails provide more fully elaborated mental health systems.

**Model 3.** Model 3 introduces institutional indicators to assess their effects on jail mental health systems. This saturated model shows a substantial improvement over the previous model as can be observed by comparing the change in the respective model log likelihoods (Model 2 = −684.1843 vs. Model 3 = −633.2047). The LR chi-square
for this model is significant $\chi^2(13, 2313) = 417.01, p < .001$ as well. As to whether this model offers an improvement over the results of Model 2, we can assess this similarly. Comparing Model 3 (basic model + block of structural indicators + institutional indicators) against Model 2 (basic model + block of structural indicators) resulted in a significant LR test statistic, $\chi^2(4, 2313) = 101.96, p < .001$, which implies that including this block of institutional indicators resulted in a significantly improved model fit.

Model 3 retains all indicators introduced in previous models. Each of these exhibits consistent estimated associations with the dependent variable across the respective models. The one exception to this statement is that in Model 3, the concentrated disadvantage indicator no longer reaches statistical significance at the conventional level ($p < .05$). After holding constant arrests, regional indicators, and structural controls, the introduction of institutional indicators in Model 3 shows a substantially improved overall fit with movement on the dependent variable (see statistical information above). The presence of dense networks of mainstream churches is positively and significantly associated with the scope of jail mental health services ($-.438, p < .001$). This result is expected because virtually all conventional churches include strong doctrinal and moral imperatives to assist the poor and others who are socially marginalized. This lends readily to extending assistance to those experiencing mental illness in the community. The strong social justice mission of so many churches likely favors commitment to care for the mentally ill, both in the community setting and among the incarcerated population. The results of this analysis suggest that the presence of strong church networks is a positive contributing source of enhanced jail mental health systems across this large sample of local county jurisdictions.

An indicator of hospitals per capita shows a strong negative and significant correlation with jail mental health systems ($-.396, p < .001$). This empirical finding is also consistent with the hypothesis set out in the Theory and Hypotheses section above because the presence of community hospitals is generally a strong indicator of a dense network of medical and mental health professions and professionals operating in proximity to the hospitals. Their professional presence and capacity for offering treatment services in the community is likely to be associated with a reduced perceived need for mental health operations within the jail environment. Many jails operating in close proximity to community hospitals simply transport the most severely mentally ill to the hospitals and clinics for needed services, or alternatively bring medical and mental health staff into the jail to address inmate mental health concerns. The key is that a dense network of professionals in the community likely reduces the level of mental illness manifesting as criminal activity in need of social control response. In sum, the expectation theorized above is that we would observe a negative coefficient on a medical and mental health professions indicator, and the tabled results show an estimate consistent with that expectation.

Education has long been theorized as a factor affecting support for community services, and so, following this general thesis, this research hypothesized a positive association between an indicator of educational achievement across communities and upward movement on the mental health indicator. The tabled results show a positive and statistically significant association ($.014, p < .05$) between an indicator of adult high school completion rates and upward movement on the mental health index.
Finally, the conservative political environment indicator used in this analysis focuses on conservative political support with an indicator of the percent Republican votes in the 2000 election. Punishment had been deeply politicized throughout the United States for at least the 30 years prior to the time of this study. Conservative Republican candidates consistently led calls for enhanced punishments and a general growth in all categories of expenditure for social control. But these same conservatives emphasized individual responsibility for poor choices that bring people into contact with social control agents. One consequence is that policies advocated by conservative politicians have tended to focus on punitive responses while placing less emphasis on contributing influences of medical and mental health on criminal behavior. The hypothesis developed above asserted an expectation that conservative political environments would be less supportive of jail mental health resourcing. The results reported in Model 3 are consistent with these expectations as the coefficient is negative and statistically significant ($-2.142, p < .001$). In sum, the findings show that the most conservative political environments were least supportive of jail mental health resourcing, whereas less conservative counties exhibited stronger support for more fully developed mental health systems in the jail environment.

**Testing Assumptions About Parallel Regression Slopes**

One assumption of ordered logit is that slope estimates are consistent across respective levels of the dependent variable. In practice, this assumption is often violated but cannot be easily discerned without engaging in considerable post-estimation analysis. Using Stata, it is possible to test the parallel regressions assumption with the Brant test of proportional odds. After estimation of the fully saturated mental health model (Table 3, Model 3), this test produced a significant LR chi-square value, $\chi^2(131.05^{***})$, indicating that the parallel regressions assumption is not appropriate, at least for some indicators used to estimate this model.

To overcome this problem, we proceeded with a revised estimation procedure that allows modeling to proceed based on the fact that some, but not all, coefficients are parallel. Williams (2006) developed a partial proportional odds model that constrains those coefficients that are associated with insignificant Brandt test values to retain parallel coefficients across respective iterations of the model while estimating unique coefficient values for the remaining indicators at each level of the dependent variable. This model is a member of the family of generalized ordinal logit models. Williams (2006) developed this model following the example developed by Williams (2006). In column 1 of Table 4, the previous results of the final ordered logit model (Table 3, Model 3),
Model 3) are reproduced to ease comparisons. Columns 2 through 4 show estimated coefficients for the jail mental health model after substituting the partial proportional odds model in place of the ordinal logit model. The resulting coefficients reflect each indicator’s respective influence on the likelihood of movement into the next highest category of the dependent variable (e.g., Category 0 vs. 1, 2, and 3; Category 0 and 1 vs. 2 and 3; and Category 0, 1, and 2 vs. 3). Most of the model indicators meet the proportional odds assumption, and so these coefficients are reproduced only in column 2. Three indicators were shown to violate the proportional odds assumption, and so unique coefficients were estimated at each respective level of the dependent variable. These unique effects are displayed in columns 3 and 4.

Table 4. Generalized Ordinal Logit Estimatesa of Determinants of County Jail Mental Health Services, 1999.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Ologit Model</th>
<th>Generalized Ologit Prob &gt; 0</th>
<th>Generalized Ologit Prob &gt; 1</th>
<th>Generalized Ologit Prob &gt; 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>General pop/arrest controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug sale/manufacturing arrest rate</td>
<td>.0003 (1.00)</td>
<td>.0001 (1.00)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Drunk/disorderly arrest rate</td>
<td>.0016 (1.00)</td>
<td>.0020 (1.00)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Social structure controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy poverty (above 70th %)</td>
<td>-.3636** (.695)</td>
<td>-.3473** (.707)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Dummy urban (above 70th %)</td>
<td>.5825*** (1.79)</td>
<td>.3020* (1.35)</td>
<td>.4039** (1.50)</td>
<td>1.017*** (2.76)</td>
</tr>
<tr>
<td>Concentrated disadvantage</td>
<td>-.02133 (.978)</td>
<td>-.0208 (.979)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>% change manufacturing employment</td>
<td>-.0234* (.976)</td>
<td>-.0269* (.973)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Institutional controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Log mainline churches</td>
<td>.4377*** (1.55)</td>
<td>.3475*** (1.42)</td>
<td>.4213*** (1.52)</td>
<td>.8129*** (2.25)</td>
</tr>
<tr>
<td>Per capitat hospitals/clinics</td>
<td>-.3959*** (.673)</td>
<td>-.4328*** (.649)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>% high school education completion, 25+ years</td>
<td>.0138* (1.01)</td>
<td>.0144* (1.01)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Republican presidential votes 2000</td>
<td>-2.142*** (.117)</td>
<td>-2.066*** (.127)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>State dummy effectsb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwest</td>
<td>-.9363*** (.392)</td>
<td>-.9274*** (.396)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Northeast</td>
<td>.2825 (1.33)</td>
<td>.4596 (1.58)</td>
<td>.6272* (1.87)</td>
<td>-.1563 (.855)</td>
</tr>
<tr>
<td>South</td>
<td>-.2780 (.757)</td>
<td>-.2668 (.766)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-2.633.2047</td>
<td>-2.566.1915</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Wald chi-square</td>
<td>417.01***</td>
<td>488.54***</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Number of cases</td>
<td>2.313</td>
<td>2.313</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. Odds ratios are reported in parentheses. Dependent variable: Jail Mental Health Index (coded 0-3).
*aColumn 2 presents generalized ordinal logit estimates for all indicators; columns 3 and 4 present generalized ordinal logit estimates for coefficients at respective levels of the dependent variable for those indicators shown to have violated the parallel lines assumption.

bWest region is the omitted category.
*p = .05. **p = .01. ***p = .001.
Generally speaking, the partial proportional odds model reproduces the results of the ordered logit model for those indicators shown to meet the parallel slopes assumption, taking into account sampling variation. The resulting overall model shows a modest statistically significant improvement in the log likelihood value (−2,633.2047 vs. −2,566.1915). As can be seen in the tabled results, those indicators estimated uniquely across respective levels of the dependent variable show substantial and varying effects. The urban population indicator shows a marked strengthening of effects across categories of jail mental health resourcing. Not only does the coefficient become larger for each category of the outcome, suggesting a strengthening of substantive influence, the statistical significance is increased as well. Indeed, when estimating odds of movement into the highest category of resourcing, the indicator’s statistical significance exceeds the .001 level. Similar results also can be observed for the mainstream churches indicator. The influence of this indicator is consistent, strong, and highly significant across all levels of the dependent variable. Having noted these results, the size of the coefficient is nearly doubled between the second and third column of estimated effects. The Northeast region is associated with strengthened influences across the middle categories of the dependent variable, but its effects become non-significant as one focuses on the likelihood of being in the highest category of the dependent variable.

Another way to interpret these results is with reference to each measure’s proportional odds. Table 4 includes odds ratios (in parentheses) corresponding with estimated coefficients.

Williams (2006) elaborates on a model approach emphasizing the assumptions underlying the estimation. Positive coefficients indicate that higher values on the explanatory variable make it more likely that the county will be in a higher category of Y than the current one, whereas negative coefficients indicate that higher values on the explanatory variable increase the likelihood of being in the current or a lower category. For odds ratios, the same logic applies. Odds ratios above a value of 1 imply increased odds of being in a higher category of Y than the current one. Odds ratios less than 1 imply a stronger likelihood of being in the current or lower categories of the dependent variable.

The tabled results show evidence in support of a variety of competing hypotheses. The tabled odds ratios for indicators allowed to vary across levels of the dependent variable highlight the utility of using the partial proportional odds model. As noted previously, three indicators were estimated at each respective level of the dependent variable and provide us with an opportunity to assess effects in terms of odds ratios.

With regard to the urbanization indicator, we can see that at the lowest level of the dependent variable (no mental health services, no mental health assistance available), urbanization shows a favorable influence on the odds of upward movement along the scale. Holding constant other indicators, the odds of upward movement from the 0 category is 1.35 for highly urbanized areas in comparison with less populated areas. The odds of upward movement expands across each successive iteration of the model so that the odds of movement from the second category (The use of psychotropic drugs is present) into even greater elaboration of mental health systems jumps to 1.49. But
the most substantial effects of urbanization are experienced at the highest levels. Estimates showing the likelihood of being in the current category (therapeutic environment/intervention counseling and psychotropic drugs) versus the highest category (24-hr medical staff on site with medical facility and other services inclusive) reflect a substantial strengthening of effects because the odds ratio jumps to 2.76 for urban populations relative to non-urban areas, holding constant the effects of other variables in the model.

Similarly, the indicator for local church networks shows dramatic strengthening at respective levels of the dependent variable. While this indicator remains uniformly strong from a statistical standpoint, it is evident from the tabled results that strong church networks are associated with a strengthening of influence across successive levels of the outcome under study. Strong church networks are associated with increasingly enhanced odds of movement into successive categories of jail mental health resourcing (Prob >0 = 1.42, Prob >1 = 1.52, Prob >2 = 2.25). Finally, among regional controls the northeast region exhibits its strongest influence in the middle range of jail mental health services; in contrast, this regional effect is negligible at the extremes.

We note again, in passing, that all other indicators in the model conformed to the proportional odds assumption. Having noted that, we can see by reviewing column 2 of Table 4 that poverty and urbanization were two structural indicators closely identified with contrasting effects on the jail mental health outcome. Among institutional controls, in addition to positive influences associated with strong church networks, we can see that strong hospital systems with their complement of medical and mental health professions are associated with a significantly reduced odds, implying that jail mental health resourcing will be less likely to be elaborated under conditions where there is a strong presence of privatized professional services operating at the community level. Among the strongest determinants, unsurprisingly in light of the politicization of crime, jurisdictions with strong political leanings toward conservative Republican party candidates exhibited substantially reduced odds, suggesting a negative association with jail mental health elaboration (odds ratio = 0.127).

These results imply that there are strong institutional factors at work at the community level, and they apparently vary systematically with jail mental health resourcing. Although the findings are preliminary, they offer a substantially improved basis for formulating policy alternatives and should benefit those seeking to address the problems associated with the provision of mental health services at the community level under increasingly austere fiscal circumstances currently being faced by communities throughout the country.

Limitations of This Analysis

We note that the results of this analysis are among the first of their kind to be reported in the peer review literature. One risk is that our conceptualization of the diverse structural and institutional correlates of jail mental health resourcing is not fully and equally informed by an extensive body of established research, and so we must remain cautious in our interpretation of the study findings.
Also, the database is somewhat dated, and so the social conditions most closely correlated with mental health elaboration as well as political contexts and supports for such elaboration may have shifted markedly in the ensuing years. We suspect that today’s fiscal environment is even more inhospitable to such resourcing, but that remains an open question for future research and other modes of inquiry.

We strongly encourage further study of these resourcing issues as they are likely to emerge even more strongly in the jail and prison systems due to the influx of returning military veterans. As those who bear the invisible wounds of war seek adjustment, many will likely have their mental health troubles discovered at the point of intake processing at a local jail facility. And so what emerges from this analysis, with its noted limitations, is a standpoint from which to begin to think and assess the current status of mental health resourcing in the United States.

Discussion and Conclusion

This analysis highlights a variety of insights, relevant in the context of the ongoing fiscal crisis confronting a great many local communities, regarding ways forward in managing mental health services provisioning for locally jailed populations. The foregoing research would seem to suggest some potential to leverage networks already in place and currently functioning at a modest level. An asset mobilization and asset build-out strategy would seem most appropriate given the analytical results reported here.

Regarding the importance of church networks, it was well documented that stronger church-based institutional networks are associated with more elaborate systems of mental health delivery inside county jails throughout the country. Strengthening the connections between the faith community and the criminal justice system has been an “off and on” feature of federal public safety policy; it seems that, going forward, it should be an “on” feature. Strengthening the foundations of churches and encouraging stronger interfaith networks across the board redound to the benefit of local communities in countless ways; one important way is through providing stronger pathways of assistance for mentally ill residents who find themselves ensnared by the local criminal justice system. Public policies that constrain faith community outreach and engagement for fear of violating a separation of church and state principal constitute a clear threat to one of the most effective community assets available for mobilization.

Another area of public policy that has a clear connection to the problem of mental health services in local jails is that of jail regionalization (for insightful discussion, see Kerle, 2004). Jail regionalization is an ongoing long-term trend involving the combining of resources among small jurisdictions to operate a central jail facility that serves a number of contiguous counties. While eliminating redundancies in staffing and services, when several counties work collectively and pool their resources, it becomes possible to address the needs of the mentally ill. It is clear that the preponderance of “no mental assistance” cases are made up of jails located in small and more rural jurisdictions; a targeted program of incentives for jail regionalization from cities or both state and federal governments would appear to be a fruitful approach going forward.
Fiscal distress in local government may hasten discussions of jail regionalization as a cost-cutting measure.

Efforts to increase public understanding through informed public discourse with regard to the patterns, problems, and needs (Welsh & Harris, 2008) of mentally disordered persons should also be encouraged as a timely theme of civic journalism. The professional training of journalists has increasingly featured a compliment to the traditional “watchdog” role calling upon journalists to engage in the building of social capital by educating citizens on the many ways they can contribute to the quality of life in their communities. Journalists trained in this new, growing tradition can help citizens understand that crime has been highly politicized since the 1960s in the United States. This politicization has contributed to a dramatic surge in punitive legislation, the criminalization of private conduct, and vast expenditures for all phases of the criminal justice process—ultimately resulting in the building of many correctional facilities throughout the country (Helms, 2009; Helms & Costanza, 2010; Helms & Jacobs, 2002; Jacobs & Helms, 1996, 1999, 2001). Public discourse has too often focused on the demonization of criminal offenders and punitive retaliation for misconduct without seeking to understand, much less respond to, the complex backdrop, seeing only the behaviors of mentally disordered individuals that bring them into direct contact with law enforcement and local jails. This area of community education and volunteer recruitment is ripe for consideration when thinking about ways for jail managers and civic journalism proponents to make common cause regarding enhancements to delivery of services in the community. Community resources in the housing, employment, education, and community public health sectors could all be brought into the community education effort.

The current public policy environment is characterized by extreme fiscal hardship in many local government jurisdictions, a condition that is generally unfavorable to the expansion or even ongoing maintenance of jail mental health services. Unfortunately, recent government fiscal hardships have resulted in dramatic reductions in funding for statewide mental health programming, contributing to a further concentration of mentally disordered individuals in local jails. Given this refocusing by governments throughout the United States, it would seem that documenting the presence and scale of mental health cases in jails and the local community is a first step in taking stock of the dimensions of the problems currently being confronted by mental health professionals, both in the jail management profession and in the local community. To the extent that community-based assets can be mobilized and built out to provide “alternatives to incarceration” for mentally ill arrestees, law enforcement and prosecutors can make use of their discretion to avoid using jails as a repository for mentally ill offenders.

The courts are a plausible location where innovation might yield favorable results. Recently, there have been substantial developments in the evolution of mental health courts that seek to provide a comprehensive response to the mentally impaired offenders who come before the courts. This is a development that should be extended and further developed to address at the front end of the criminal justice process the needs of these offenders.
Although this research has emphasized the importance of existing community institutional sources of support for jail mental health and related community mental health treatment, a necessary next step may include documenting successful cases of the enlistment of additional sources of institutional, non-profit, and volunteer support in exemplary local communities. In this regard, Ken Kerle (2004) strongly recommends that mental health professionals should be required as a component of their professional commitment to the community to provide some minimum number of hours of pro bono assistance to the local jails, perhaps on a monthly basis. This is indeed a bold public policy recommendation and one not likely to be adopted any time soon. Nonetheless, this idea does highlight a potential policy direction for consideration given the deep fiscal troubles confronting local governments throughout the country today and into the foreseeable future. The communities where such pro bono work is being done should be highlighted as best practice, and the savings gained by local communities should be documented.

Although this study provides some insight into the environmental factors most favorable to dealing with mentally ill persons confined in local jails, it is clear that more research needs to be conducted along these lines. The menacing frequency with which our posttraumatic stress disorder (PTSD)–affected veterans of the Iraq and Afghanistan Wars are coming into contact with the criminal justice system is reason enough for a national awakening to this problem being played out throughout this country. There are more than 100 new “veterans courts” now modeled after the therapeutic jurisprudence-inspired drug courts of longstanding success. The few Mental Illness Courts in operation are likely a great source of understanding for communities looking for further insight into their own problems of mentally ill jail occupants. We hope this study adds to building a base of research on a problem of marked importance to our contemporary justice system.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. The Diagnostic and Statistical Manual of Mental Disorders (4th ed.; American Psychiatric Association, 1994) definition of mental disorder is as follows: A clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is associated with present distress (e.g., a painful symptom) or disability (i.e., impairment in one or more areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or a loss of freedom.
2. This percentage figure includes all categories of diagnosable mental health conditions.
3. Mentally ill detainees present serious security concerns for jail administrators. According
to Ruddell (2010), these individuals are often disruptive and normally require enhanced supervision as well as protection from predatory inmates. Ruddell documents that 9.3% of jail inmates with mental health problems were physically injured during some type of inmate-to-inmate altercation, and 19% were charged with institutional infractions. Complicating the picture, the mentally ill are often caught in a cyclic pattern involving living on the streets and being detained in a local jail.

4. The prevalence of mental illness within correctional populations has generally been established using any one of three methods: (a) face-to-face clinical assessments of incarcerated persons, (b) self-reporting by incarcerated persons, and (c) via a system of matching incarceration records with mental health care records (Cox, Morschauser, Banks, & Stone, 2001).

5. The research on church influences generally does not use an institutional approach but instead emphasizes measures of membership, registration, church attendance, or socio-political beliefs based on individual data. Nevertheless, one can infer from this research the expectation that public assistance programming would be closely linked to such indicators. Lee (2006) epitomizes this approach (also see Beggs, Haines, & Hurlbert, 1996; Lee & Bartkowski, 2004; Tolbert, Lyson, & Irwin, 1998).

6. Wilson (2000, p. 221), citing earlier research (McPherson & Rotolo, 1996, p. 181, Sundeen & Raskoff, 1994, p. 392), notes that education is a highly consistent predictor of volunteering activities. He emphasizes probable reasons for the empirical association, noting that education “... heightens awareness of problems, increases empathy, and builds self-confidence” (Brady, Verba, & Schlozman, 1995, p. 285, Rosenthal, Feiring, & Lewis, 1998, p. 480). Wilson continues, arguing that educated people ... “are also more likely to be asked to volunteer (Brady, Schlozman, & Verba, 1999), which is partly a function of the fact they belong to more organizations (Herzog & Morgan, 1993, p. 137), where they develop more civic skills, such as the ability to run a meeting (Brady et al., 1995, p. 285).”

7. Data are from the following sources: Jail Mental Health data are from the U.S. Department of Justice, Bureau of Justice Statistics, National Jail Census (1999); social structural data and manufacturing employment data are from the U.S. Census for the years 2000 and 1990; arrest data are from the US Department of Justice, Bureau of Justice Statistics, Federal Bureau of Investigation, Uniform Crime Report, 2000; religious data are from Jones et al. (2002); data on hospitals and education completion percentages are from Gallup-Black (2004); and data on elections are from America Votes (McGillivary, Cook, & Scammon, 2001).

8. Regarding urbanized population effects, an interval-level indicator may not produce significant results if at low levels modest changes are unassociated with movement along the dependent variable. But if thresholds are present, the highest levels of community urbanization, when operationalized as a dummy indicator, should exhibit a significant effect on the dependent variable.

9. We were unable to locate a consistent indicator of medical and mental health professionals, and so we introduced a hospitals indicator to approximate their effects. Hospitals are typically sprawling complexes supporting a full panoply of medical and mental health professionals who place their offices, clinics, and outpatient surgical wards in close proximity to central hospitals. With this in mind, we expect that an indicator reflecting the distribution of hospital complexes across county units will provide a reasonable approximation to the representation of professional practitioners in these same units.

10. Areas experiencing expanded manufacturing employment were disproportionately recently developed manufacturing centers that had not been traditionally as dependent on manufacturing employment. Areas traditionally dependent on manufacturing employment
generally have remained heavily dependent on manufacturing jobs even as they have experienced sustained losses in this sector since the late 1970s.

11. The ordered logit estimation procedure absorbs the intercept in the estimation of the cut points (Stata, 2001, p. 458) and does not retain information used to assess variance inflation. One remedy is to obtain variance inflation factor (VIF) scores after using ordinary least squares (OLS) regression. The average VIF using the fully saturated model is 2.09 with the largest value being well under 4, reinforcing our belief that variance inflation is not a serious issue in this analysis. Consistent coefficient estimates across diverse models (and in unreported models) provide additional evidence in support of our belief.

12. Drug and alcohol abuse often go hand-in-hand with a range of mental health manifestations, as is evidenced by the fact that many of the arrestees experiencing mental health symptoms also are found to have engaged in self-medication using alcohol and drugs. And of course, this is a factor in the local jailing of a disproportionate population of mentally disturbed individuals in counties throughout the United States (Proctora, 2012; Ruiz, Douglas, Edens, Nikolova, & Lilienfeld, 2012).

13. In unreported analyses, an interval-level poverty indicator was introduced into the models, but it was not a strong predictor of mental health resourcing. Perhaps this is because there are plausible threshold effects so that at low levels of poverty, the presence of the poor has little effect on policy decision making, but as the population is constituted increasingly by poor individuals, limited resources in the community restricts the ability of public officials to extract tax revenues and apply them to meet the needs of expanding local jail operations.

14. The following provides a brief statement on the essence of the procedure: “Note that the default [partial proportional odds] results are very similar to the series of binary logistic regressions estimated by the Brant command and can be interpreted the same way, i.e. the first panel contrasts category 1 with categories 2, 3, & 4, the second panel contrasts categories 1 & 2 with categories 3 & 4, and the third panel contrasts categories 1, 2, & 3 with category 4. Hence, positive coefficients indicate that higher values on the explanatory variable make it more likely that the respondent will be in a higher category of Y than the current one, while negative coefficients indicate that higher values on the explanatory variable increase the likelihood of being in the current or a lower category” (Williams, 2007, p. 6). For more on this topic, see Williams (2006).

References


