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Prison staff occupational health and safety and its relationship with inmate health:

A review

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Introduction: Sharing Health Risks in Prison

People sharing an environment, even those with different patterns of social structure and movement, will also share many of the same health and environmental risks. In a prison or jail context, therefore, there may be significant overlap in risks — and health protective factors — between prisoners and prison staff. In a close and closed community, infectious diseases will spread with little distinction between the inmates and the custodial staff. Further, where the environment is stressful, that stress will be manifested in both the inmates and the staff, and where it is unsafe, the lack of safety will extend to staff-prisoner as well as prisoner-prisoner interactions. In addition, environmental hazards will impact on both staff and inmates, whether through cold, heat, noise, poor ventilation, or environmental toxins such as asbestos or lead. Inmates and staff breathe the same air, walk in the same buildings, touch the same objects, and often suffer the same stresses of the psychological and physical environment. Sometimes they will eat food prepared in the same kitchens by the same staff or inmates. From a physical and psychological health perspective, if a prison is an unhealthy environment for inmates, it will also be unhealthy for staff. Thus, it makes no sense to consider the health needs of prisoners without realizing that in many instances, they are closely connected with occupational health and safety issues of prison staff, and vice-versa.

Prison Staff as a Neglected Sector of Occupational Health

If prisoners can be considered a relatively forgotten sector of the community, prison staff might also be considered a relatively neglected sector of the workforce. The literature on the health and psychosocial stressors of correctional staff is sparse, and staff in correctional institutions are often considered in conjunction with other peace officers such as police, although their duties and risks may vary considerably[2]. Part of this confusion may lie in the fact that in some occupational databases, no distinction is made between police and correctional officers and thus occupational and lifestyle hazards in the two groups cannot be separated. Further, as Jetté and Sidney[3] observed, sometimes there is a traditionally adversarial relationship between management and unions where there is a suspicion of any form of testing of union members or their involvement in health-related or health-enhancement programs, and a wariness that information collected might not be in the best interests of their members. On the other hand, more recently other researchers have conducted large studies in correctional systems with a high degree of support and produced important findings that benefit both management and staff[4,5]. All of these studies were carried out in North America, although they probably generalize to other Western correctional settings.

Long-term effects of Correctional System Work

Often, health issues of staff in the correctional system focus on short-term risks to health such as trauma or infectious diseases. The long-term effects of working in a correctional setting should also be considered: however, such studies rely on following up large samples of correctional staff over relatively long time periods, or looking at measures or markers of morbidity in correctional staff. Thus, they can be difficult and expensive, or depend on the availability of large state or national occupational data sets which distinguish correctional officers. When comparing mortality and

1 . I thank Dr Amy Jo Harzke for her helpful comments on an earlier version of this paper.

2. Hessl SM (2001). Police and corrections. *Occupational Medicine* 16(1):39-49.
3. Jetté M, Sidney K (1991). The benefits and challenges of a fitness and lifestyle enhancement program for correctional officers. *Canadian Journal of Public Health* 82: 46-51.
4. Armstrong GS, Griffin ML (2004). Does the job matter? Comparing correlates of stress among treatment and correctional staff in prisons. *Journal of Criminal Justice* 32:577-592.
5. Alarid LF (2009). Risk factors for potential occupational exposure to HIV: A study of correctional officers. *Journal of Criminal Justice* 37:114-122.

morbidity by occupational category, Hessl[6] notes that law enforcement personnel in the U.S. (police and corrections officers) have among the top ten proportional mortality (death) rates from ischemic heart disease (narrowing of the coronary arteries and decreased blood supply to the heart), with black officers having a significantly higher rates than white officers. Hessl[5] lists a number of health risks for correctional staff in the prison environment: Tuberculosis, blood-borne pathogens (hepatitis B and C, HIV) in injecting (or tattoo) equipment, lead and asbestos in old facilities, chemicals and solvents in prison industries, noise, heat and cold; the effect of shift work, including disordered sleep; trauma from violence; heightened risk of homicide or suicide; and particularly, stress, which can lead to gastrointestinal complaints, an increased risk of heart disease, and alcohol abuse and subsequent cirrhosis of the liver.

Impact of Stress

Stress may be at the heart of the health issues confronting staff in prisons and other correctional institutions. Because the health of prison staff and inmates is intertwined, stressed prison staff may produce stressed prisoners, and stressed prisoners produce stressed prison staff. The relationship can develop into a vicious cycle. It is thus in the interests of the health and safety of all concerned that the interdependence of prisoners and staff in prison health — infectious disease, violence, environmental hazards, and stress — are seen to interact in a relatively closed system. I use the term 'relatively' closed, because not only do prisoners get released, but prison staff return to the community at the end of their shifts, where the effects of disease and stress are transmitted to their families, with both immediate and long-term consequences.

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Staff Stress and Prisoner Stress Interact

There are mutually dependent relationships between staff stress and prisoner stress because both are caused by environmental conditions in the prison. Nurse, Woodcock and Ormsby[7] conducted focus groups of staff and prisoners separately at a medium-security prison in England and found that the key aspects of the prison environment that affected prisoners' mental health were isolation and lack of mental stimulation, which in turn encouraged drug misuse as a means of escape and to relieve mental tedium. All the prisoner focus groups emphasized the interactive nature of negative staff-prisoner relationships, where if an officer treated prisoners badly, prisoners would make that officer's life difficult, thus causing more stress for the officers. They also noted how fewer staff increased the amount of time prisoners spent in cells, which made prisoners more difficult to deal with, thus increasing stress levels of both staff and prisoners. Staff focus groups noted, in addition to the stress caused by increasing numbers of prisoners and its resultant increase in tensions between staff and inmates, problems arising from management style — lack of communication, insufficient information, and lack of continuity of care with prisoners. Uniformed staff considered that stress was the most important issue affecting their health. Prison health care staff were also concerned about how other staff members would 'offload their stress on them' (p482), as well as safety concerns about having to interview prisoners on their own in potentially unsafe situations. The increasing numbers of prisoners contributed to staff stress because it decreased the possibility of positive interactions with prisoners and the chance of identifying prisoners' problems. One staff member observed that 'Only a couple of years ago there was enough time for staff to talk one on one with prisoners… you could identify prisoners who were having problems' (p482). Such comments underscore the often interactive nature of relationships between staff and prisoners and their strong potential for contribution to stress in both groups.

Nurse et al.'s[6] study found that stress differed between health care workers in prisons and uniformed officers. In an insightful study of nurses in English prisons, Walsh[8] notes the cognitive dissonance often felt by nurses as a 'care-custody conflict' created by the clash of the philosophies of caring and custody. This clash, argues Walsh, arises largely because the prison setting has its primary focus on secure custody, while healthcare is often seen as secondary. In her study nurses working in prisons considered their work to be 'emotional labour', due to the continuous negotiation of the web of demanding

6. Hessl SM (2001). See n.2.
7. Nurse J, Woodcock P, Ormsby J (2003). Influence of environmental factors on mental health within prisons: focus group study. *British Medical Journal* 327:480-483.
8. Walsh E (2009). The emotional labor of nurses working in Her Majesty's Prison Service. *Journal of Forensic Nursing* 5:143-152.

relationships that exist in prison healthcare settings. Such demands include ensuring that the prisoner feels confident in the nurse's ability or the prison officer feeling that the nurse understands the officer's perspective, or the prison's routine restricting the nurse's ability to provide particular or appropriate care. In Walsh's study, nurses also noted stresses inherent in managing aggression and manipulation, coping with prisoners whose offenses they found difficult to deal with emotionally, working alongside colleagues whose practice was felt to be substandard, and managing relationships with prison officer colleagues. Some described using detachment as a way of avoiding sympathy, empathy and care for prisoners. These data suggest that conflicting professional ideologies, sometimes combined with a relative lack of power in the prison structure, may take a higher toll in job-related stress on health care personnel in prisons.

A second stress-producing aspect of the job for corrections officers is the need to deal with violent and disruptive inmates[9]. Parker designed and evaluated a training course for correctional officers in a 'supermax' facility (designed for violent or disruptive inmates). The course was designed on the premise that correctional staff had received only minimal prior training for managing such inmates, and for understanding mental health issues. The 10-hour course was designed and taught by the National Alliance on Mental Illness especially for correctional staff and focused on the specific conditions that correctional officers faced. Compared with the nine months before the course, incidents of assault by bodily waste (the so-called 'prison officer cocktail') on officers by inmates in the unit after the course declined significantly to zero, and all incidents involving officers also significantly declined. Parker[8] suggests that this was as a result of training correctional officers to better understand and deal with mentally ill offenders, including talking with offenders in a therapeutic manner, and working as an integral part of the mental health diagnosis and treatment process. This not only reduced violence against officers through providing officers with a better understanding of how to deal with the mentally disturbed, but also reduced the stress of working with difficult and potentially violent offenders. Thus, some workplace stressors are open to reduction through appropriate training and intervention programs. Further, Parker's data also confirm the close interactions between the adequacy of officers' training and prisoners' behaviour in stressful situations.

Organizational environment and Stress

The prison's physical and organizational environment itself may account for a considerable amount of stress and poor health in workers in the system — both correctional officers and correctional health and treatment personnel. In a landmark study of predictors of stress in both correctional officers and treatment personnel in the Arizona prison system, Armstrong and Griffin[10] found that correctional officers and prison treatment staff scored similarly on measures of stress and on stress-related health problems (including headaches, fatigue, and stomach trouble). High workplace stress (disturbance of physiological, psychological or social functioning in response to a condition in the work environment which poses a threat to well-being or safety) is experienced by large numbers of correctional staff (39 per cent according to Lindquist and Whitehead[11] in their 1986 study) and may be associated with a combination of factors such as the correctional environment itself and low pay and lack of benefits. One of the results of these high stressors is high staff turnover rates, itself contributing to understaffing and lower levels of training. The interaction of stress, staffing levels and training levels can lead to a vicious cycle of understaffing, stress, high turnover and lower levels of training and experience.

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One of the organizational factors that Armstrong and Griffin[12] suggest lead to stress is the shift in the US toward viewing correctional institutions as primarily punitive rather than rehabilitative. Shifts in institutional purpose can lead to a lack of clarity about role, job objectives, and responsibilities, lack of support from superiors, and lack of consistency in instructions and

9. Parker GF (2009). Impact of a mental health training course for correctional officers on a special housing unit. *Psychiatric Services* 60:640-645.
10. Armstrong GS, Griffin ML (2004). See n.4.
11. Lindquist CA, Whitehead JT (1986). Burnout, job stress and job satisfaction among southern correctional officers: Perception and causal factors. *Journal of Offender Counseling, Services and Rehabilitation* 10(4):5-26.
12. Armstrong GS, Griffin ML (2004). See n.4.

supervision. Lack of role clarity, where roles are perceived differently by the staff and by management, may result in staff stress.

Physical environment

Physical environment also constitutes a health and safety risk, with prison officers ranking second only to police officers in the number of workplace non-fatal violent incidents. Prison officers frequently perceive a constant threat of danger from those they supervise, with the suggestion that the threats are higher in maximum-security institutions. This is consistent with reports of higher rates of illness in prison officers in maximum-security prisons compared with minimum security ones[13]. However, the risk of physical danger is significantly higher for prison officers than for treatment staff, and so the finding of Armstrong and Griffin[14] that there were no differences between the two groups in job stress and stress-related health conditions raises questions about the specific weighting of environmental stress on stress and health outcomes. They found that the strongest predictors of job stress for custodial staff were role problems (conflict over differing and ambiguous job demands), while lack of intrinsic rewards, lack of co-worker support, lack of organizational support, and environmental safety were other significant contributors. For treatment staff, the findings were similar. For stress-related health problems, role problems were again strong predictors of physical symptoms, along with lack of organizational support. Interestingly, for treatment personnel, and to a lesser extent prison officers, a second strong predictor of health problems was lack of intrinsic rewards on the job, while environmental safety also acted as a predictor of health problems for prison officers. As might be anticipated, demographic variables such as being female, being younger and shorter duration of employment in the prison system were also associated with increases in stress and health problems. These data, which have the additional strength of being based on a large sample of the total state correctional facility staff, confirm the anticipated linkages of stress and stress-related health problems, but point to management issues such as job role problems and lack of organizational support (and the presence or absence of intrinsic rewards in the job) as being of equal or greater import than environmental safety in predicting stress and stress-related health problems. The clear implication of these findings is that management issues may be of equal or greater significance than anticipated prisoner violence in the production of stress-related illness such as headaches, fatigue and stomach upsets. Armstrong and Griffin conclude that apart from perceptions of personal safety, sources of stress (as well as protective factors against stress) were similar in both custodial and treatment staff groups, with environmental factors having the strongest impacts.

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Predictors of Workplace Stress and Poor Health

A study by Ogi ska-Bulik[15] among uniformed personnel, including a large sample of prison officers, in Poland suggests that the predictors of workplace stress have commonalities in prison officers across western cultures. Ogi ska-Bulik used measures of stress-related illnesses (somatic complaints, anxiety and insomnia, social functioning disorders, and symptoms of depression). The lowest level of stress, the highest degree of a sense of social coherence, and the highest degree of social support (along with the best health status) was found in prison officers, in comparison with the other uniformed servicemen (i.e. police, firefighters, security guards, city guards). Ogi ska-Bulik also found, as did research in North America, that the best predictors of health status were stress at work, and amount of social support. Thus, high workplace stress is associated with poorer health, and good social supports help to both reduce stress at work and be associated with better health. As in most other research on workplace stress, actual levels may depend on particular prison organizational and physical environments: thus, the level of stress compared with other uniformed professions may vary between and within countries.

Blood-born Disease

Taking an apparently very different health-related issue in prison staff, the risk of contracting blood-born

13. Lindquist CA, Whitehead JT (1986) see n.11.
14. Armstrong GS, Griffin ML (2004). See n.4.
15. Ogisńka-Bulik N (2005). The role of personal and social resources in preventing adverse health outcomes in employees of uniformed professions. *International Journal of Occupational Medicine and Environmental Health* 18:233-240.

infectious diseases such as HIV, the findings are surprisingly similar in locating the problem in contextual factors which in turn influence individual risks. Alarid[16] carried out a study of nearly 200 correctional officers in a US Midwestern state and found that it was institutional variables rather than individual behaviour that predicted exposure to HIV. It is important to note that HIV here serves as an exemplar infectious disease, since it is transmitted through blood and other body fluids, as are hepatitis B and C, both of which are very prevalent in prison populations, both an order of magnitude more infectious than HIV, and both may have severe or potentially fatal consequences. Alarid notes that prison staff are likely to be first responders to physical altercations, accidents, medical emergencies, and unpredictable and often hostile situations where sharp objects and body fluids may present risks. In addition, prison staff may frequently come into contact with needles discarded by inmates who don't have access to needle exchange or drug treatment, or from prison tattooing practices. Alarid notes that a number of institutional variables are likely to increase risk, including higher prisoner security level units, afternoon and evening shifts when there is more misconduct on the part of prisoners, and length of time employed in the correctional system.

Alarid's data confirm that institutional and contextual variables (perhaps through their influence on individual risk) are among the best predictors of occupational exposure to blood-borne pathogens such as HIV. The custody level of inmates (a measure of the level of violence), length of employment (a measure of the cumulative level of exposure to risk situations), and rank (which reflects the risk of being called to medical emergencies and altercations) all predicted level of exposure to blood-born pathogens. Interestingly, in terms of the prisoner variables that impacted on the risk of exposure for custodial staff, the sex of prisoners was not a significant risk, but prisoner behaviour (injecting drug use, tattooing, security level, and (for males) inmate-inmate sex) all presented the greatest risk of HIV infection and thus the greatest potential threat to prison staff. What is important to note in both Armstrong and Griffin's[17] and Alarid's work is that institutional and organizational variables may be strongly associated with health status or risks in correctional settings. The risks of contracting infections such as HIV and hepatitis B and C are obviously dependent on the prevalence of these conditions in the inmate population, but also on contextual and institutional factors: the institutional-level probability of exposure events, such as needle sticks or other forms of exposure to inmate blood and other body fluids, and the individual-level probability of direct exposure, given the individual's role in the institution. The health of prison staff, therefore, needs to be understood not only in terms of the immediate risk situation, but also in terms of the organizational and institutional factors that focus that risk, and may also create some of the stressors that are associated with longer-term chronic disease in correctional staff.

Inmate and Prison Staff Health Interactions

Taken together, these data suggest that there are a number of significant relationships between the health of inmates and of prison staff, and that prison environmental and organizational issues may also play an important role in the health of custodial staff, particularly over the long-term. Interestingly, the pattern also holds with blood-born infectious diseases, suggesting that the concept of risk *environments*, as much as risk sources and behaviours, needs to be considered. In particular, the long-term health consequences of working in a custodial environment (and the role of stress and environment) need to be better studied. However, any distinction between inmate health and custodial staff health, either short-term or long-term, is likely to be arbitrary. For a number of important health issues in custodial environments, there is little distinction between inmate and free, and the concept of a healthy prison needs to embrace both inmate and staff health as integral to one another.

16. Alarid LF (2009). Risk factors for potential occupational exposure to HIV: A study of correctional officers. *Journal of Criminal Justice* 37:114-122.
17. Armstrong GS, Griffin ML (2004). See n.4.