Comparative analysis of deaths in Cook County and Milwaukee County jails

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ABSTRACT

This descriptive study analyzes inmate mortality in two large urban jail systems in the United States. Data were collected on all deaths that occurred in Cook County Jail, Illinois and Milwaukee County Jail, Wisconsin from 1995 through 2004. The key variables were cause of death, age, sex, ethnicity, marital status, education level, type of offense, number of incarcerations, and length of incarceration. Although no single variable emerged as a reliable predictor of in-custody death, distinct patterns emerged upon comparing death occurrences within the jails as well as with mortality rates for the U.S. general population. Natural death due to illnesses has surpassed suicide as the principal explanation of how people die in these two large urban jail systems, although suicide remains the single leading cause of inmate death in both counties. In both systems, the county jail has become the primary health care provider for the vast majority of the men and women confined there. Findings suggest that the inmate mortality rate could be further reduced by comprehensive inmate health care. The harsh reality, however, is that drastic cuts in county budgets have had a devastating effect on the ability of those who provide jail health care to do their job.

Key words: jail deaths, inmate mortality, health care

INTRODUCTION

Research that compares mortality data from two large urban jail systems in the United States provides valuable information about trends and patterns and the relative effectiveness of alternative intervention strategies to reduce the risk of dying behind bars. By examining mortality in jail populations and comparing it to mortality in the U.S. resident population, researchers have made available an important knowledge base for correctional policy makers as well as healthcare administrators at these institutions. Such data also provide a resource for revising procedures and training curricula aimed at better managing that risk.

Notwithstanding the considerable progress that has been made in the last thirty years in reducing the incidence of jail and lockup deaths, inmate deaths in custody still occur at a higher rate than in the U.S. general population. During the first decade of the twenty-first century, deaths in jails and lockups grew by nearly 20%, an increase that was largely attributable to the even greater percentage (31%) growth in the average daily population in these facilities *(*Noonan, 2010*).*

Deaths from physical illnesses now claim a disproportionately high number of those who die behind bars, owing to "multiple health issues" that they carry with them when they enter or are exposed to the jail population *(Kim et al., 2006).* Notwithstanding its relative decline in recent years, the inmate mortality rate for suicide attributable to mental illnesses still remains high. For those confined in our nation's jails and lockups, the risk of suicide is four times higher than for the U.S. resident population.

In addition to humane considerations attending the loss of life of a fellow human being in a jail cell, custodial death can cost already cash-strapped local and county governments millions of dollars in litigation expenses (Powell and Zevitz, 2011). The specter of costly civil litigation arising from in-custody death has spurred local and county funding bodies to weigh far more carefully requested budget allocations specifically earmarked for correctional health care. To reduce their risk exposure, they regularly seek out the advice of scholars and professionals in the field.

To this end, a growing number of studies have focused on this problem. These studies provide a conduit for the present study which examines inmate mortality in two large urban jail systems in the North Central region of the United States.

The purpose of this exploratory study is to determine if common traits and patterns exist in the deaths that have occurred among their incarcerated populations. The objective is to compare inmate deaths in these two metropolitan jail systems over a similar time period and match demographic and incarceration characteristics of decedents by cause of death.

BACKGROUND

This research builds upon two independent studies using similar criteria for collecting and measuring mortality and morbidity data from Cook County and Milwaukee County Jails. Both studies examined disease specific mortality rates, and both expanded their focus beyond that of most previous research which dealt exclusively with suicide deaths. In *Deaths in the Cook County Jail: 10 Year Report*, the authors noted that while the rate of suicide death is high, natural causes of death have overtaken suicides in the jail system of Cook County (Kim et al., 2006). The Cook County study's importance in the literature is its recognition of a broader definition of in-custody death, reflecting a more realistic picture of who is at risk to die.

An equally comprehensive examination of what has occurred with respect to inmate mortality is seen in *Death Behind Bars: An Examination of Mortality in Jail, Lockup, and Hospital Confinement—A Historical Study* (Powell and Zevitz, 2011). Utilizing data sources in addition to those found in medical examiner files, the authors noted how the facility characteristics in Milwaukee County played a key role, with inmate mortality found to be higher in short-term lockups and holding facilities than in jail facilities used for sentenced misdemeanants (Powell and Zevitz, 2011). As with the Cook County study, the Milwaukee County study also found that natural deaths have now surpassed non-natural deaths in terms of manner and cause of death.

LITERATURE REVIEW

Prior research on non-suicide mortality in municipal and county detention and corrections facilities has consisted mostly of aggregate-level studies. In two nationwide studies published in the last twenty-five years, Winfree (1987) and Wooldredge and Winfree (1992) examined natural deaths in U.S. jails as a separate category of inmate mortality. Winfree's (1987) macro-level analysis, based on the 1978 and 1982 national jail censuses, revealed that "intra-institutional variables", such as overcrowding and staffing, have little if any relationship to the state-by-state incidence of death by natural causes. However, this finding was disputed by Wooldredge and Winfree (1992, p.473) who subsequently found natural deaths to be "more prevalent in more crowded jails [and] larger facilities" compared to less crowded and smaller ones.

More recent studies have explored in-custody jail deaths in smaller delineated geographic locations and over longer periods of time. In one of these longitudinal studies, described as "a retrospective, exploratory analysis", the frequency and type of jail death was looked at in terms of both manner and cause of death (Grant et al., 2007, p.1177). The authors found that natural death was by far the most common fatal occurrence for Maryland jails in most of the decades from the 1930's. Another longitudinal study of all deaths occurring in the Atlanta-Fulton County, Georgia jail network found similar results (Frost and Hanzlick, 1988). Although the time period for in-custody deaths that were studied was shorter (1974-1985) than the Maryland jail study (1939-2004), the authors of the Atlanta-Fulton County study reported similar results. The majority of inmate deaths in Atlanta-Fulton County were attributed to natural causes. Consistent with the findings of the above-cited studies, the latest report by the U.S. Department of Justice, based on BJS' Death in Custody Reporting data, pointed out that deaths from physical illnesses (heart disease, AIDS, etc.), claimed 53% of all jail deaths during the latest reporting period (Noonan, 2010).[1] In light of the high numbers of in-custody deaths now classified as "natural", a more comprehensive understanding of the various illnesses and the frequency of these illnesses that constitute "natural" death and claim the lives of so many inmates behind bars is needed. By exploring the wide range of socio-legal and demographic characteristics that describe these decedents and their confinement situations, more insight might be gained about the health care needs of jail inmates that might prevent future deaths.

[1] Suicide still remains the single leading cause of death in the roughly 3,000 jail jurisdictions in the United States.

RESEARCH SITES

Milwaukee County in Wisconsin and Cook County in Illinois are the two research sites for this study. The in-custody populations of both of these metropolitan counties are by far the largest in their respective states. Milwaukee County's inmate population is distributed among pretrial detainees and sentenced prisoners serving terms in the county jail of up to two years. Altogether during the ten years period covered by this study, Milwaukee County processed 642,578 detainees ranging from an annual low of 53,706 in 2004 to an annual high of 63,211 in 1997. In comparison, approximately 850,000 detainees (ranging from 86,115 in 1996 to 105,641 in 2004) were booked into the Cook County Jail during the same period (Cook County Sheriff's Department, 1999). Whereas the latter jail system's average daily census was 9878 inmates in the years from 1995 through 2004, Milwaukee County's average daily census was 3298 during this time (Wisconsin Department of Justice, 2004). Twenty percent of Cook County detainees were released within three days of entry into that system, versus six days for roughly the same percentage of pretrial detainees in the Milwaukee County Jail. While the Cook County Jail primarily holds pretrial detainees, less than half of those held in Milwaukee County were pretrial detainees, since approximately a third of the inmates held there were sentenced and serving terms in the county jail that average about four months. The average length of stay for pretrial detainees was 51 days in Cook County and 34 days in Milwaukee County for the period under study.

DATA AND METHODS

Data were collected on all deaths that occurred in Milwaukee County Jail facilities from 1995 through 2004, which were then matched with a similar data set for Cook County Jail collected by a research team from the School of Public Health, University of Illinois, Chicago (Kim et al., 2006). Collection criteria utilized by researchers in both studies consisted of medical examiner reports on jail deaths and the circumstances surrounding them. These case reports recorded the manner and cause of death, based primarily on autopsy findings. In every instance, the cause of a reported jail death was coded according to the official classification system used by the Centers for Disease Control and Prevention, Atlanta, Georgia. All-cause mortality as well as disease-specific mortality were adjusted by age (ten year intervals) and the average daily jail census for each year in the study produced a rate that could be used to compare death occurrences within the two jail systems as well as those in each system with age adjusted cause-specific mortality rates for the U.S. general population (National Center for Health Statistics, 2004).[2]

The key variables were cause of death, manner of death, age, sex, ethnicity, marital status, education level, type of offense, number of incarcerations, and length of incarceration prior to death. Both data sets underwent separate analyses to determine if the aforementioned demographic and incarceration-related variables revealed patterns by death causation. In addition to examining simple frequencies and percentages, statistical testing using ANOVA and chi-square tests was conducted to further examine the various relationships.

[2] For comparison of mortality rates in large urban jails to the general population, Dr. Kim's research team utilized annual average daily census counts in calculating mortality ratios by method of direct standardization.

RESULTS

Altogether there were 228 jail deaths studied, all occurring between 1995 and 2004. A total of 178 deaths for the Cook County Jail and another 50 for the jail system in Milwaukee County were reported for this ten year period. During that time, the annual mortality rate averaged 160 per 100,000 inmates in Cook County and 96 per 100, 000 inmates in Milwaukee County. The mean age of decedents in Cook County Jail was 40.4 years for males and 37.4 for females, while Milwaukee County Jail's was 38.9 years for male decedents and 46.3 for female decedents. The gender distribution for jail decedents in both counties, for the most part, reflected their respective total jail population distributions (Powell and Zevitz, 2011; Kim et al., 2006). In Cook County Jail, 159 (89.3%) were males and 19 (10.7%) were females. In Milwaukee County, 44 (88%) decedents were males and 6 (12%) were females. As for race/ethnicity, while Cook County Jail's distribution of deaths resembled that of the total jail population, with 131 (73.6%) blacks, 32 (18.4%) whites, and 11 (6.3%) Hispanics, Milwaukee County Jail's racial/ethnic distribution of deaths varied from its total jail population in one aspect. Between 1995 and 2004, the majority (74%) of inmates in the Milwaukee County Jail were black, with the remainder consisting of 22% white and 4% Hispanic. Milwaukee County's distribution of jail decedents consisted of 21 (42%) blacks, 24 (48%) whites and 4(8%) Hispanics. White inmates had a disproportionately higher representation among those who died while incarcerated, while black inmate deaths were disproportionately lower.

In both Cook and Milwaukee Counties, unlike what had characterized earlier decades, where suicide was the leading cause of all jail deaths, natural death due to illnesses has overtaken suicide as the principal explanation of how people die behind bars. Natural deaths may be attributable to either physical illness or infectious/inflammatory diseases.

In order to reconcile differences in the way natural deaths were classified in the two research settings, the Milwaukee County data were recoded, using the medical cause of death for natural deaths and, for purposes of this work, treating accidental death, suicide and homicide as causes rather than the medicolegal practice of employing the term "manner of death". In the same vein, for methodological purposes, causes of death were then recategorized into three groups: illness related death, infectious/inflammatory death, and non-illness related death (Kim et al., 2006). With this framework in place, it was possible to explore variations and the effects of demographic and other characteristics.

The causes of death in the two jail systems during the ten year period in question revealed marked differences, as shown in Table 1 (Appendix). In Cook County Jail during this time, 53.4% of deaths were caused by physical illnesses. Coronary heart and cerebrovascular disease, as well as cancer, claimed the lives of over a third (34.9%) of those who died there. In comparison, Milwaukee County had just 44% of its deaths caused by physical illnesses. Coronary heart diseases alone were responsible for well over half of these illness-related deaths. Cerebrovascular diseases accounted for a quarter of illness-related deaths. Besides heart disease and cerebrovascular disease, no other chronic illness accounted for more than 5% of illness deaths in the Milwaukee County Jail between 1995.

Deaths classified within the infectious/inflammatory disease category amounted to 19.7% of all jail deaths in Cook County Jail and just 2% of all jail deaths in Milwaukee County Jail. HIV/AIDS was the medical condition within this category with the highest percentage (9.0%) of

all reported deaths in Cook County Jail. The Milwaukee County Jail system reported no HIV/AIDS deaths for the ten year period of this study (1995-2004).[3]

Non-illness related deaths included suicides, homicides, accidental injuries, and fatal substance abuse overdoses and withdrawals. For these non-illness related deaths, medical cause of death was not included. In comparing the two jail systems for the ten year period under study, suicides accounted for a larger percentage of overall deaths in Milwaukee County Jail (26.0%) than in Cook County Jail (10.7%). Likewise, substance abuse overdose or withdrawal-caused fatalities claimed a higher percentage of jail deaths in Milwaukee County (20%) than in Cook County (89%); however, the homicide percentage was nearly the same in both county jail systems, with 4.5% in Cook County and 6.0% in Milwaukee County.

Table 2 (Appendix) shows comparisons of demographic and incarceration-related variables by cause of death in the separate jail systems of the two counties. In both study populations, younger inmates, regardless of race and ethnicity, were more likely than older inmates to die from non-illness related causes, such as suicides, homicides and overdoses, rather than from chronic physical illnesses or infectious/inflammatory diseases. The mean age for suicides, homicides, and accidental deaths in jail was 34.8 years in Milwaukee County and 35.0 in Cook County. Older inmates were more likely to die from illness-related causes, followed by infectious/inflammatory diseases. The mean age in Milwaukee County Jail was 43.1 years for illness-related deaths and 50.0 years for infectious/inflammatory disease deaths.
The mean age in Cook County Jail was 42.1 for illness-related deaths and 41.2 for infectious/inflammatory disease deaths.

In the Cook County Jail system, female inmates were more likely to die from drug overdoses and withdrawals than from any other single cause. Roughly a third of all female jail deaths in Cook County were so caused. In contrast, males in both county jail systems and females in Milwaukee County Jail were more likely to die of illnesses such as heart or cerebrovascular diseases than infectious/inflammatory diseases or non-illness related causes. Nearly a third (29.5%) of male deaths in Cook County Jail were from diseases of the heart or cerebrovascular system. In Milwaukee County Jail, males were twice as likely to die of heart or cerebrovascular diseases than any other single natural cause. Overall, the mortality rate for male inmates in the jails of both counties was slightly higher that that for female inmates.

In both Milwaukee County and Cook County, older jail inmates died at a much higher rate than younger inmates. In Milwaukee County, just 22% of jail deaths occurred among persons 30 years and under, despite the fact that nearly 45% of the jail population in that county were in this age category. Milwaukee County inmates 40 years or older made up not quite 38% of the jail population between 1995 and 2004, yet 48% of decedents were that old. In Cook County Jail, roughly 50% of the inmate population is 30 or younger, yet this age group accounted for less than 30% of jail deaths. As could be expected, older inmates in both jail systems were several times more likely to die due to an illness, particularly heart-related or

[3] Only one of the fifty Milwaukee County Jail decedents between 1995-2004 was reported to be HIV positive and the ruling in his cause of death was not HIV/AIDS according to the medical examiner. It should be noted that deaths of inmates unconditionally released to unsecured medical facilities were excluded under the Deaths in Custody Reporting Act of 2000 (DICRA PL 106-297).

cerebrovascular diseases.[4] Younger inmates (40 or younger), while still at considerable risk of death due to illness, stood a much greater chance than older inmates of dying from suicide, drug overdose, or from intentional or unintentional harm inflicted by other inmates. While incarcerated blacks comprised majorities in terms of numbers in both Cook County Jail (70%) and Milwaukee County Jail (74%) during the ten year period in question, African Americans were overrepresented in the percentage of illness-related jail deaths that occurred in Cook County and underrepresented in the percentage of non-illness -related jail deaths that occurred in Milwaukee County. Over 83% of the total number of illness-related deaths in Cook County Jail during the years from 1995 through 2004 befell black inmates. In the same period, by way of contrast, 62% of the infectious/inflammatory-related deaths in Cook County Jail consisted of black inmates (Kim et al., 2006). Milwaukee County Jail's non-illness related deaths during this same period for white inmates was proportionately higher than their numbers among the jail population represented. For instance, 69% of jail suicides in Milwaukee County during this period were incurred by white inmates, yet white inmates comprised only approximately 20% of Milwaukee's total jail population.

White inmates as a group were not the only racial or ethnic group that had a disprortionately high percentage of suicides. Hispanic inmates were more likely to die of unnatural causes, with suicide and overdose deaths accounting for large percentages. Inmates of Hispanic origin confined in Cook County Jail were almost twice as likely to die from these causes as from heart disease. In Milwaukee County Jail, suicide was the leading cause of death among Hispanics (60%), followed by overdose/ withdrawal. Hispanic inmates tended to be younger (35.4 years) than the mean age of other decedents in both jail systems where Hispanics represented nearly one out of every four suicide deaths in Milwaukee County Jail and one out of every six suicide deaths in Cook County Jail during the ten year study period. If infectious/inflammatory disease-related deaths in Cook County Jail are included with non-illness caused deaths in that jail system, white and black inmates were nearly twice as likely as Hispanics to die from causes related to chronic illnesses.

Although 41.7% of jail decedents in Cook County and 58.0% in Milwaukee County had been booked on minor offenses, and less than 10% in both jail systems were first time incarcerants, these percentages as well as others derived from offense classifications and prior arrest patterns, when analyzed by cause of death, were found to be of no statistical significance. Nor was marital status, education level or employment status[5] determined to be statistically significant. Using the three broad causation categories (illness-related, infectious/inflammatory-related, non-illness related), one variable proved to be remarkable, and that was length of incarceration. In Milwaukee County, only 9% of illness-related deaths occurred within the first two days of incarceration. In Cook County, approximately 14% of illness-related deaths and roughly 27% of non-illness related deaths took place within two days of incarceration. As more time behind bars elapsed, a trend not unexpectedly appeared. Fifty-nine percent of Milwaukee County Jail's illness-related deaths occurred after 31 days incarceration, while 22% of non-illness related deaths took place during this same time period. Similarly, in Cook County, 63% of illness-related jail deaths, 74% of infectious/inflammatory disease deaths and 48% of non-

[4] According to BJS data, inmates age 45 or older were nine times more likely to die due to an illness, "[s]pecifically, older inmates were 11 times more likely to die from heart disease and 19 times more likely to die of cancer than inmates younger than 45." Noonan, p.5.
[5] Data for Milwaukee County Jail only.

illness related jail deaths took place after 31 days in custody (Kim et al., 2006). This finding underscores the need for a continuum of health care services for incarcerated persons with chronic physical illnesses identified at medical intake screening.

In the aggregate, 40% of the deaths that occurred in Milwaukee County Jail and 61% of those in Cook County Jail occurred after one month (31 days) in jail. There were no significant variations in length of stay at the time of death associated with age and race/ethnicity, but a greater percentage of female deaths in Cook County Jail occurred within 48 hours of incarceration compared to male inmates in both jail systems and female inmates in Milwaukee County Jail. As noted by Kim and associates, "[o]ver 63% of females deaths and only 9% of male deaths occurred within 2 days after incarceration" (Kim et al., 2006:77). Comparable percentages for Milwaukee County within 2 days of incarceration were 30% for male deaths, and 0% for female deaths.

Substance abuse has long been suspected as a contributing factor in the deaths of many jail inmates, particularly those who die of heart disease (Hollander, Vigona and Burstein, 1997). Aside from accidental drug overdose cases, which claimed the lives of about a fifth of the decedents in the Milwaukee County study, and between 6% to 7% of the decedents in the Cook County study, drug associated myocardial infarction and other cardiovascular fatal events connected with chronic substance abuse undoubtedly helps to explain the high percentage of deaths from heart disease in both jail systems. Multiple-substance abuse, with alcohol and tobacco also playing a role, was not uncommon. When Powell and Zevitz (2011) looked beyond medical examiner case reports and also examined criminal justice histories as well as agency investigative files, they found that approximately two thirds (65.7%) of coronary heart disease deaths in Milwaukee County Jail from 1988 through the first half of 2009 involved individuals with serious histories of substance abuse at the time their deaths. However, when comparing the substance abuse rate of all jail decedents in Milwaukee County with that of the general arrestee population for that county, "where roughly half have present or past alcohol or drug -related involvement with the law, no statistically significant difference can be claimed" (2011:113). Unfortunately, comparable data on Cook County Jail decedents' substance abuse histories was unavailable for examination. However, the decedents there who died of heart disease were predominantly black males with a mean age of around 40 years and anecdotal case evidence would seem to suggest a disproportionately high percentage of cocaine use among this group of incarcerants (Kim et al., 2006).

In viewing type of offense by cause of death, there was no statistical difference in death causation among violent and non-violent offenders. This finding was consistent for both Milwaukee County and Cook County Jails, but contrary to BJS's statistical data (Noonan, 2010) which found that violent offenders in the years from 2000 to 2007 had a higher mortality rate than non-violent offenders.

Mortality for the jail populations of Milwaukee and Cook Counties differed only slightly from the general resident population of the United States. In the U.S. general populations as with both jail systems under study, heart disease was the leading cause of death. However, the mortality rate for various diseases of the heart was significantly higher for both jail system populations than for the U.S. resident population (Kim et al., 2006; Powell and Zevitz, 2011). Non-illness deaths, excluding unintentional fatal injuries, occurred in the two jail systems and the U.S. resident population at rates that were not significantly different. In contrast, death from most infectious and inflammatory diseases occurred at a higher rate in the Cook County Jail than in the Milwaukee County Jail, and considerably higher than in the general population.

For example, AIDS/HIV (infectious disease) deaths in Cook County Jail were 10.3 deaths per 100,000 for the study period, whereas the comparable age-adjusted mortality rate for U.S. residents was 5.0 per 100, 000.[6] However, with regard to suicide, an atypical pattern emerged. The tenth leading cause of death in the United States since 2000, suicide has been the single leading cause of unnatural deaths in American jails since the 1980's (Noonan, 2010). In both jail systems under study the rate is lower than for the U.S. general population. It accounted for only 10.9% of Cook County Jail deaths and 26.0% in Milwaukee County Jail between 1995 and 2004. The Milwaukee percentage is consistent with the 29% national jail suicide percentage. This finding suggests that Cook County's Jail suicide prevention efforts are paying dividends.

After adjusting for differences in age distribution by sex and race/ethnicity through a direct standardization procedure, study data more closely mirror the general U.S. population. Suicide rates for Cook County and Milwaukee County Jails were several times higher than the suicide rate for U.S. residents in general. The Cook County and Milwaukee County rates were consistent with reported national data (BCS) from 2000 to 2007. The standardized suicide rate for jail inmates consistently has been 4.4 times higher than the suicide rate for the general population (Noonan, 2010).

With the exception of jail suicide deaths, the across-causation mortality rate for jails was generally lower than the rates for the U.S. resident population as a whole. For example, according to BJS data, "the age-adjusted all-cause mortality rate" in Cook County Jail in 2002 was 521.0 per 100,000 inmates, using the average daily jail census in the calculation. The mortality rate for the general U.S. population in 2002 was 845.3 per 100, 000.

DISCUSSION AND CONCLUSION

Findings from this study point to a considerable challenge for both health care providers and local correctional administrators charged with attending to the health and safety of jail inmates. Because data from these two counties indicated that their inmate populations have needs of a medical nature that are usually present throughout their confinement, the biggest challenge for the health care professionals working in county jails may be providing a continuum of comprehensive care well beyond medical intake screening. This is particularly problematic when it comes to addressing the health-related needs of chronically ill inmates, many of whom are at considerable risk of dying while incarcerated.

In an omnibus survey of jail inmates randomly chosen from a representative sample of nationwide facilities, jail inmates were questioned about the condition of their general physical and mental health, medical histories, physical impairments, and any health-related problems they may have experienced since coming to jail (Maruschak, 2006). This inmate self-report data, collected from thousands of jail inmates throughout the United States, undoubtedly provides a fairly accurate picture of the medical problems of jail inmates in Milwaukee and Cook Counties.

More than a third of jail inmates in the survey reported having a current medical problem, including specific medical issues that increase the risk of death. Around a sixth of respondents reported having heart problems and/or hypertension. Heart valve damage (290 per 10, 000 inmates) and arrhythmias (211 per 10, 000) were the most commonly reported types of heart

[6] Infectious/inflammatory illness deaths were fairly infrequent in the Milwaukee County Jail during the ten year study period. The lower rate probably reflects differences in handling offenders who were so inflicted rather than any higher-rated health status of Milwaukee's urban poor.

conditions (Maruschak, 2006). Approximately 8% of jail inmates age 45 or older suffered from diabetes. With the exception of paralysis, strokes and tuberculosis, female inmates had higher levels of 14 specific medical problems than male inmates, including such problems as cancer, kidney and liver disorders.

Although jail inmates routinely get questioned about their current physical and mental status as well as their medical histories at intake screening, only 43.1% had a medical examination since admission to jail and, of those reporting a current medical problem, only 41.8% reported that they were subsequently seen by a health care professional for the medical problem. Even if a medical condition is reported at intake screening, jail inmates are often incarcerated without their medications and it may be several days before an individual with a chronic illness receives the needed medication. In an apt description of the condition of most health care in our nations jail's, the Cook County Jail researchers noted that "[c]hronic conditions are often treated with an episodic urgent care approach that does not result in optimal care for [the] growing number of inmates with chronic health problems" (Kim et al., 2006:71). Given this study's finding that the vast majority of illness-related deaths in both Milwaukee and Cook Counties took place after a month or more of confinement, for these high risk individuals better chronic disease management by health care staff is needed throughout their time in jail.

Although no comparative data were obtained on the employment status of decedents in Cook County Jail at the time of their arrest, 54.5% of the decedents in Milwaukee County Jail were recorded as not having been employed at the time they were taken into custody (Powell and Zevitz, 2011). Even those who were employed had no health care benefits and were receiving little or no medical attention outside of what they received in the county jail. Nor was it likely that they had received medical attention other than what had been provided to them while previously incarcerated. Since those who die while in custody in Milwaukee County Jail as well as in Cook County Jail tend to be recidivists, jail health care professionals may very well have been their only health care providers during their last years alive.

In both Cook County Jail and Milwaukee County Jail, an intake screening process is in place to identify those inmates who may be at risk for suicide. Although both jail systems experienced suicides within the first two days of incarcerations, improved suicide prevention efforts at the initial period of incarceration may have had the effect of postponing suicide attempts to longer periods spent in jail. Ongoing assessment of at-risk inmates is needed throughout their confinements. Inmates on suicide watch in both jail systems are assessed frequently for emotional well-being and the most serious cases are under constant observation. Ideally, such at-risk individuals are cared for by qualified mental health professionals. Whenever feasible, mental health staff is utilized, but more often than not, this task falls on correctional staff. In Cook County Jail and Milwaukee County Jail, jail personnel are trained in suicide-prevention techniques and serve a critical role in preventing such incidents.

Jail health care plays a particularly important role for the mentally ill who find themselves behind bars. While the vast majority of mentally ill inmates do not die while incarcerated, 42.5% of the decedents in Milwaukee County Jail suffered from serious mental illness. Of these, 67.6% had committed suicide.

The situation for the mentally ill in Cook County Jail is equally bleak. Of the approximately 11,000 inmates housed in the Cook County Jail at any one time, it has been estimated that about 2,000 of them suffer some form of serious mental illness (O'Shea, 2012). With the city of Chicago's decision to close half of its community mental health centers in the wake of budget cuts, potentially leaving many uninsured patients without adequate treatment,

some individuals no longer treated in these clinics are engaging in problematic behavior that eventually leads to arrest. The Cook County Jail by default "has become the State of Illinois' largest de facto mental institution" (O'Shea, 2012). The official in charge of the County Jail, Sheriff Thomas Dart, has stated that the increasing number of people coming into the jail with mental health problems has raised the threat of suicides as well as other problems (O'Shea, 2012).

Cook County Jail administrators have implemented a comprehensive suicide-prevention policy consistent with national correctional standards. Procedures include screening, diagnosis, treatment, observation and transfer of suicidal inmates to the hospital as necessary (Hayes, 2010). With the projected increase in the number of inmates with mental health problems added to its jail population, this policy will no doubt be tested in the coming months and years. Whether or not it continues to be effective as it has been in keeping Cook County Jail suicide rates low in comparison to suicide rates in jails nationwide remains to be seen.

While suicide remains an important part of any discussion about in-custody death, deaths due to illnesses are attracting more scholarly attention as natural deaths have begun to replace suicide as the leading manner of in-custody deaths in large urban jail systems. As this study shows, heart disease was the most frequent cause of death both in the Cook County and Milwaukee County Jails. From a prevention point of view, in-custody deaths due to such natural causes as heart disease are more problematic than deaths due to other causes. Improved medical screening, monitoring and treatment for those inmates with chronic medical conditions that pose a high risk of death might result in fewer illness-related fatalities. But improvements in jail health care may ultimately depend upon budgetary resources being available for upgrades. Given current fiscal constraints on county governments, the likelihood of additional funding for jail health care in the foreseeable future is not great.

Preventive measures aimed at lessening the high heart-related mortality rate among jail inmates have been largely frustrated by the marked increase in the number of people being housed in jail facilities. Overcrowding has long been known to have serious physical and psychological effects on inmates subjected to prolonged exposure to crowded jail conditions (Zupan, 1991). Some research (e.g. Wooldredge and Winfree, 1992) supports the premise that reducing crowding in jail facilities, and thus creating a jail environment that is less stressful, may actually lessen the incidence of mortality due to heart-related causes.

Lastly, if administrative policies aimed at lowering inmate mortality rates are to be truly effective, they must be based on evidence gathered not only from medical examiner autopsy reports, but from other data sources as well. Further research is needed to determine other etiologic causes of natural deaths associated with underlying illnesses (Kim et al. 2006). For example, the connection between suspected substance abuse and heart-related deaths among younger inmates may need to be substantiated through examination of criminal justice agency reports, not just from postmortem toxicological screens. A medical cause of death based on an autopsy review, if even available, may not be enough. The Federal government can play an important role in this regard in serving as a clearinghouse for information about inmate deaths. A step in the right direction came with the passage of the Death in Custody Reporting Act of 2000 (DICRA, PL 106297), which allows researchers access to detailed individual inmate death records (U.S. Department of Justice, 2005, p.2). The enhanced data collection capability provided by DICRA will no doubt foster further research. Toward this end, planned refinements to the DICRA questionnaire sent to jail administrators for reporting deaths in their facilities are encouraging.

If the results and policy recommendations that emanate from future studies are evidence-based, perhaps the research reported here comparing mortality in two large jail systems might have some applicability. More and better data on the enigma of death in custody will only lead to a more comprehensive understanding of this problem. Only then will policymakers be in a position to achieve a greater measure of success in reducing death behind bars.

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