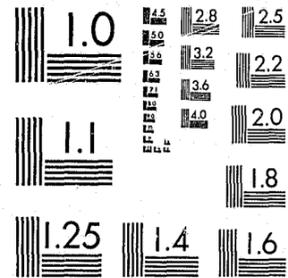


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# Federal Probation

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Probation: A Skills Course Work and Criminal Justice: New Dimensions . . . . .	<i>Gloria Cunningham</i>

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MARCH 1980

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All phases of preventive and correctional activities in delinquency and crime come within the fields of interest of FEDERAL PROBATION. The Quarterly wishes to share with its readers all constructively worthwhile points of view and welcomes the contributions of those engaged in the study of juvenile and adult offenders. Federal, state, and local organizations, institutions, and agencies—both public and private—are invited to submit any significant experience and findings related to the prevention and control of delinquency and crime.

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# Federal Probation

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## This Issue in Brief

**An Organization Development Experience in Probation: "Old Dogs" Can Learn New Tricks!**—The Maricopa County Adult Probation Department, Phoenix, Arizona, contracted with Training Associates to provide management and organization development training from March 1978 through February 1979. This article by Gary Graham and Herbert R. Sigurdson discusses problems within the organization which initiated this venture; OD theory is summarized; baseline data is presented; and the OD method used in the project is elaborated upon. Followup change-oriented data is presented at 7- and 12-month intervals.

**Dealing With the Violent Criminal: What To Do and Say.**—Criminal justice workers are often asked to give advice about how to handle an assault or a mugging attempt by a criminal. William B. Howard argues that the most immediately effective strategy is psychological resistance, and that presenting oneself in a non-critical, nonthreatening fashion will greatly reduce the likelihood of violence.

**General Overview of Capital Punishment as a Legal Sanction.**—In spite of United Nations efforts, capital punishment as an official or unofficial penalty deliberately imposed is becoming more frequent in far too many countries, asserts Professor Manuel López-Rey. There are two main forms of it: judicial death penalty which may be imposed by a subservient judiciary and non-judicial death penalty which may be decided and executed by military, police, and ideological services and organizations. The author concludes that at the end of the 20th century crime and penal sanctions are more and more determined by political regimes.

**The Ex-Offender and the "Monster" Myth.**—A number of authorities have asserted that prisons invariably have a deleterious effect on all who are incarcerated. Using data collected as part of an extensive ongoing study of 1,345 consecutive admissions to the Federal Correctional Institution in Tallahassee, Florida, this study examined this assertion empirically through inmate interviews, comparison of personality tests administered on entering and leaving prison, and post-release recidivism data. Authors Edwin I. Megargee and Barbara Cadow conclude that the popular impression that all inmates emerge from all prisons significantly more disturbed,

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bitter and inclined toward criminal behavior is false.

**The Criminal Personality or Lombroso Revisited.**—This article contends that a relatively recent book, *The Criminal Personality*, is not genuine research, but merely the unsupported views of a psychiatrist (who died several years ago) and a clinical psychologist. O.J. Keller attacks the basic concept of this work, calls attention to numerous contradictions, and criticizes the research as failing to meet the most elementary standards.

**The Salient Factor Score: A Nontechnical Overview.**—The "Salient Factor Score," a predictive device used by the U.S. Parole Commission as an aid in assessing a parole applicant's likelihood of recidivism, is described by Commission researchers, Peter B. Hoffman and Sheldon Adelberg. The relationship found between the predictive score and favorable/unfavorable outcome is shown for two large random samples of released Federal prisoners, totaling 4,646 cases. Use of the "Salient Factor Score" as part of the system of decision guidelines established by the Parole Commission and the relationship of the guideline system to the exercise of discretion in decisionmaking are then discussed.

**Health and High Density Confinement in Jails and Prisons.**—High density confinement in correctional institutions has been the focus of much attention during the past decade, according to Bailus Walker, Jr., and Theodore J. Gordon. This concern has prompted several agencies and organizations to revise old standards or develop new criteria for minimizing the noxious influence of high-density confinement on jail and prison inmates. The application of these criteria and standards has raised at least one fundamental

question: Upon what bases are the standards established? Although there are many possible bases for the establishment of population-density criteria, the extrapolation of available data generated by epidemiological evaluations and medical observations suggests rational bases for controlling population density in jails and prisons.

**The Private Sector in Corrections: Contracting Probation Services from Community Organizations.**—After examination of current practices regarding delivery of correctional services, via purchase-of-services contracts with private sector agencies, an attempt was made to assess one of the Nation's largest private probation programs—Florida's Salvation Army Misdemeanor Probation Program (SAMP). Following analysis of SAMP's fee-financing, structure and clientele, a preliminary assessment of the program's revocation rate (6.3 percent) and cost-effectiveness was undertaken. Author Charles A. Lindquist states that while further evaluation is needed, it was tentatively concluded that several aspects of the program were effective.

**Social Work and Criminal Justice: New Dimensions in Practice.**—One to one counseling of offenders has been devalued partly on the basis of effectiveness studies and partly on the basis of counseling methods which assumed that the primary goal of treatment was the modification of the offender's personality. This article by Gloria Cunningham questions both the effectiveness of effectiveness studies and the need to define "treatment" in such narrow terms. The role of the probation officer is re-examined in the light of evolving views of social work intervention which validate the importance of the broader range of helping services typical of probation supervision.

All the articles appearing in this magazine are regarded as appropriate expressions of ideas worthy of thought but their publication is not to be taken as an endorsement by the editors or the federal probation office of the views set forth. The editors may or may not agree with the articles appearing in the magazine, but believe them in any case to be deserving of consideration.

# Health and High Density Confinement in Jails and Prisons

BY BAILUS WALKER, JR., PH.D., M.P.H., AND THEODORE GORDON\*

HIGH DENSITY confinement in jails and prisons has been the focus of a plethora of lawsuits, debates and reports during the past decade. In fact, overcrowding in several prison systems has been found by the courts to constitute cruel and unusual punishment in violation of the Constitution of the United States.

In this direction, the United States District Court for the Middle District of Alabama, in *Adams v. Mathis*, held that:

... forcing inmates to live in too close proximity to other inmates is psychologically debilitating and leads to an increase in tensions and problems. This overcrowding also poses a protection problem.<sup>1</sup>

More recently Mr. Justice Marshall wrote in *Bell v. Wolfish*:

Incarceration of itself clearly represents a profound infringement of liberty and each additional imposition increases the severity of the initial deprivation.<sup>2</sup>

These and other concerns have prompted several agencies and organizations to develop or revise standards and criteria for minimizing the noxious influence of high-density confinement in the Nation's jails and prisons. Among the first to act was the American Public Health Association which recommends that: "Single prison cells shall provide a minimum of 60 sq. ft. per person, 8 ft. ceiling and 500 cu. ft. per person and where dormitories are permitted, a minimum of 75 sq. ft., 10 ft. ceiling, and 600 cu. ft. per person."<sup>3</sup>

The draft of the U.S. Department of Justice *Federal Standards for Corrections* specifies that "Dormitory living units house no more inmates than can be safely and effectively supervised in a dormitory setting with a minimum of 60 square feet of floor space per inmate (excluding activity space)."<sup>4</sup>

On the other hand the National Sheriff's Association states that single occupancy detention rooms should average 70 to 80 sq. ft. in area.<sup>5</sup> This recommendation is supported by the Ameri-

can Correctional Association (ACA) in its *Manual of Standards for Adult Correctional Institutions*.

The ACA Standards require that cells designed for single-occupancy house only one person and that cells have at least 60 sq. ft. except the minimum increases to 80 sq. ft. if a person is held in the cell for more than 10 hours a day.<sup>6,7</sup>

Such "space allocations" evolved from a clear recognition that correctional institutions must satisfy the basic human needs for a safe and wholesome environment—one in which the rehabilitation process can be enhanced. They—the standards—are heavily dependent upon the "informed judgment" of professionals who have considered and weighed the available data and the views of interested advocacy groups.

Although a numerical value (i.e., 60 sq. ft.) was ultimately decided upon, the nonabsolute nature of the data upon which it is based suggests that such value must not be taken as an absolute boundary between positively safe and positively unsafe. For example, if the safe value is 60 sq. ft. per person this cannot be interpreted as meaning that 59 sq. ft. is totally unsafe or that 61 sq. ft. is always safer. At best such values represent benchmarks or guidelines for preventive or corrective action.

But the voluntary or mandatory (by court order) application of these standards has generated an extensive and acrimonious debate among students of correctional administration, legal scholars, medical practitioners and environmental health specialists. The central question of debate is: Upon what bases are the standards established?

There are many possible bases for the establishment of population-density criteria and the setting of minimum space allocation standards.

<sup>1</sup> *Adams v. Mathis*, Civil Action No. 74-70-S. U.S. District Court for the Middle District of Alabama, February 28, 1978.

<sup>2</sup> *Bell v. Wolfish*, 47 U.S. Law Week 4507, May 14, 1979.

<sup>3</sup> *Standards for Health Services in Correctional Institutions*, American Public Health Association, Washington, D.C., 1976.

<sup>4</sup> *Federal Standards for Corrections (Draft)*, United States Department of Justice, Washington, D.C. June 1978.

<sup>5</sup> *Jail Architecture*, National Sheriff's Association, Washington, D.C., 1976.

<sup>6</sup> *Manual of Standards for Adult Correctional Institutions*, American Correctional Association, Rockville, Maryland, August 1977.

<sup>7</sup> *Accreditation Blueprint for Corrections*, American Correctional Association, Rockville, Maryland, July 1977.

\* Dr. Walker is director, Health Standards Programs, Occupational Safety and Health Administration, U.S. Department of Labor. Mr. Gordon is chief of the Institutional Hygiene Division, Environmental Health Administration, Government of the District of Columbia.

These include (a) epidemiological studies of populations in various settings with different amounts and arrangements of space per person. Such studies can provide statistical associations between density and reported effects; (b) studies of groups of animals exposed intentionally to controlled conditions in the laboratory; (c) extrapolation of available data generated by epidemiological evaluations and medical observations based on similarity of conditions.

It is the latter basis which is the focus of this article, the objective of which is to review selected epidemiological evaluations and medical observations of infectious disease transmission which by extrapolation, suggest a rational basis for controlling population density in penal and correctional institutions.

Although the social and psychological consequences of residential crowding are of concern in current efforts to improve conditions in jails and prisons, they will not be reviewed. The reader is referred to reviews by Fischer and co-workers,<sup>8</sup> Mitchell,<sup>9</sup> Moos,<sup>10</sup> and Stokols.<sup>11</sup>

#### Historical Perspective

The need for adequate space for jail and prison inmates is not a new concern. As early as 1790, concerns about adequate space per inmate were inextricably tied to the ideas about correctional philosophy and prison management proposed by the Pennsylvania Prison Society and crystallized

<sup>8</sup> Fischer, C.S., Baldassarre, M., and Ofshe, R.J. "Crowding Studies and Urban Life: A Critical Review." *Journal of the American Institute of Planners* 4:406-418, November 1975.  
<sup>9</sup> Mitchell, R.B. "Cultural and Health Influences on Building, Housing and Community Standards: Cost Implication of Human Habitat." *Human Ecology* 4:297-325, October 1976.  
<sup>10</sup> Moos, R.H. *The Human Context*. Joseph Wiley and Sons, New York, 1976.  
<sup>11</sup> Stokols, D. "The Experience of Crowding in Primary and Secondary Environments." *Human Ecology* 8:49-81, 1976.  
<sup>12</sup> *Handbook of Correctional Institution Design and Construction*. U.S. Bureau of Prisons, Washington, D.C. 1949.

TABLE 1.—Influenza by Organization and Space Allowance, and by Older and Newer Organizations Camp Humphreys, Virginia, World War I

Organization	Floor space per man	Sick with influenza	Organization	Floor space per man	Sick with influenza
Older Organizations	Sq feet	Percent	Newer Organizations (sapper regiments)	Sq feet	Percent
7th Regiment	45	26.7	217th Regiment	55	24.5
3d Regiment	46	28.6	218th Regiment	59	20.8
5th Regiment	47	16.0	219th Regiment	68	19.3
2d Regiment	50	9.1	220th Regiment	103	13.6
Engineer OIS	70	8.8	215th Regiment	114	9.3
4th Regiment	75	7.4			
6th Regiment	78.5	2.5			

Source: Reference 6.

into what became known as "the Pennsylvania System."

The physical plant and architectural pattern, within which these concerns were first expressed, was the Eastern Penitentiary of Pennsylvania, built in 1829 by John Haviland, an English-born Philadelphia architect who can be rightfully called the "father of prison architecture." He later planned state prisons in New Jersey, Rhode Island, Missouri and the original Tombs or City Prison of New York. The cells of these institutions, never originally occupied by more than one person, were large, 11 ft. 9 in. long, 7 ft. 6 in. wide, and 16 ft. high; the unusual size was felt to be necessary to enable inmates to have sufficient space "to live, sleep and spend their day."

The objective sought in confinement in one-man cells was not punitive. Rather the theory of the Pennsylvania reformers was that society would be best served and possible reformation of the criminal most surely promoted by preventing any close association of one criminal with another. It was hoped that adequate space would provide an environment suitable for inmates to ponder or reflect upon "the evils of their former ways and induce them to abandon their lawless conduct when finally released."<sup>12</sup>

#### Medical-Epidemiological Evaluations

Military epidemiological studies in which the population at risk can be clearly defined in terms of their numbers, their exact age and residential histories are, when properly qualified, appropriate references for assessing the health-density-confinement relationship.

Thus, one of the earliest authoritative medical observations was made by Brewer at Camp

Humphreys, Virginia, during an influenza outbreak in September and October 1918. The organizations reported on were divided into two groups—those that existed for some time and those newly formed, with the assumption that the newer formed units contained a large number of susceptibles (new recruits).<sup>13</sup> Table 1 from Brewer's study shows the striking inverse correlation between the amount of floor space per man and the percentages of infection in comparable organizations.

More recent health and medical literature clearly indicates that the principles involved in the disease transmission-crowding relationship have not changed substantially since the earlier activities of the Pennsylvania Prison Society and Brewer's epidemiological observations and evaluations in 1918.

For example in 1942, in response to a decision to decrease the space allowance for military personnel, an investigation similar to Brewer's was made by the Army Epidemiological Board, composed of a group of widely respected national and international experts in medicine, preventive medicine, epidemiology and public health.

That Board further confirmed the need to restrict crowding to the level produced by the allotment of 60 sq. ft. per person. In 1951 another epidemiological and medical evaluation by the Armed Forces Commission on Acute Respiratory Disease demonstrated that the acquisition of streptococci (a bacterial infection) is related to the proximity of beds (as shown in table 2).

TABLE 2.—Rates of Acquisition of Streptococci According to Distance of Bed from the Nearest Carrier

Distance of bed from nearest carrier	Rates of acquisition by week
Less than 10 ft.	6.7
10 to 20 ft.	5.1
20 to 30 ft.	5.1
30 to 40 ft.	3.9
More than 40 ft.	2.8

The following excerpts from a report of the Board to the Secretary of the Army is corroborative:

... In general terms it can be positively stated that the greater the crowding the greater is the risk of

<sup>13</sup> Brewer, I.W. "Report of Epidemic of Spanish Influenza which Occurred at Camp A.A. Humphreys, Virginia during September and October." *The Journal of Laboratory and Clinical Medicine* 4:87-111, 1918.

<sup>14</sup> Report to the Secretary of the Army Concerning Medical Implications of Space Allowance in Troop Housing. Washington, D.C. April 14, 1952.

<sup>15</sup> Annual Report, Commission on Acute Respiratory Disease, 1951-52. Armed Forces Epidemiological Board, Washington, D.C.

<sup>16</sup> Meningitis, an infection of the membranes (the meninges) that cover and protect the brain and spinal cord.

an epidemic of serious proportions. The order reducing the minimum floor space per man in barracks from sixty (60) square feet to forty (40) square feet, while a military necessity, is in an undesirable direction from the standpoint of a maintenance of health. The effect of this provision not only results in overcrowding in mess halls, wash rooms, latrines, post exchanges, etc., and overloads all existing facilities.

The Board indorses the action of The Surgeon General in reiterating the desirability of restricting crowding to that level produced by the allotment of sixty (60) square feet per man.<sup>14</sup>

Again in 1952 the Armed Forces Epidemiological Control Board (successor to the Army Epidemiological Board) was asked to review its position on the space allowance of 60 sq. ft. per person. The views of the Board were stated by Dr. Colin MacLeod of New York University Medical School and president of the Board:

The recommendations of the Epidemiological Board in January 1943 called attention strongly to the danger of crowding as an important factor in increasing the spread of diseases transmitted by way of the respiratory tract. The statements are as true today as when they were made in 1943. It is strongly urged that the principles laid down then be followed in any plan for housing of our troops.

While the dangers are greatest with respect to the respiratory diseases, it should also be emphasized that the overloading of general facilities incident to crowding in barracks also increases the danger of spread of diseases transmitted by other routes, especially the gastro-intestinal diseases.<sup>15</sup>

Meningococci<sup>16</sup> infections are found in all parts of the world and reach their greatest prevalence during winter and early spring. In spite of the widespread distribution of the organisms, clinical disease is a rare occurrence in the civil population, the annual illness rate rarely rising above 2 or 3 per 100,000 even during periods of high prevalence. In crowded and confined populations such as military barracks and prisons, the attack rate may be many times higher and the disease may constitute a serious public health problem.

Transmission of the meningococcus appears to be always through direct respiratory (nose and mouth) spread of infected droplets. It is therefore favored by crowded living conditions which permit nose-mouth secretions of one individual to reach the nose and mouth of another. The fragility of this disease-producing organism outside the human body makes it unlikely that sources other than humans are ever significant in its spread.

Medical practitioners point out that isolation of patients is a desirable precaution but it can play only an insignificant role in the prevention of the spread of the disease. Reducing the fre-

quency of meningococcal meningitis therefore necessitates decreasing the frequency with which the causative agent is passed from one individual to another. In the past, efforts to achieve this have been practiced only in limited population groups of institutions and military establishments. Principal dependence was placed upon reducing the amount of crowding in living and sleeping quarters.

Evidence supporting the effectiveness of this approach is provided by Millar and Alexander,<sup>17</sup> who reported an epidemic of meningococcal disease at the U.S. Naval Training Center, San Diego, California, January to June 1963, which was enhanced by overcrowded barracks. The available space in the residential units was about 25 sq. ft. per sailor which was less than 1/2 the minimum amount of space prescribed by the Bureau of Medicine and Surgery of the U.S. Navy. No cases of the disease were reported after the Navy Command reduced the population density to provide 55 to 60 sq. ft. per person.

Turning to studies specific for jails and prisons, we cite first the study of King and Geis.<sup>18</sup> They showed the influence of crowding on the transmission of tuberculosis on a tier of the Cook County (Illinois) Jail, which housed 107 inmates in an area of 1,980 sq. ft.

Following diagnosis of advanced tuberculosis in an inmate in the jail, tuberculin testing of other inmates to assess the degree of transmission of this destructive disease, frequently seen in the lungs, found 24 percent of the exposed inmates tuberculin positive.

Subsequent testing 3 months later of inmates on the same tier demonstrated a 71 percent conversion (negative to positive) rate; evidence of exposure of the tier population to the index patient of tuberculosis.

Earlier epidemiological and medical observations of tuberculosis in a New York correctional institution revealed conditions very similar to those reported by King and Geis and prompted the physician-researchers to conclude:

The population of a large city prison is an ideal seed bed for tuberculosis. The prison inmates live under continuous mental stress, frequently in overcrowded

and poorly ventilated quarters in close contact with each other.<sup>19</sup>

An increased rate of tuberculosis after incarceration in an overcrowded (less than 60 sq. ft. per person) Arkansas prison has also been documented.<sup>20</sup>

Another contribution to the crowding-health effects data base is the study by Moser and co-workers<sup>21</sup> of the Center for Disease Control, U.S. Department of Health, Education and Welfare. They investigated, in 1977, an outbreak of influenza aboard a commercial airliner which, because of an engine failure, was delayed during a takeoff attempt. The 54 passengers who developed the disease had been placed in very crowded circumstances with an influenza-stricken patient. Within 72 hours 72 percent of the passengers became ill with symptoms of cough, headache, fatigue and sore throat, strongly suggesting that the common sources of the epidemic was the one passenger who probably exposed other passengers to mouth and nose discharges (aerosols of droplets) which contained an influenza virus.

The relevance of this work to jails and prisons is that in the disabled airliner the environmental conditions were similar to those which the courts have found in many correctional institutions: overcrowded, confined, stagnant and dry airspace which increases the exposure of persons to the potentially hazardous discharges of others.

#### Incidence of Disease

While the incidence and prevalence of infectious diseases in American communities are not as high as in earlier periods, the American Medical Association (AMA) has found that there is an extremely high incidence of communicable diseases among inmates in United States correctional institutions. An examination of 641 prisoners showed that 48 percent had some type of infectious disease transmissible to other inmates. This prevalence rate is disturbing to the AMA because of the overcrowding so common in many jails and prisons.

Derro<sup>22</sup> collected data which support the AMA's point of view. He conducted an extensive evaluation of health problems in an urban city-county workhouse and found that abdominal pains, a history of blood in the stool (dysentery) and diarrhea accounted for the high rank order of digestive disorders (61.9%). Sleep disturbance (79.3%) and upper and lower respiratory tract infections (71.1%) were the most common dis-

orders. Goldsmith's<sup>23</sup> study of health problems in the overcrowded Orleans Parish Prison also corroborates the findings of the AMA.

The authors' studies of several common-vehicle epidemics in jails and prisons indicate that infectious diseases (diarrhea, dysentery, etc.) are often traceable to overtaxed and insanitary food service and/or plumbing defects caused in part by the burden placed on toilet and bathroom fixtures when the institution exceeds the capacity for which it was designed.

Excessive crowding not only impacts on the plumbing system and toilet facilities but it also reduces the effectiveness of the ventilation system—air movement, temperature regulation, removal of contaminants and body odors; all of which can adversely affect the health of the inmates. For example, lack of adequate air movement exerts an unfavorable influence on the general metabolism and on the thermal state of the body, often causing a sensation of "oppression," heat discomfort or excessive fatigue.<sup>24</sup>

#### Disease Transmission

The transmission of airborne disease-producing bacteria and viruses from person to person is an indoor phenomenon being limited to confined atmospheres such as in jails or prison cells in which the concentration of infectious organisms can reach levels hazardous to susceptible people sharing the same air supply. The infectious particles discharged into the air by coughing, sneezing, spitting, singing, or even talking can impinge on the skin of a recipient at close range and can be deposited in the upper respiratory tract and lungs, if inhaled. The closer the range the greater the probability of the organism being deposited on another person—increasing the space between individuals decreases that probability.<sup>25</sup>

It is clear that the spread of infectious diseases does not respect boundaries of race, class and definitions of pre- or posttrial detainees or similar classifications in jails and prisons. Immunity to disease can only be developed by contact with the causative organism of the disease or by artificial immunization. There are no immunizations against many of the diseases spread through the gastrointestinal and respiratory tracts. Inmates

committed to penal institutions may be immune to predominant species of disease-producing organisms in their own families or community but not necessarily to those from other families or communities.

Each person admitted to a jail or prison is a possible carrier of a potentially hazardous bacteria or virus to which his cell mate(s) and the correctional officers may be susceptible. The bringing together of persons from many communities, and confining them to crowded areas, greatly increases the probability of the spread and actual outbreaks of diseases.

#### Conclusion

It should not be inferred that simple data can be adduced to support specifically 60 versus 55 or 65 sq. ft. per person, in terms of incontrovertible proof. The matter rests with medical judgment and epidemiological evaluations, which often are time consuming, slow and contentious.

Moreover, there are a multitude of determinants of physical and mental diseases. In addition to the environmental determinants—living conditions, crowding and hygiene—the individual factors such as age, sex, and physiological state (e.g., condition of stress and nutritional status) play an important role in the development of disease.

As Stewart has written, "If two susceptible subjects are exposed to equal doses of the same germ, and one develops infection while the other does not, the factor governing the development of the infection clearly lies outside the germ."<sup>26</sup>

But there are data available from which it can be inferred that crowding people into small areas where they are forced to breathe and too often to cough into each other's face favors the transmission of disease-producing organisms because it increases the likelihood of the organisms finding a new person and reduces the distance they—the germs—must travel between persons.

Moreover, when a cell of 60 sq. ft. or less must serve as "home" for more than one person, where feces and urine must be discharged in each other's presence, where a reasonable degree of privacy is lacking and when a person cannot vacate that environment, even for a short period, it is difficult to believe that the mind and emotion or the physical health go unscathed.

Perhaps the U.S. Court of Appeals for the District of Columbia summarized it best in a decision on another environmental health issue: The Court wrote:

<sup>17</sup> Millar, J.W. and Alexander, C.E. "Epidemiology of Meningococcal Disease." *Proceedings of the First Symposium on Aerobiology*. Berkeley, California, 1963.

<sup>18</sup> King, L. and Geis, G. "Tuberculosis Transmission in a Large Urban Jail." *Journal of the American Medical Association* 237:790-793, February 21, 1978.

<sup>19</sup> *Ibid.*

<sup>20</sup> Moser, M.R., et al. "An Outbreak of Influenza Aboard a Commercial Airliner." *American Journal of Epidemiology* 1:1-6, July 1979.

<sup>21</sup> Derro, R.A. "Health Problems in a City-County Workhouse." *Public Health Reports*, Vol. 39, No. 4, July-August 1978.

<sup>22</sup> Goldsmith, S.B. "Jailhouse Medicine—Travesty of Justice." *Health Services Reports* 87:767-774, November 1972.

<sup>23</sup> "Physiological Basis of Health Standards for Dwellings." *World Health Organization Technical Report*, Series 225, 1961.

<sup>24</sup> Riley, R.L. "Airborne Infection." *The American Journal of Medicine* 57:466-476, September 1974.

<sup>25</sup> Stewart, G.T. "Limitations of the Germ Theory." *The Lancet* 1:1977-2081, 1968.

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FEDERAL PROBATION

Undoubtedly, certainty is the scientific ideal—to the extent that even science can be certain of its truth. But certainty in the complexities of environmental

<sup>27</sup> Eighth Annual Report of the Council on Environmental Quality, Washington, D.C. December 1977.

medicine may be achievable only after the fact, when scientists have the opportunity for leisurely and isolated scrutiny of an entire mechanism. Awaiting certainty will often allow for only reactive, not preventive regulation.<sup>27</sup>

**END**