

# Attention to vulnerable populations through the State Telehealth Program from Querétaro: Male Detention Facility

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## Abstract

*Introduction: The use of telehealth resources in prison systems already has a long tradition. Objective. This study intends to present the assistencial results of patients with diabetes and hypertension, followed through telehealth in the male detention facility in Querétaro, Mexico. Methodology: 120 patients from the male detention facility from Querétaro, Mexico were analyzed. These patients were followed by telehealth in the period of 4 years (2014-2017), being diagnosed and from their diagnosis, were grouped in four big groups: diabetes/hypertension – dyslipidemia; hypertension/dyslipidemia, diabetes as the only pathology and hypertension as the only pathology. From these groups, there are presented clinical parameters controlled or non-controlled patients. Results: There is a predominance the patients with controlled clinical parameters in all analyzed groups were presented, varying from 71,4% to 61,9% of the patients, depending on the group. It is observed that the group that has comorbidities presents bigger percentage of controlled patients. Conclusion: Telehealth is converted on a tool that integrates the clinical approach, guarantees the continuity of attention and can contribute for the respect of human rights of the people who are deprived of his or her liberty.*

**Keywords:** Human Rights; Telehealth in the Prison System; Chronic Diseases.

## Resumen

*Atención a poblaciones vulnerables a través del Programa Estatal de Telesalud de Querétaro: Centro penitenciario varonil*

*Introducción: La utilización de recursos de telesalud en sistemas penitenciarios ya posee una larga tradición. Objetivo: Este estudio pretende presentar los resultados asistenciales de pacientes con diabetes e hipertensión, acompañados a través de telesalud en la unidad carcelaria varonil en Querétaro, México. Metodología: Se analizaron 120 pacientes del centro penitenciario varonil de Querétaro, México. Estos pacientes fueron acompañados por telesalud en el período de 4 años (2014-2017), siendo diagnosticados. A partir de sus diagnósticos, fueron agrupados en cuatro grandes grupos: diabetes / hipertensión -dislipidemia; hipertensión / dislipidemia, diabetes como única patología e hipertensión como única patología. A partir de estos grupos, se presentan parámetros clínicos de los pacientes-controlados o no. Resultados: Hay un predominio de pacientes con parámetros clínicos controlados en todos los grupos analizados, variando de 71,4% a 61,9% de los pacientes, dependiendo del grupo. Se observa que el grupo que tiene co-morbilidad presenta un mayor porcentaje de pacientes controlados. Conclusión: La telemedicina se convierte en una herramienta que integra el abordaje clínico, garantiza la continuidad de la atención y puede contribuir para el respeto a los derechos humanos de las personas privadas de la libertad.*

**Palabras-clave:** Derechos Humanos; Telemedicina en el sistema penitenciario; Enfermedades Crónicas.

## Resumo

*Atenção à população vulnerável através do Programa Estatal de Telessaúde de Querétaro: Centro penitenciário masculino.*

*Introdução: A utilização de recursos de telessaúde em sistemas prisionais já possui uma longa tradição. Objetivo: Este estudo pretende apresentar os resultados assistenciais de pacientes com diabetes e hipertensão, acompanhados através de telessaúde na unidade prisional varonil em Querétaro, México. Método: Foram analisados 120 paciente do centro penitenciário varonil de Querétaro, México. Estes pacientes foram acompanhados por telessaúde no período de 4 anos (2014-2017), sendo diagnosticados e a partir de seus diagnósticos, foram agrupados em quatro grandes grupos: diabetes/hipertensão-dislipidemia; hipertensão/dislipidemia, diabetes como única patologia e hipertensão única patologia. A partir destes grupos são apresentados parâmetros clínicos dos pacientes-controlados ou não. Resultados: Há um predominio de pacientes com parâmetros clínicos controlados em todos os grupos analisados, variando de 71,4% a 61,9% dos pacientes, dependendo do grupo. Observa-se que o grupo que possui comorbidades apresenta maior percentual de pacientes-controlados. Conclusão: A telemedicina se converte em uma ferramenta que integra a abordagem clínica, garante a continuidade da atenção e pode contribuir para o respeito aos direitos humanos das pessoas privadas de liberdade.*

**Palavras-chave:** Direitos Humanos; Telemedicina no Sistema Prisional; Enfermidades Crônicas.

## Introducción

Through history, it was verified a distance between the social political proposal and the prison policy in Latin America. The traditional State posture was to always prioritize repressive actions, in other words, non-educational and little integrative actions for people deprived of their liberty and in conflict with the law. The people deprived of their liberty, although they lost their right to come and go, still preserve their other fundamental rights, that shall be protected and guaranteed by the State, especially since these people are legally under arrest<sup>1</sup>.

The diseases that affect the general population are not only found in the prison system but are also found in a powered way due to the precarious condition of most of the detention units, in addition to the super imprisonment phenomenon. Therefore, it is crucial that such public policies are interdisciplinary and transversal, to attend to everybody, whichever their specificities. The growth of the imprisonment rates and the questions related to social inequality, intended the institutions to elaborate social policies that aim to better the life quality in the prison system. The question of prison health, therefore, is presented as a challenge to public managers and for the justice system<sup>1</sup>.

The telehealth area throughout time has structured itself to contribute in the structuration of health actions aimed to the prison structure. However, many potentials and difficulties are reported. The most quoted benefits were of improved security, personal security, cost saving and access to specialists. The most common quoted barriers were the costs of technology, the resistance of doctors, the lack of technical knowledge of the team and the difficulty in coordinating the services<sup>2</sup>.

Since the end of the 90s the telehealth area has operationalized the telehealth systems aimed for the prison area, having the main experiences occurred in the United States and afterwards, being expanded for many countries.

An experience in Greece<sup>3</sup> involving 400 doctors, nurses and paramedics concluded that the prison telehealth is a viable option that if liberated from bureaucratic and occupational hurdles can improve the quality of service available to the prisoners.

In Alaska, the telehealth experience<sup>4</sup> had as objective to train official doctors and nurses of the prisons to operate the portable ophthalmologic imagery instruments and to use the ophthalmologic service system based on the Internet. The result indicated considerable economies that can be done in the transportation costs and the security risks could be reduced.

As for the satisfaction of the patients with the use of telehealth in the prison system, a carried out study<sup>5</sup>, although few demonstrated dissatisfaction with the telehealth systems, the results suggest that many contextual factors must be considered to comprehend the communicational implications of the patient's satisfaction with telehealth.

Study from 2018<sup>6</sup> that intended to evaluate the prison system based in telehealth regarding the conventional systems, concluded that the investments in the system can rapidly be payed, being more cost-effective than other solutions.

However, although the telehealth area has many experiences with the prison system, studies that try to observe the reached assistencial results are rare. This study intends to present the assistencial results of patients with diabetes and hypertension, followed through telehealth in the male detention unit in Querétaro, Mexico.

## Method

The following steps were covered. Initially, the conceptions that guide the male prison center were presented, situating in which context the telehealth project in Querétaro is inserted. The study's universe counted with 120 patients deprived of liberty situated in the male detention facility in which, through telehealth, clinical services were carried out through time.

These patients followed in the period of 4 years (2014-2017) were diagnosed and from their diagnosis, they were grouped in four large groups: diabetes/hypertension – dyslipidemia; hypertension/dyslipidemia, diabetes as the only pathology and hypertension as the only pathology.

The expected behaviors were described through educational processed regarding health involving seven dimensions. To each group was presented the percentage of patients that are under control. Afterwards, also by diagnose group, were presented the actual levels of metabolic control, blood pressure and lipids, distributing them by group.

Afterwards a discussion of the findings was held out.

## Results

The vulnerable and marginalized social groups have smaller probabilities to enjoy the right to health, between them the people deprived from their liberty. This vulnerable groups can be victims of laws and policies that aggravate the marginalization and hinder even more the access to prevention and attention services. The discrimination manifests or implies the provision of health services and violates fundamental human rights<sup>7</sup>.

The principles and standards that rule a focus based in the human rights is that all policies, strategies and programs are formulated with the aim of improving progressively the enjoyment of the right to health for everybody, are<sup>7</sup>: no discrimination, availability, accessibility, quality, accountability and universality.

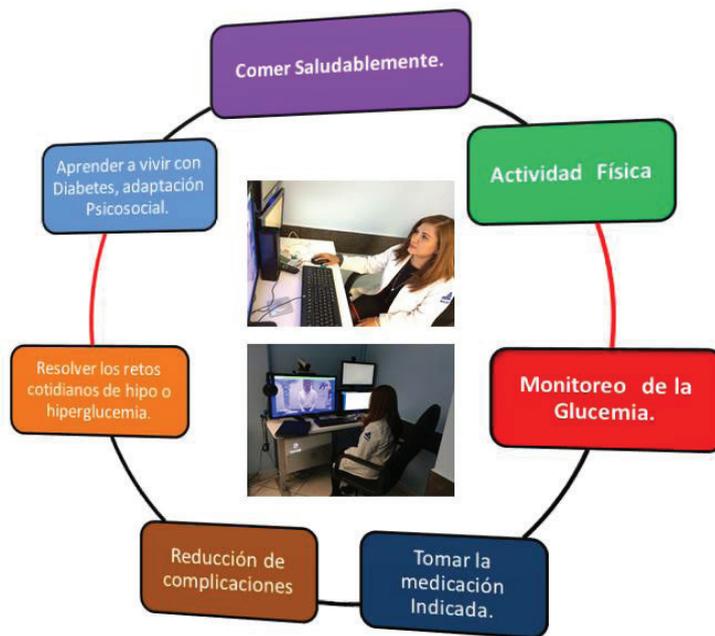
As for the Americas, the Interamerican Commission of the Human Rights recognizes the fundamental right that all people deprived from their liberty must be treated humanely, and that their dignity, their life and physical, phycological and

moral integrity are respected and guaranteed<sup>8</sup>.

For them it is established that the adequate medical service to people deprived from their liberty, emerge the information and communication (telehealth) technologies and new models of integrative service that achieve an efficient and effective answer to these chronic diseases, achieving advances of high clinical impact.

In the Querétaro state (Mexico), the State Telehealth Program awards since 2013 attention to patients with chronic non-communicable diseases (diabetes, hypertension, dyslipidemias, obesity and metabolic syndrome), to patients deprived from their liberty of the Detention Facility. The program offers telemedicine consultations to a population of 120 patients with Diabetes, Hypertension, Dyslipidemias, to whom is offered a continuous following in attention, with the aim to have strict monitoring in metabolic control, level of blood pressure and lipids, in addition to the specific actions is to offer them correspondence courses with the objective to empower the patient about selfcare and their disease achieving changes in the 7 behaviors.

### EDUCACION EN PACIENTES



The following dimensions were stimulated: 1- Self-monitoring of glucose, 2- Healthy eating, 3- Attachment to the pharmacological treatment. 4- Feet care, 5- Exercise routine, 6- Release of myths and realities, 7- Learning how to live with diabetes.

The attention is coordinated in center of the detention facility with a nurse and a doctor, who were virtually trained to monitor glucose and review feet.

In table I, the patients were grouped according to their diagnosis and associated comorbidities, totalizing 120 patients. It is observed that the biggest number of patients is situated in the group DM:HTA dyslipidemia and HTA:dyslipidemia.

Tabela I - Distribution of the patients followed by telehealth, according to diagnosis group – 2018

Diagnosis Group	Dm/hta -dyslipidemia	Hta/dyslipidemia	Diabetes as only pathology	Hiper-tension as only pathology
Absolute Number	46	28	25	21

On table II, it is observed the results by group of the patient's diagnosis, as for the level of control and lack of control of their pathologies. There is a prevalence of patients with clinical parameters controlled in all analyzed groups, varying from 71,4% to 61,9%, depending in the group. It is observed that the group that has comorbidities has the biggest of controlled patients.

**Table II** - Distribution of patients followed by telehealth, according to control and lack of control, by diagnosis group – 2018

Diagnosis Group	Dm/hta -dyslipidememia		Hta/dyslipidemia		Diabetes as the only pathology		Hipertension as the only pathology	
	Control	Lack of Control	Control	Lack of Control	Control	Lack of Control	Control	Lack of Control
Patients according to control and lack of control								
Absolute Number	32	14	20	8	17	8	13	8
% patients	69,6	30,4	71,4	28,6	68,0	32,0	61,9	38,1
Total	46		28		25		21	

In chart I, it is observed that the distribution of clinical parameters by group of patients that are monitored through time: metabolic control, levels of blood pressure and lipids. Also detailed are other diagnosis and clinical outcomes found in these groups.

**Chart I** - Distribution of clinical parameters by group of patients - 2018

Dianosis Groups	Dm/hta -dyslipidememia	Hta/dyslipidemia	Diabetes as the only pathology	Hipertension as the only pathology
<b>Patients according to control and lack of control</b>				
<b>Control</b>	Control goal Hb1: <7% TA: <120/80	In control <130/80 mmhg and corrected dyslipid- emias	Hb1: <7%	In control < 130/80 mmhg
<b>Lack of Control</b>	Hb1:7-8% TA: 135/90	In lack of control > 140/90 With damage to white organ. (Post-IAM).	2 px. With IRC in DCP 1 patient in depres- sion and poor adher- ence to treatment	With Sequelae of CVI 1 PX Finished due to drug over- dose not specified.

## Discussion

The intervention of the telemedicine program optimizes the attention to patients deprived from their liberty, reduces the logistic activities for the transfer of the patients in the health units outside of prison, delivers more efficient services, optimizes processes and response time, as verified by many studies related to the use of telehealth resources in the prison system<sup>9,10,11,12</sup>.

It was also observed in this study an improvement in the metabolic control, with decrease in the cardiovascular risk, chronic and acute complications by multidisciplinary interventions, supporting studies related to the control of chronic diseases using telehealth resources<sup>13</sup>.

Health in the prison system needs to be structured, according to many strategic guidelines<sup>14,15</sup>: To provide integral, resolute and quality assistance to the health needs of the prison population; To contribute for the control and/or reduction of the more frequent diseases that attack the prison population; To define and implement actions and services according to the principles and guidelines of a health system for all; To provide the establishment of partnerships by developing of intersectoral

actions; To contribute for the democratization of knowledge in the health/disease process, for the organization of services and of the social production of health; To provoke the recognition of health as a citizenship right; To stimulate the effective exercise of social control. In this context, the primary care has an important role. In this study, it was observed that this experience strengthens the primary care in health, emphasizing that preventive medicine has priority over the healing medicine. In the same sense, this experience stresses that actions of promotion via telehealth can allow an education in the patients, modifying changes in their behaviors and lifestyle (self-control).

Also, according to many international studies that focus on the use of telehealth resources and prison system<sup>16,4,6</sup>, it was observed that the use of telehealth resources can lead to reduces in the transfer costs, time hour man, wear and tear of vehicles, avoids the risks of transfers, and above all it is about the highly dangerous inmates.

## Conclusion

Telehealth converts in a tool that integrates the clinical approach, the communication between the health units of different providers and levels of complexity, guarantees the continuity of the attention and the respect of the human rights of people deprived from their liberty.

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