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The need to improve health care in prisons

ABSTRACT

OBJECTIVE: To analyze physical structure, working conditions of health professionals and outline of the procedures established in prisons.

METHODS: We analyzed 34 provisional detention centers and 69 male and six female prison units in the state of Sao Paulo, Southeastern Brazil, in 2009. A self-applied instrument was developed to collect quantitative data on the characteristics of health care structure, equipment and personnel in prisons. Analysis of variance (ANOVA) or equivalent non-parametric tests and Chi-square or Fisher's tests were used to compare categorical and continuous variables, respectively, between the groups.

RESULTS: The main problems were delays in the results of laboratory tests and imaging. With respect to the teams, it was observed that a large majority were in conditions close to those proposed by the Bipartite Commission 2013 but without improvement being reflected in the indicators. With respect to the process, more than 60.0% of prisons located in small towns do not have the structural conditions to ensure secondary or tertiary health care for the continuity of treatment.

CONCLUSIONS: This profile of prisons in the country can be used for planning and monitoring future actions for the continuous improvement of healthcare processes.

DESCRIPTORS: Prisons, organization & administration. Health Programs and Plans. Patient Care Team. Occupational Risks.

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INTRODUCTION

Planning and executing health care programs for the prison population is a global concern.⁹ This population has high levels of mental disorders, chronic disease and drug use, above those of their populations of origin.⁹ What is more, any environment where the population is concentrated is conducive to aggravating pre-existing health conditions, as well as to the development of new health problems, such as sexually transmitted or airborne diseases. The increasing prison population increases this difficult issue, as observed in various countries. In Brazil, this has been of concern for over a decade.^a

Even when the problem has been recognized, it is difficult to deal with, as implementing a care program for detainees is faced with countless obstacles: the variety of health problems according to characteristics of the prison population; forecast and actual capacity for health care; characteristics of the health care teams concerning availability and training; and the prison unit's relationship with the Brazilian Unified Health System (SUS) hierarchy.

In 2009, the population confined in the penitentiary system in the Ribeirao Preto region of Sao Paulo state, Southeastern Brazil, was estimated at 4,698 individuals in six prison units (PU), three of which were in the municipality of Ribeirao Preto (one female, one male and one male remand center). These units had occupation rates between 120.0% and 225.0% and insufficient professionals to care for the imprisoned population, producing irregular interventions which performed poorly at meeting users' needs, emergency care and elevated need to leave the prison in order to use health care services offered outside the prison.

The overload of referrals for appointments outside of the PU produced more requests for escorts without being able to meet all demands. This difficulty triggered a dialogue between PU representatives, mediated by the Health Care Coordinator of the Prison Service Administration Secretariat, and the *Hospital das Clínicas* of the Ribeirao Preto Medical School of the *Universidade de São Paulo* (HC-FMRP-USP). The initial intention was to facilitate appointments for prisoners referred to this institution so as to reduce the risk of prolonged absence escorting such prisoners leaving the general prison population unguarded. From this initiative, the need was identified to map the physical structure, the work processes of the health care professionals and general health care conditions, as well as the profile of the inmates of the PU in the Ribeirao Preto region, which was later increased to the whole state of Sao Paulo.

The aim of this study was to analyze the physical structure, working conditions for health care professionals and the outline of the processes established in PU in the state of Sao Paulo.

METHODS

The instrument developed to collect data on the structural characteristics and those of the professionals was based on the work by Marshall et al⁶ and of the World Health Organization,¹ to facilitate comparison with other studies. It is a self-application questionnaire, with quantitative data, to be completed by the UP administrators, aiming for external generalization and enabling regular re-application to monitor future processes.

This questionnaire was applied by the researchers during on-site visits to the six PU in the Ribeirao Preto/Serra Azul complex in a pilot project and the instrument was improved to enable it to be completed by managers responsible for the health sector of PU in the state of Sao Paulo.

The study involved 139 PU in the state of Sao Paulo, but the analysis was restricted to 34 remand centers (RC) and 69 male (PU-MASC) and six female (PU-FEM) PU, as the other institutions had different prison population characteristics. To present the data, the analysis was conducted using these groups, despite the reduced number of PU-FEM for absolute comparison. Sensitivity analysis was performed, excluding the PU-FEM when there was much discrepancy in the values, without altering the findings. The division into these groups aimed to capture the expected difference in behavior between the type of prison unit and gender.

Data analysis was conducted using the Stata version 10 program and the ArcGIS program version 9 to analyze geo-distribution. The project was approved by the Research Ethics Committee of the HC-FMRP-USP (CAAE 2731.0.000.004-09), respecting all the security needs recommended by the state of Sao Paulo Prison Service Administration Secretariat. As the data were administrative in nature, need for consent form was waived.

RESULTS

Regarding the structural conditions of health care, all units reported having their own location, with medical records and the capacity to request laboratory tests and imaging. As for the medical reports, all detainees had a non-computerized clinical record, transferred with them if they moved prison unit. Initiatives to computerize

^a Ferreira MCF, coordenador. Plano nacional de saúde no sistema penitenciário. Brasília (DF): Ministério da Saúde; 2004.

data, with the objective of facilitating monitoring treatment processes were observed in between 21.0% and 35.0% of units. However, these systems varied and, being local initiatives, did not inter-connect the various PU dispersed throughout the state of Sao Paulo.

Regarding complementary tests, all interviewees reported that laboratory tests were collected in the unit itself and that there was a delay in receiving results. With regards to imaging tests, the more complex the test, the more difficult it is to have it done (9.0% regarding radiography and 71.0% in cases of tomography) and there is also a delay in obtaining results. Available medication are provided through the *Dose Certa*^b program, but around 60.0% of units reported a lack of medication, principally anti-inflammatories and benzodiazepines. Table 1 shows the characteristics of the health care professionals involved in providing care. Table 2 shows the prevalence of detainees' health care needs and eventual capacity to meet these needs. In Table 3 can be found the interconnection of internal conditions of care with the SUS hierarchy. The Figure illustrates the prison population in the state of Sao Paulo according to municipality, both in absolute values and relative to the population of the municipality housing it.

DISCUSSION

The survey enabled observed that all PU had structural conditions relatively adequate for the clinical care of the detainees, with conditions to perform laboratory tests and request imaging tests, although with delays in results being received.

Regarding human resources, the interviewees reported that there were teams of professionals available, but the care process was failing, due to the lack of complete care teams, and especially due to the difficulty in including the prison population into SUS hierarchized care networks. This reality contradicts the model advocated in Inter-Ministerial Ordinance 1777/03 which established the National Health Care Plan in the Penitentiary System, aiming to provide integrated health care to the prison population.^c An ordinance recently approved by the Bipartite Commission defined that each PU should have a team containing, at least, one doctor (20h), a dental surgeon (20h), a nurse (30h) and two nursing assistants (30h) responsible for between 500 and 1,200 detainees.^d This ordinance is in accordance with the National Health Care Plan in the penitentiary system, providing for health care teams with the same formation as those of the Family Health Care Strategy (ESF) able to resolve primary level health care problems, with high ability to meet

inmates' needs, thus decreasing referrals to other levels of the system. However, referral to medium and high complexity services, including emergencies, should be guaranteed when necessary.

In Table 1, the recommendations of the Bipartite Commission would already be met in a reasonable proportion of professionals per prison unit. However, in the on-site observations, it was observed that although there was often a professional they did not work all of their hours and their function was more that of providing emergency care than structuring a health care service, based on actions promoting, preventing, curing and treating the most common health problems.^b

This proposal argues that the team provides care following the same logic as the ESF, with basic attributes including planning actions, inter-disciplinary team work and prioritizing health surveillance and promotion actions, such as vaccination, these being easily performed, low cost primary care actions, but which are not achieved in 100% of PU, as seen in Table 2.

PU are avoided by health care professionals, who consider them to be highly dangerous. This means that, although there is a contingent of professionals provided, this is frequently incomplete and replacement is time consuming and difficult. Health care professionals' working conditions within PU should also be evaluated. The needs for medico-legal documentation, informed access to the network of service providers, safety, counter-referrals and financial incentives are working conditions which could motivate the professional.

One possibility for this issue could be encouraging and training health care professionals with a profile more appropriate to this reality. In other countries, family doctors have worked in PU and specialized in medicine in prisons, with a differentiated workload, and with specific training in the health problems most prevalent in PU.⁵

As for addressing nosological conditions in PU, we observed that high inmate turnover in RC made it difficult to carry out actions of preventing, promoting and treating the most prevalent conditions. In 2009, turnover was 120.0% according to prison unit administrators, and it was impossible to maintain any up-to-date health information without a computerized system to communicate with the PU, as well as to apply already established protocols. Another issue which would enable more of the prison population's health care problems to be resolved is implementing clinical and regulatory protocols which are already available in public health care services,

^b Dose Certa is a Basic Pharmaceutical Assistance Program from the São Paulo State Health Care Secretariat, providing free medication to municipalities in the state. Available from: <http://www.saopaulo.sp.gov.br/acoedegoverno/saude/#dose-certa>

^c Ministério da Saúde. Plano nacional de saúde no sistema penitenciário. Brasília (DF); 2005.

^d São Paulo. Deliberação CIB – 62 de 6 de setembro de 2012. Diário Oficial Estado Sao Paulo. 07 Set 2012; Seção1:34.

Table 1. Distribution of professionals according to type of prison unit. Sao Paulo, SP, Southeastern Brazil, 2009.

Profession	N	RC (34)		PU MASC (69)		PU FEM (6)	
		n ^c	%/IQ ^d	n	%/IQ	n	%/IQ
Doctor	At least 1 professional ^a	21	61.7	54	78.2	5	83.3
	n/1,000 inmates ^b	0.8	0;1.1	1	0.6;2.1	1.1	0.7;2.4
Dental surgeon	At least 1 professional	28	82.3	58	84.0	5	83.3
	n/1,000 inmates	1	0.6;1.6	0.9	0.7;1.7	1.1	0.7;2.4
Psychiatrist	At least 1 professional	12	35.3	36	52.1	6	100
	n/1,000 inmates	0	0;0.6	0	0;0.8	1.1	0.3;1.2
Nurse	At least 1 professional	23	67.6	47	68.1	4	66.6
	n/1,000 inmates	0.8	0;1.5	1.01	0;2.4	0.9	0;2.5
Nursing assistant	At least 1 professional	31	91.2	62	89.8	5	83.3
	n/1,000 inmates	3.3	2.7;5.0	3.5	2.5;4.9	7.4	4.4;11.1
Psychologist	At least 1 professional	22	64.7	55	79.7	4	66.6
	n/1,000 inmates	0.71	0;1.6	1.4	0.7;2.4	1.8	0;2.6
Social worker	At least 1 professional	25	73.5	60	86.9	5	83.3
	n/1,000 inmates	0.9	0.5;1.6	1.6	0.8;2.7	2.9	1.8;6.2

RC: remand center; PU: prison unit; MASC: male; FEM: female

^a Total number of units with at least one professional available

^b n/1,000 inmates = number of professionals divided by the prison population in 2009 and multiplied by one thousand.

^c n = absolute number of parameters a and b.

^d %/IQ = values referring to at least one professional available expressed as a percentage, while values referring to N/1,000 inmates are expressed as interquartile range.

increasing meeting users' needs at an accessible price and with medications available in the PU itself.

Some conditions considered paramount in all prison complexes in the world, such as mental disorders and alcohol and drug use, are admittedly not identified or only addressed in complex situations. It is probable that this figure may be underestimated as the administrators are reluctant to admit to a situation of which they are not in control, leading to the suspicion that the problem is even greater than it appears. The care required to treat and prevent these problems calls for a multi-professional team including psychologists, social workers, occupational therapists and family doctors. Psychologists and social workers are in the majority and, from what was seen in on-site visits, those who were actually responsible for the minimal functioning that was observed. Were these professionals not occupied with different tasks, they would be freer to help identify problems of this nature.

Another important indicator, of great significance to the functioning of the health care services, refers to the distribution of PU in the state of Sao Paulo and to the proportional representation in relation to the municipalities housing them. For example, it was observed that the prison population represented 40.0% or more of the total population of Serra Azul. Considering that the municipality is responsible for primary health care and that installation of secondary and tertiary health care resources is in direct proportion to the resident

population, it is no wonder that the most commonly related problem was continuity in the care process in secondary and tertiary instances, or in emergencies, as these are not available in many of these municipalities. Thus, it would be important for the implementation policy in PU to take into account the capacity of the Brazilian Unified Health System (SUS) network installed in the municipality, and for this to be integrated into the SUS reference system. In the example cited above, every time the prison population in Serra Azul required secondary or tertiary care they had to be transferred to the municipality of Ribeirao Preto. In addition to requiring an escort, it should also be borne in mind that the prison population also implies an increase in the "transient population" of relatives accompanying inmates in their transfers and who may also need to make use of the health care system.

Regarding the prevalence of chronic disease, there are few studies on such diseases within the PU environment, making comparisons with other services difficult. As this is an ecological study, in which the object of study were the PU rather than individuals, it is difficult to study the effectiveness of actions. However, considering the apparent disorganization of the work process and integration with other levels of the health care system, it is to be expected that users' needs are poorly met, as well as their being a large suppressed demand.⁴

It was observed that tuberculosis is still a problem in PU, despite treatment rates reaching almost 100% with the

Table 2. Distribution of categories of health care according to the type of prison facility. Sao Paulo, SP, Southeastern Brazil, 2009.

Category	RC (34)		PU MASC (69)		PU FEM (6)	
	n	%/IQ ^a	n	%/IQ	n	%/IQ
A – Minor illness (e.g., headache, cold, skin problems)						
Not covered	1	3	1	1.5	0	0
Partially	9	27.2	18	26.8	0	0
Totally	23	69.7	48	71.6	6	100
B – Other diseases (e.g., cardiovascular disease, control of risk factors, infections)						
Sexually transmitted diseases	1.07	0.62;1.85	1.41	0.9;1.9	12.9	3.7;34.4
Leprosy	0	0;0.7	0	0;0.07	0	0;0
Tuberculosis	0.64	0.34;1.1	0.9	0.89;1.62	0.15	0.12;0.37
HAS	1.2	0.09;2.70	2.6	1.4;4.1	8.4	7.5;16.0
DM	0.51	0.21;0.87	0.7	0.47;1.07	1.37	0.86;2.25
Other	0	0;0.16	0	0;0.33	0.86	0.25;1.64
C - Obstetrics and gynecology						
Not covered					0	0
Partially					3	50.0
Totally					3	50.0
D – Mental disorders						
Not covered	2	5.9	4	5.8	1	16.6
Partially	18	52.9	32	45.4	3	50.0
Totally	14	41.2	33	47.8	2	33.3
E – Alcohol and drug use						
Alcohol						
Alcohol prohibited – no problem exists	11	61.1	39	83.0	2	66.6
Only a problem upon admission	15	68.2	12	60.0	3	75.0
Constant problem	1	2.9	8	11.6	0	0
Assessed on admission	22	66.6	34	50.0	5	83.3
Treatment offered	10	31.2	15	23.1	2	40.0
Drugs						
Totally	4	11.7	2	2.9	1	16.6
Partially	15	44.1	22	31.9	3	50.0
Serious cases	13	38.2	41	59.4	1	16.6
NR	2	5.9	4	5.8	1	16.6
Assessed on admission	25	73.5	46	67.6	5	83.3
Treatment offered	18	56.2	32	49.2	3	60.0
F – Health promotion						
Assessed on admission	31	96.9	61	93.8	5	83.3
Type of evaluation						
Clinical only	13	38.2	32	46.4	2	33.3
clinical (complemented if indicated)	18	52.9	30	43.5	2	33.3
clinical + laboratory + imaging	3	8.8	7	10.1	2	33.3
Routine vaccination in the unit	31	91.2	64	94.1	4	66.6
Types of vaccine administered						
MMR	10	29.4	20	29.0	2	33.3
Tetanus	6	17.6	8	11.6	0	0
Yellow fever	18	52.9	18	26.1	2	33.3
Flu	16	47.0	58	84.0	3	50.0

Continue

Continuation

H1N1	0	0	4	5.8	0	0
Tetanus + Diphtheria	17	50.0	29	42.0	2	33.3
Hepatitis	14	41.2	39	56.5	3	50.0
Agreements/Partnerships	9	27.7	23	33.8	4	66.6
Disabled						
Wheelchairs/Crutches	26	76.4	53	76.8	3	50.0
Visual	13	38.2	35	50.7	4	66.6
Auditory	13	38.2	18	26.1	3	50.0
Speech	12	35.3	15	21.7	1	16.6

RC: remand center; PU: prison unit; MASC: male; FEM: female

^a Percentage relative to the total column for all categories, except for Category B, expressed in interquartile ranges.

establishment of supervised treatment. However, new air-borne diseases are continually being faced, such as H1N1, for which the contamination rate is much higher. Moreover, overcrowding in prisons may result in situations of high risk of epidemics. The recommended means of prevention is implementing more structured triage protocols on admission, which are not available in the appropriate form. In addition to improving services provided in the prison unit, we emphasize the importance of guaranteeing referral to other levels of health care attention in order to prevent and combat outbreaks, such as that affecting around 1,500 of the 3,000 detainees in a prison unit in a municipality such as Serra Azul in 2010.^e PU should be taken into consideration when drawing up disaster plans for epidemics.

It is therefore necessary for other measures to be taken jointly, such as training health care professionals, especially doctors, to operate in conditions specific to the penitentiary system. Although it has already been shown that this environment could be a significant scenario for training doctors, there are still few medical schools which include this topic in their curriculum.² The Ribeirao Preto Medical School of the USP is pioneering by including RCG0480 Confinement Medicine – Structure of the Health Service, Occupational and Nosocomial Risk, in which students study the epidemiology of the prison environment and visit a prison.^f The Gynecology and Obstetrics course at the same institution includes care in PU-FEM. This work may open health care professionals' eyes to this field of work and do away with myths regarding the conditions of health care in the penitentiary system.

The initiative of the Sao Paulo State Bipartite Commission envisages new forms of dealing with the problem of implementing minimum health care teams, through establishing State/Municipal partnerships directed at health care for the incarcerated as provided

for in CIB Resolution-62, of 6/9/2012. Even with this initiative, it is not expected that all proposed measures will be achieved, especially those concerning preventative activities^{4,10} in view of the complexity of the prison context. Thus, initiatives taking place in the "Mário de Moura e Albuquerque" male penitentiary, located in Franco da Rocha, in which inmates are trained to act as health promoting agents, coordinated by the team installed there and by the intervention of health care universities may be very important strategies in improving health care in the prison system.

Another important point is computerized support. It was observed that various units took the initiative to establish a system controlling health and treatment processes. However, these initiatives depended on isolated individuals and there was no inter-communication between PU. Information technology in health care is an important step in improving internal processes and for epidemiological records. Setting up computerized medical records, such as including the prison population in the national information systems (DATASUS) should be a priority.⁹ In addition to computerized medical records, the prison system should be integrated into the emergency medical regulation system so that job requests are facilitated and documented.¹⁰

One of the difficulties found in analyzing the questionnaires were the questions which were not responded to. It is possible that some questions were unclear for the administrators and they therefore chose not to respond. Despite the care taken in drawing up the instrument, with language that was clear and accessible, some questions could have been better interpreted and, consequently, more reliable information provided, if the interview had taken place on-site, something which was not viable given the number of units to be visited and the project's budgetary limitations. Other studies are necessary to characterize the prison population and design

^e Data provided by Health Surveillance of the XIII Regional Health Department of the state of Sao Paulo.

^f Pazin-Filho A, Macedo CSV, Barbosa HF. RCG0480 - Medicina de Confinamento - estrutura de atendimento à saúde, risco ocupacional e nosocomial. São Paulo: Universidade de São Paulo; 2013. Available from: <https://titanita.cirp.usp.br/moodle/course/info.php?id=426>

Table 3. Parameters of internal flow throughout the Brazilian Unified Health Care System. Sao Paulo, SP, Southeastern Brazil, 2009.

Flow parameters	RC (34)		PU MASC (69)		PU FEM (6)	
	n	%	n	%	n	%
Health care	33	97,0	98.5	6,0	6	100
Secondary referral	7	20.6	5	0,0	0	0
Tertiary referral	10	29.4	32	2,0	2	23.3
Emergency	25	73.5	50	6,0	6	100
Mode of referral						
Regulation	15	44.4	43	4,0	4	66.6
Direct contact	16	47,0	34	1,0	1	16.6
Other	8	23.5	6	1,0	1	16.6
Satisfaction with mode of referral						
No	11	32.3	40	4,0	4	66.7
Yes	21	61.7	25	1,0	1	16.6
No response	2	5.9	4	1,0	1	16.6
Problems in referral						
No escort available	21	61.7	53	3,0	3	50,0
No ambulance available	5	14.7	20	1,0	1	16.6
No receiving unit available	5	17.7	22	3,0	3	50,0
Other transfer problems	6	17.6	12	3,0	3	50,0

RC: remand center; PU: prison unit; MASC: male; FEM: female

health care policies. However, faced with the documented panorama, regular application of the instrument used in this study could serve as an indicator of health behavior, important both for new Bipartite Commission recommendations and for evaluating and monitoring health indicators.

This study presents a profile of PU which could be used in planning and monitoring future actions for the continuous improvement of health care processes.

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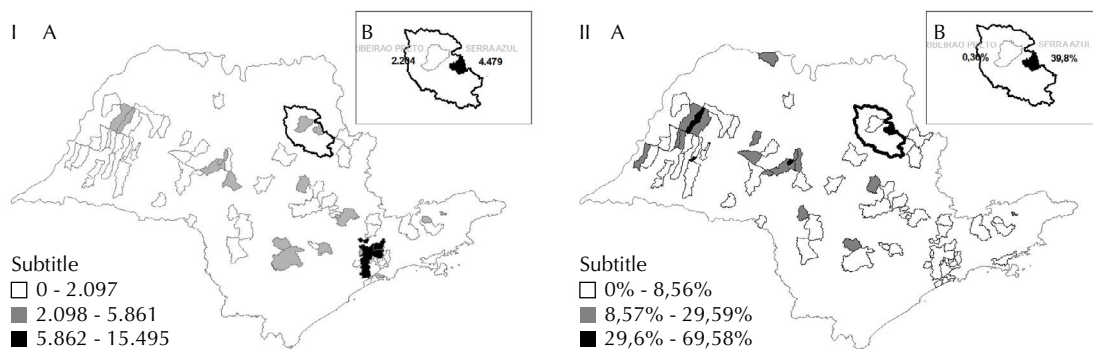


Figure. (A) Map of the distribution of the prison population in prison units in the state of Sao Paulo. (B) Map of the area covered by the XIII Health Care Department of the state of Sao Paulo, municipalities of Ribeirao Preto and Serra Azul (Micro administrative region of Ribeirao Preto) (B). I highlights the absolute number of inmates; II shows proportional distribution in relation to the population of the municipality.

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