



Center for  
**Connected**  
**Health Policy**  
The National Telehealth Policy Resource Center

## Telehealth & Prisons Research Catalogue

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To increase and organize the evidence for the use of telehealth, the Center for Connected Health Policy (CCHP) has been examining published studies that have been designed to measure the use of telehealth in achieving one or more of the goals of the Triple Aim. CCHP has been cataloguing studies published in peer reviewed journals that meet certain criteria. This catalogue of studies on Telehealth in Prisons and Correctional Facilities is one result.

CCHP employed several search parameters when selecting studies regarding telehealth in prisons and correctional facilities. All studies selected were U.S. based, published post 2010, have a sample size of no less than 50 (for studies with control groups, there needed to be a minimum of at least 30 subjects per group), a study period of no less than 6 months and a primary focus on the outcomes, quality and or costs of a selected telehealth modality. Retrospective studies have been included at the end of the catalogue.

Pub Med, ProQuest, JSTOR, WorldCat, Google Scholar, Science Direct, CINAHL, and EBSCO were used in the peer-reviewed articles search. Search terms included, but were not limited to: telehealth and prison, telehealth and correctional facilities, telehealth and inmates, telehealth and juvenile detention centers, telehealth and corrections, telehealth and prisoners, and telehealth and detention. Each search was duplicated using telehealth and telemedicine.

This catalogue was prepared by McKenna Thompson and the work supervised by Mei Wa Kwong and Christine Calouro.

**Control Trial Summaries:**

**Brantley, A. D., Page, K. M., Zack, B., Friedrich, K. R., Wendell, D., Robinson, W. T., & Gruber, D. A. (2018). Making the Connection: Using Videoconferencing to Increase Linkage to Care for Incarcerated Persons Living with HIV Post-release. *Aids and Behavior*, 69.**

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
3 years	LA	238	Live Videoconferencing	Quasi-experimental Controlled Trial	x	x	

**Summary**

Incarcerated persons living with HIV (PLWH) have relatively high levels of HIV care engagement and antiretroviral therapy adherence during incarceration, but few are able to maintain these levels upon reentry into the community. In Louisiana, PLWH nearing release from prisons were offered video conferences with case managers housed in community based organizations aimed at facilitating linkage to care in the community. Of the 144 persons who received a video conference during the study period, 74.3% had linked to HIV care in the community within 90 days after release. Compared to the comparison group (n = 94), no statistically significant difference in linkage rate was detected (p > 0.05). Nonetheless, the video conference supplement was positively received by clients and case management agencies in the community and the lack of a detectable impact may be due to early difficulties in intervention delivery and study design limitations. Further study is needed to determine the value of the video conferencing supplement in other settings.

**Access:** <https://www.ncbi.nlm.nih.gov/pubmed/29680934>

**Rappaport, E. S., Reynolds, H. N., Baucom, S., & Lehman, T. M. (2018). Telehealth Support of Managed Care for a Correctional System: The Open Architecture Telehealth Model. *Telemedicine & E-Health*, 24, 1.)**

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
32 months	MD	3,356	Live Videoconferencing	Prospective Observational Study		x	x

### Summary

**Introduction:** The intent was to evaluate time to match initial investment of a new, statewide correctional system telehealth program based upon cumulative savings by avoidance of transportation and custody-related costs.

**Materials and Methods:** The setting was a statewide correctional system where prisoners received medical care through enhanced telemedicine technology supported by newly recruited specialty providers delivered through an open architecture system. The patients were incarcerated persons requiring non-emergent consultations in 10 specialties. A financial model was created to estimate transportation expenses, including vehicular use and custody staff, during the out of prison travel for traditional face-to-face care. Cost savings were then estimated by multiplying transportation expenses by the number of telehealth encounters (avoided cost) and summed cumulatively. Savings were mapped monthly. Private sector specialists were recruited, provided security clearance, trained in the use of the technology, and provided a secure site to provide services.

**Measurements and Main Results:** Based on the financial model, 1.2 million dollars in savings, equaling the initial capital investment, were achieved at 32 months. The total number of patient telemedicine encounters increased from 2,365 (-98/month) to 3,748 during the first 32 months of operation (July 2013 through January 2016: -117/month) with 89% of the established specialties performed by telemedicine technologies.

**Discussion:** It was initially estimated to require 48 months to achieve the investment savings, but savings were achieved in 32 months, demonstrating greater adoption than expected. While finances were quantifiable, enhanced public safety by avoidance of out of prison time is unquantifiable, but judged to be significant.

Access: <https://www.ncbi.nlm.nih.gov/pubmed/28682706>

Glaser, M., Winchell, T., Plant, P., Wilbright, W., Kaiser, M., Butler, M. K., Goldshore, M., Magnus, M. (2010). Provider satisfaction and patient outcomes associated with a statewide prison telemedicine program in Louisiana. *Telemedicine Journal and E-Health: the Official Journal of the American Telemedicine Association*, 16, 4, 472-9.

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
6 months	LA	737	Live Videoconferencing; Store-and-Forward	Cross-Sectional Survey Study	x	x	

#### Summary

Health information technology including telemedicine offers potential to improve patient care outcomes. As part of the response to Hurricanes Katrina and Rita in 2005, the Louisiana State University Health Care Services Division expanded its statewide telemedicine program. The aim of this study was to evaluate provider satisfaction and patient outcomes associated with telemedicine when used for the administration of prisoner medical care. Providers completed a survey following each patient encounter in real-time; questions were adapted from standard satisfaction indices. Statistical methods included uni-, bi-, and multivariable including ordinal regression methods to characterize unadjusted and adjusted factors associated with telemedicine use and provider satisfaction, and patient outcomes. Data were collected between December 2007 and May 2008 and were analyzed using SAS and Stata. Out of 737 patient visits, the majority of patients were African American (68.6%), men (92.9%), seen for either infectious disease or mental health (46.2% and 50.2%), with most surveys completed by a physician (63.1%). Most telemedicine encounters were completed (92.8%), a treatment plan was established (97.0%), the provider perceived that the technology was adequate to conduct visit (93.4%), and a follow-up telemedicine appointment was requested (90.8%). Most providers were satisfied with telemedicine for the visit overall (87.0%), believed that telemedicine improved patient prognosis (88.2%), and perceived that the patient was satisfied (83.0%). This study suggests that telemedicine was an effective

and accepted method of healthcare provision.

Access: <https://www.ncbi.nlm.nih.gov/pubmed/20438385>

### Retrospective Study Summaries:

Sherwood, B. G., Han, Y., Nepple, K. G., & Erickson, B. A. (2018). Evaluating the Effectiveness, Efficiency and Safety of Telemedicine for Urological Care in the Male Prisoner Population. *Urology Practice*, 5, 1, 44-51.

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
7 years	IA	376	Live Videoconferencing	Retrospective Review	x	x	

#### Summary

**Introduction:** We reviewed the safety and effectiveness of our hospital's urological telemedicine program that has been used for the Iowa prisoner population for more than a decade.

**Methods:** A retrospective review was performed of telemedicine visits of male prisoners from 2007 to 2014. The effectiveness of these visits was assessed by 1) concordance of telemedicine and in-person diagnoses, 2) compliance with radiologic and medication orders, and 3) in-person visits saved with telemedicine. Safety was assessed by analyzing the number of patients for whom an emergency department visit was required after the telemedicine visit, and missed or delayed cases of malignancy. Estimates were then made of the number of cases that could safely be managed with telemedicine alone.

**Results:** The most common diagnosis was voiding dysfunction (24%), followed by genitourinary pain (23%). Diagnoses were concordant in 90% of patients, compliance was high (radiology 91%, medications 89%) and in-person visits were estimated to be saved in 80% to 94%.

No men required emergency department visits after telemedicine visits and no cases of malignancy were missed in the population that returned for an in-person visit. We estimated that more than 50% of urological complaints in this cohort could have been managed with telemedicine alone.

**Conclusions:** Telemedicine was shown to be a safe and effective method of providing general urological care that obviated the initial in-person visits for nearly 90% of patients. It is likely that telemedicine could safely replace in-person visits for many urological conditions, especially for younger men and those for whom access to specialized care may be limited.

**Access:** <https://www.sciencedirect.com/science/article/pii/S2352077917300018>

**Sterling, R. K., Cherian, R., Lewis, S., Genther, K., Driscoll, C., Martin, K., Goode, M. B., Sanyal, A. J. (2018). Treatment of HCV in the Department of Corrections in the Era of Oral Medications. *Journal of Correctional Health Care: the Official Journal of the National Commission on Correctional Health Care*, 24, 2, 127-136.**

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
15 months	VA	180	Live Videoconferencing	Retrospective Analysis	x		

#### Summary

Chronic hepatitis C virus (HCV) is widely prevalent in the Virginia Department of Corrections (DOC). However, sustained virologic response (SVR) with all oral direct-acting antiviral (DAA) therapy is unknown. HCV treatment was provided through telemedicine following guidelines of the American Association for the Study of Liver Diseases and Infectious Diseases Society of America. SVR12 in the DOC was compared in two control groups: privately insured and indigent patients receiving care in HCV treatment clinics by the same providers during the same time period. Of 220 DOC patients, 180 were started on therapy (158 genotype [GT] 1, 15 GT2, and 10 GT3). SVR12 data

on GT1 patients who received ledipasvir/sofosbuvir with or without ribavirin (RBV) were 96%, similar to our indigent (95%) and private clinic (93%) patients despite differences in age, gender, treatment experience, FIB-4, and use of RBV. Multiple logistic regression of GT1 patients identified lower FIB-4 ( $p = .008$ ) and treatment clinic ( $p = .01$ ) as independent predictors of SVR12. HCV treatment in the DOC by telemedicine with DAA is not only feasible but has a very high SVR12 similar to published trials.

**Access:** <https://www.ncbi.nlm.nih.gov/pubmed/29566611>

**Kassar, K., Roe, C., & Desimone, M. (2017). Use of Telemedicine for Management of Diabetes in Correctional Facilities. *Telemedicine Journal and E-Health: the Official Journal of the American Telemedicine Association*, 23, 1, 55-59.**

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
4 years	NY	106	Live Videoconferencing	Retrospective Chart Review	x	x	

#### Summary

**Background:** Prisoners can have difficulty obtaining subspecialty consultations. Telemedicine is used to provide diabetes consultations for residents of correctional facilities from our diabetes center. Telemedicine helps improve access to endocrinologists at reduced cost, but little outcome data are available.

**Methods:** A retrospective chart review of prisoners from 15 correctional facilities who received televisits for diabetes from 2011 to 2014 was performed. Demographic information, complications, medications, blood pressure, and laboratory results were collected.

**Results:** At baseline ( $n = 106$ ), mean age was 44 years, duration of diabetes was 15 years, 44% had type 1 diabetes, and all were male. Only 64 of the participants had  $\geq 2$  video consultations; 58/64 had follow-up HbA1c results; and 53/58 were insulin requiring. Mean initial

HbA1c was 9.3% with an average decrease of 0.5% from initial to final visit (a mean of 3.6 televisits). Patients with an initial HbA1c >9% (n = 28) had an average drop of 1.3%. Twenty-two subjects had initial elevated blood pressure; 20/22 (91%) were prescribed angiotensin-converting-enzyme-inhibitors (ACE-I)/angiotensin II receptor blockers (ARB); and 15 of these 20 (75%) had a final blood pressure <140/90mm Hg over a mean of 3.3 televisits. 17/20 with high low-density lipoprotein (LDL) were treated with statin drugs; 15/17 (88%) had improved LDL on follow-up. Follow-up was limited by prisoner availability or visit cancellation by prison facility.

**Conclusion:** Improvements in glycemic, blood pressure, and lipid control for prisoners with diabetes can be achieved with teleconsultations to correctional institutions. Given the high costs of transporting prisoners to healthcare facilities, telemedicine should be considered to help improve diabetes care for this vulnerable population.

**Access:** <https://www.ncbi.nlm.nih.gov/pubmed/27223479>

**Young, J. D., Patel, M., Badowski, M., Mackesy-Amiti, M. E., Vaughn, P., Shicker, L., Puisis, M., Ouellet, L. J. (2014). Improved virologic suppression with HIV subspecialty care in a large prison system using telemedicine: an observational study with historical controls. *Clinical Infectious Diseases: an Official Publication of the Infectious Diseases Society of America*, 59, 1, 123-6.**

Study Length	State	Sample Size	Telehealth Modality Type	Method	Outcome	Quality	Cost
14 months	IL	1201	Live Videoconferencing	Observational, Retrospective Cohort Study	x		

**Summary**

Correctional populations have an elevated human immunodeficiency virus (HIV) prevalence, yet many individuals lack access to subspecialty care. Our study showed that HIV infected inmates had significantly greater virologic suppression and higher CD4 T-

lymphocyte counts when managed by a multidisciplinary team of subspecialists conducting clinics via telemedicine. In other studies, these outcomes have been associated with reductions on HIV-related morbidity and mortality, as well as HIV transmission.

**Access:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4305134/>