# CORRECTIONAL SERVICE CANADA

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**RESEARCH REPORT**

# The Use of Technology in the Delivery of Correctional Intervention Programs: A Rapid Review

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**The Use of Technology in the Delivery of Correctional Intervention Programs: A Rapid Review**

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# Acknowledgements

# Executive Summary

**Key words:** *correctional interventions, technology, teleconference, videoconference, computerized programs*

Increasingly, scholars and correctional staff are considering the function of technology within the criminal justice system (Batastini, McDonald, & Morgan, 2012). Recently, there is interest in how technology can be used in the provision of correctional intervention programs by using teleconference, videoconference, and computerized applications. The goal of the current study was to review the literature to assess the evidence for the effectiveness and viability of using technology-based methods of program delivery with an offender population.

This report reviewed the literature on what technology has been used in the provision of correctional treatment programming, the effectiveness and viability of these methods, and also identified any best practices recommended when implementing these modalities. A comprehensive search of several databases including ProQuest, governmental correctional agencies, the Cochrane Database of Systematic Reviews, the Campbell Systematic Reviews, and Google Scholar was conducted.

The available literature indicated that technology has been used to assist in the delivery of a range of specific services and interventions for correctional populations in a number of jurisdictions; however, technology is not routinely utilized in delivery of general correctional programs. More commonly, it has been used in the provision of substance misuse treatment, intimate partner violence treatment, health services, and distance education learning in some correctional environments. Results are promising for these interventions, with much of the research demonstrating alternative methods of program delivery to be just as effective as face-to-face methods. Some concerns have been raised, however, regarding the use of this technology in the correctional environment. For example, the impact of learning difficulties, cognitive deficits, or literacy limitations on offenders' ability to benefit from technology-based programming is unclear.

Best practices that should be followed when implementing technology-based programs include: considering the adaptability of the program to alternative methods of delivery, investments in staff training, and ensuring that program delivery is sensitive to the individual needs and learning styles of the offender.

In summary, alternative methods of correctional treatment delivery that utilize technology are promising in particular for individual sessions as an adjunct to in-person treatment, or as a stand alone one-on-one counselling option with mental health professionals. However, more research is needed before firm conclusions can be drawn with regards to the efficacy and viability of a broadly-based roll out of these modalities within the correctional setting given concerns for compromised treatment alliance and difficulties accommodating offenders with learning disabilities and ADHD. The strength of these conclusions were limited by very few studies focusing on correctional intervention programs or by very small scale studies.

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## Introduction

Alongside the proliferation of technology in contemporary society, there has been increased attention on the role technology can play within the criminal justice system (Batastini, McDonald, & Morgan, 2012). One way in which technology can be incorporated into correctional practice is by diversifying the available modalities for the delivery of services and interventions. This can be accomplished through the use of tele- and video-conferencing, as well as computerized delivery of services. Commonly cited benefits of using technology in this manner include the potential for fiscal savings (Levesque, Johnson, Welch, Prochaska, & Fernandez, 2012), and access of services for individuals in remote or underserved locations (Batastini & Morgan, 2016; Kállay & Miclea, 2010; Richardson et al., 2010; Wilson, Palk, Sheehan, Wishart, & Watson, 2017). Given their potential for improving program accessibility for high needs clients, it is important to examine whether these methods of service delivery are feasible for use in correctional settings.

### The Current Review

Correctional Service of Canada's (CSC) Reintegration Programs Division (RPD) requested a review of the evidence to determine the viability of alternative methods of correctional program delivery. The impetus of this request is an ongoing pilot project operated by RPD to use alternative program delivery methods through technology (video/teleconference) to deliver community maintenance programs to offenders who reside in remote locations. The pilot project information received from the regions, combined with this literature review will allow RPD to assess the viability of implementing alternative program delivery methods within various streams of correctional programs. Should the initiative move forward, the results will help RPD further define next steps, including guidelines and best practices to enhance correctional practice.

The research questions to be answered are as follows:

1. What technology has been used to provide correctional treatment programming or community maintenance programming to offenders?
2. What is the effectiveness and viability of using alternative methods of program delivery for correctional treatment programs?

a. How do alternative methods of program delivery compare to face-to-face programming?

b. Are there issues or concerns in the use of these modalities with some individuals?

3. What are the best practices that should be followed when implementing alternative program delivery methods for correctional treatment programs?

# Method

Initially we searched the literature for any studies focusing on the use of technology in the delivery of correctional intervention programs; however, due to limited research, the search parameters were broadened. A number of research areas were searched including: (1) tele- and video-conferencing in offender intervention programs, (2) computerized cognitive behavioural therapy, (3) distance learning and education, (4) telehealth, (5) computerized substance use treatment, and (6) virtual reality therapy. A comprehensive search of several databases, including ProQuest, government correctional agencies, the Cochrane Database of Systematic Reviews, the Campbell Systematic Reviews, and Google Scholar was conducted. The search terms included various combinations of the population of interest (i.e., offender*, inmate*, correction*) as well as terms related to technology and program delivery (i.e., tech*, program*, computer based learning, web based learning, teleconference, video, videoconference, group therapy). The robustness of evaluation studies was assessed using the Maryland Scientific Methods Scale and greater weight was placed on higher quality studies.

<center>**Results**</center>

## Technology Use in Correctional Settings

The use of technology including teleconferencing, videoconferencing, and computer technology to assist in the delivery of correctional services and interventions has been applied in a number of jurisdictions. There are, however, very few examples that specifically describe using these approaches in the delivery of correctional programs. This could be because these initiatives are small pilot projects that are not well documented in the public record.

One exception to this involved a cell phone-based aftercare project, the RealVictory program, which was used with juvenile probationers in the United States (Burraston, Cherrington, & Bahr, 2012; Fowles, 2009). This program was delivered after individuals had completed a six-week in-person cognitive behavioural intervention and was aimed at reinforcing lessons learned and the goals set during treatment. The primary component of the initiative had most individuals receiving two automated phone calls per day that asked three questions: (1) Have you followed your goal since the last phone call? (2) How much effort have you put forth to accomplish one of the necessary steps to achieve your goal? (3) What results have your efforts produced? Individuals responded to these questions by using the keypad on their phone and, depending on the responses they provided, automated messages of positive affirmation or encouragement were played, often pre-recorded by family members of the participant. In cases where the young person made the decision to abandon their specified goal, they were asked to provide a reason for this failure or to specify what adjustments could be made to the goal. As well, the young offender could receive immediate help from a professional counselor or help line.

Another technology-based correctional intervention program used with juvenile offenders is the prototype computerized intervention, Rise Above Your Situation (RAYS) that was delivered in conjunction with in-person counselling (Levesque et al., 2012). This multimedia intervention assesses the young offenders to determine their needs (e.g., substance misuse, criminality) and provides them with individualized programming based on this assessment. Should the assessment reveal substance misuse needs, the young offender would be placed into a substance use track, while the absence of a substance misuse need would place them in a general criminality track. At the end of the session, the program provides the participant with a

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workbook of additional information and activities. As well, the computerized program provides a report for the counsellor that summarizes the juvenile's assessment results and provides suggestions for reinforcing lessons learned.

Although there are few technology-based correctional intervention programs with adult offenders that have been described, several initiatives have targeted offenders convicted of intimate partner violence (IPV) (Levesque, Ciavatta, Castle, Prochaska, & Prochaska, 2012; Sygel, Kristiansson, Furberg, & Fors, 2014). The Reactions on Display/Intimate Partner Violence (RoD/IPV) program, based in cognitive behavioural therapy (CBT) and social learning theory, is aimed at facilitating change in offender behaviour by allowing them to contemplate their feelings, actions, and consequences of IPV, and to rehearse non-violent responses to triggering situations (Sygel et al., 2014). Similar to this, the Journey to Change program is a computer-based program that is used in conjunction with a court-mandated in-person batterer intervention program (Levesque et al., 2012). This three-session program, based on the transtheoretical stages of change process, focuses on identifying types of abuse, safety planning, and how to cope in triggering situations.

Substance use treatment is another area in which technology has been incorporated into offender program delivery (Chaple et al., 2014; 2016; Elison, Weston, Davies, Dugdale, & Ward; Staton-Tindall, Wahler, Webset, Godlaski, Freeman, & Leukefeld, 2012; Walters, Ondersma, Ingersoll, Rodriguez, Lerch, Rossheim, & Taxman, 2014; Wilson et al., 2017). These programs can be delivered at any point during an offender's sentence, including within prison- or community-settings. For example, Chaple and colleagues (2014; 2016) describe the Therapeutic Education System (TES), a computerized drug treatment intervention used in the U.S. for incarcerated offenders. This program, grounded in CBT, includes 48 interactive modules to be completed over the course of 12 weeks. The interactive modules are comprised of a variety of graphics, videos, and animations to address offenders' substance misuse needs.

Alternative delivery methods to offender substance use interventions can also be found in community-settings. For example, Staton-Tindall and colleagues (2012) described an initiative aimed at increasing rural offenders' access to substance use treatment. This is achieved by offenders participating in one-on-one videoconference therapy in their parole office, with the treatment provider located off-site. Other interventions are provided online (Walters et al., 2014; Wilson et al., 2017). A program described by Walters and colleagues (2014) is a two-session

web-based intervention for probationers with substance misuse issues. This primer intervention, completed on a tablet while in their probation office, is implemented near the start of the offender's community supervision and is intended to motivate the offender and effect change in three behavioural targets: (1) substance use treatment initiation and engagement, (2) probation compliance, and (3) HIV testing and care. The first session targets offenders' motivation to complete their probation, to make changes in substance use behaviours (i.e., starting treatment), and to be tested for HIV (and initiating any other associated care that may be required). While the second session occurs approximately 30 days after the first and centers on goal setting, coping skills, and reinforces the benefits of receiving social support.

Beyond correctional and substance use interventions, technology has further been used to provide a variety of services to offenders, including distance education (Florida Department of Corrections, 2000; Mathew, 2011; Seeling & Rate, 2014) and the use of tele- and video-conferencing to provide psychological and psychiatric services to offenders (Batastini, 2016; Batastini, King, Morgan, & McDaniel, 2015; Batastini & Morgan, 2016; Morgan, Patrick, & Magaletta, 2008).

**Effectiveness and Viability of Alternative Methods of Program Delivery**

When assessing the feasibility of using alternative methods of correctional program delivery two components that should be considered. First, whether the modality of program delivery is *effective;* and, secondly, is it a *viable* option for the organization? Both are components that should be part of an evaluation of program implementation.

### Effectiveness of alternative methods of program delivery

Research examining the efficacy of technology-based modalities of treatment promising, if mixed. As noted, there is currently limited research on correctional interventions but what exists focuses on juvenile offenders or adult offenders convicted of IPV. Evaluation of the RealVictory cell phone-based aftercare program found that juveniles who participated in the CBT-based in-person program and the cell phone coach aftercare component experienced significantly less recidivism than comparable juveniles in the control group, and slightly less recidivism than juveniles who received only the CBT-based in-person program (without the cell phone coach aftercare component), although this difference was not statistically significant (Burraston et al., 2012).

Research examining the efficacy of the Journey to Change, a computerized IPV program for adult men offenders found promising results (Levesque et al., 2012). Compared to offenders who received treatment as usual, offenders who received treatment as usual plus the Journey to Change program were significantly more likely to be in the action stage with regards to using health strategies to stay violence-free at the end of the program, and were more likely to access services outside of the program. Participation in Journey to Change was also associated with decreases in criminality, with participants being less likely to engage in physical violence in the 12-month period after treatment. While participants and non-participants of Journey to Change were equally likely to drop out of treatment and to have further police contact for domestic violence, those who used the computerized program and who had later police involvement had lower rates of documented physical violence and visible injuries.

Moving beyond intervention programs specific to corrections, research focusing on the efficacy of substance use treatment programs with offender populations has also been positive. Results have shown that participants in computerized programs often have comparable outcomes to those in face-to-face programs, including comparable rates of program attendance (Chaple et al., 2014), development of coping skills (Chaple et al., 2014), reductions in criminality (Chaple et al., 2016), and HIV risk behaviour (Chaple et al., 2016). Moreover, offenders who participated in computerized substance use treatment viewed the programs positively (Chaple et al., 2014; Elison et al., 2016) and some participants viewed them more positively than face-to-face interventions (Chaple et al., 2014).

Similarly, meta-analytic reviews have found that telehealth interventions generally appear to be just as effective as traditional in-person approaches with both the general population (Bee, Bower, Lovell, Gilbody, Richards, Gask, & Roach, 2008) and criminal justice-involved or substance misuse clients (Batastini et al., 2015) including in terms of clinical effectiveness, service satisfaction, and program engagement/performance. Although not focused on offenders, an interesting research study by Morland and colleagues (2010) examined the efficacy of a videoconference group anger-management intervention for rural combat veterans with posttraumatic stress disorder (PTSD). Videoconference technology was utilized by having the veterans meet together in their rural Veterans Affairs clinic with the therapist videoconferencing. The efficacy of this technology-based intervention was compared to in-person treatment. Results showed that both the in-person group and the videoconference group saw similarly significant

reductions in anger symptoms and no significant differences were found in terms of attrition rates, program adherence, and program satisfaction.

Another telehealth approach to group-based treatment was piloted in the Kansas Department of Corrections, with the goal to increase accessibility of mental health treatment by providing CBT-based psychotherapy programming for offenders housed in special management or administrative segregation housing (Batastini & Morgan, 2016). In the evaluation, participants were sorted into three groups: (1) videoconference condition (with a maximum of 6 offenders in each therapy group); (2) in-person condition (with a maximum of 2 offenders in each therapy group); and (3) no-treatment control condition. Results showed that there were no changes in offender psychological functioning and criminal thinking throughout the period of program delivery for the experimental or control group. Notably, participants receiving therapy through the videoconference delivery method were generally less satisfied with the service compared to those who participated in in-person therapy.

Notwithstanding these non-significant findings, the body of literature describing the efficacy of technological modalities of service and intervention provision is generally positive, with much of the research demonstrating that alternative methods of program delivery are just as effective as face-to-face delivery methods. What still must be considered is an examination of the feasibility of using technological modalities of treatment within the correctional setting.

### Viability of alternative methods of program delivery

Regardless of the area examined (i.e., correctional interventions, telehealth, etc.), concerns have been raised regarding the feasibility of using technology-based interventions and there are a number of challenges inherent to integrating technology into the correctional environment. For instance, Chaple and colleagues (2014) highlight that computer-based programs can be challenging to implement given concerns with providing inmates access to the internet, limitations on prison space, and the potential need to retrofit prison space to accommodate technology. Moreover, a number of studies highlight challenges associated with malfunctioning or misplaced technology, which impede individuals' ability to benefit from services and interventions (Fowles, 2009; Levesque et al., 2012).

Further, research in the area of tele-health solutions identifies potential privacy and confidentiality concerns associated with technology-based services and programs (Batastini et

al., 2015; Choi, Hegel, Marti, Marinucci, Sirrianni, & Bruce, 2014) that could also apply in the correctional setting. For example, Choi and colleagues (2014) examined the efficacy of in-home telehealth delivery of problem-solving therapy among depressed homebound older adults. Feedback received from one participant included concerns that privacy was reduced as family members often entered the room while telehealth therapy was taking place and privacy could have been better maintained by participating in in-person therapy. This same challenge could conceivably occur for offenders receiving technology-based programming.

Beyond the operational challenges associated with technology-based program modalities, there are also concerns regarding the ability of some individuals to fully benefit. While the literature on the whole suggests that programs and services delivered via technological means work just as well as face-to-face alternatives for the general population (Barak, Hen, Boniel-Nissim & Shapira, 2008; Bee et al., 2008; Grist & Cavanagh, 2013), the offender population differs from the general public in a number of important ways and it is unclear how this could affect the viability of alternative methods of program delivery. Offenders, for example, have higher rates of learning disabilities, literacy limitations, and cognitive deficits (MacPherson, Chudley, & Grant, 2011; Stewart, Sapers, Cousineau, Wilton, & August, 2014; Usher, Stewart, Wilton & Malek, 2010) which may impede their ability to benefit from computerized or teleconference programming. These same characteristics have been cited as potential barriers preventing individuals from fully benefiting from the program or service in some non-offender samples (Kim-Rupnow, Dowrick, & Burke, 2001; Lambert & Dryer, 2018; Nganji, Brayshaw, & Tompsett, 2012). For example, individuals with learning disabilities may find the interface of online environments difficult to navigate, be overwhelmed by too much information on a page, and struggle to effectively interact with the material (Lambert & Dryer, 2018). It is possible that treatment and services provided in-person may be able to circumvent these challenges as facilitators can assess participants' ability to grasp the information and make modifications to program delivery when necessary. Delivering a program in-person also alleviates concerns surrounding the observation of relevant behavioural cues (e.g., fidgeting, tearfulness) that may be missed if they occur off-camera or with poor audio-visual quality (Batastini et al., 2015). The offender's age and how comfortable they are with using technologically also needs to be considered as research has found internet-based therapy to be less effective for older individuals (Barak et al., 2008). Further, given the high rates of financial insecurity faced by offenders

(Stewart, Wardrop, Wilton, Thompson, Derkzen, & Motiuk, 2017), the costs associated with participating in technology-based modalities of treatment (e.g., high speed internet connection, computer, tablet, telephone line, etc.) may be prohibitive.

Finally, while some research has found that participants view technology-based modalities of service and program provision just as positively as face-to-face models (Morgan et al., 2008; Chaple et al., 2014), other research has raised concerns regarding the impact teleconference or videoconference modalities can have on the therapeutic alliance (Batastini et al., 2015; Batastini & Morgan, 2016; Greene et al., 2010; Lawlor-Savage & Prentice, 2014). Greene and colleagues (2010) focused on the efficacy of group-based videoconference therapy for veterans with PTSD and found that those in the videoconference condition reported lower levels of alliance with the group facilitator compared to those in traditional face-to-face therapy. Further, other research on telehealth solutions with offenders has found that those who use telehealth therapy tend to report less trust in the program facilitator and were in greater disagreement on the tasks and goals addressed in the program than those who participated in in-person therapy (Batastini & Morgan, 2016).

**Best Practices**

Given there are few specific correctional intervention programs that utilize technology to assist with the delivery of programming there are no set 'best practices' that have be endorsed. However, recommendations have been made with respect to the use of technology-based interventions in community settings that may be applicable to the offender population.

Primarily, attention should be given to the adaptability of the program for tele/video conferencing or computerized modalities. It has been recommended that an analysis first be conducted that examines the risk and benefits of implementing tele-programs for the organization. For example, can the needs be better met through other means before adapting to tele-programming, such as hiring additional staff? (Batastini & Morgan, 2016). It is important to ensure that the goals of the program remain the same and to ensure that the integrity of the program is not lost (Lawlor-Savage & Prentice, 2014). This may mean that the program needs to be adjusted or tailored to fit the technology that is being used (Batastini & Morgan, 2016). Furthermore, any technology-based interventions should be tested prior to implementation to ensure that there are no 'bugs', programming issues, or other technical difficulties (Levesque et

al., 2012).

With respect to staff, it is important to work towards gaining staff buy-in for the use of technology to deliver the services (Batastini & Morgan, 2016). It is also recommended that the program facilitators be properly trained, so that they have an understanding of the services being provided in the context of the technology used, as well as the possible limitations of the program when it is not delivered face-to-face (Batastini & Morgan, 2016; Lawlor-Savage & Prentice, 2014). Additionally, it is recommended to train all staff to ensure that they are able to handle any technical difficulties that may arise. This may be accomplished through in-person training, demonstrations, assessment and feedback, and the development of a protocol that facilitators can refer to (Levesque et al., 2012).

In a similar vein, it is important to ensure that the equipment (i.e., telephone/ videoconferencing line, computers) is functional and that the offender knows how to use the equipment properly (Burraston et al., 2010). This may be difficult for older offenders, for example, as research has found that internet-based therapy may be less effective for older samples (Barak et al., 2008). However, with the growing acceptance of the use of technology in daily life, this may become less of an issue (Barak et al., 2008). It is possible that additional training on the use of technology with older adults may be useful before the services can be implemented. Similarly, it is important that the services be accessible and considerations should be given in regards to access to computers, telephones, high-speed internet, as availability to technology outside of the correctional setting may be an issue for some offenders.

Recommendations for telepsychology programs also suggest that clients should be screened to determine that they are good candidates for treatment administered over the telephone (Batastini & Morgan, 2016). This may also be something to consider when adapting intervention services to offenders, as some offenders may be better suited than others to receive programming in this manner. For example, individual differences in offenders may have an impact on their ability to engage in the intervention, as has been seen in projects where educational learning is computerized (Lambert & Dryer, 2018). Personal characteristics, such as learning disabilities and mental capacity, should be considered when using technology. There may be a need for additional support or personalized services to address these types of concerns (e.g., additional time to cover material, presentation of content in different formats; Lambert & Dryer, 2018; Nganji et al., 2012). For example, in the context of computerized learning, an

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individual with dyslexia may require lecture notes to review in advance or may require the content to be presented in different formats, such as videos, audio, and text-based images, to account for different learning styles (Nganji et al., 2012). Providing material to allow for self-paced learning and to accommodate different learning styles has also been suggested when implementing distance learning for offenders (e.g., Seelig & Rate, 2014). Similar considerations may be useful when delivering technology-based interventions.

**Limitations**

There are limitations that restrict the conclusions that can be drawn on the utlility of using technology in correctional program delivery at this time given there are so few research studies focusing on the efficacy and viability of technology-based modalities of correctional intervention programs. The research that does exist are generally small-scale studies that usually do not have a comparison group. While it is meaningful to draw on research from associated areas of study (e.g., distance learning, telehealth), it is difficult to determine how generalizable these findings are to the federal offender population. It is particularly unclear how the specific responsivity characteristics of offenders (e.g., high rates of ADHD, learning disabilities, cognitive deficits) would affect their ability to benefit for alternative methods of program delivery.

**Conclusions**

Preliminary reading of the limited literature on alternative methods of correctional and mental health program delivery within a correctional environment suggests that these modalities could be promising options for:

- Hard to serve geographic locations where no other face-to-face treatment option would otherwise be available, or as
- Individual maintenance (adjunct sessions) or counselling options following face-to-face group sessions.

More research is needed, however, before firm conclusions can be made with regards to the efficacy and viability of using these modalities more broadly within the correctional setting, particularly with respect to how outcomes of these delivery methods compare to face-to-face group delivery. Central concerns are:

- The potential of compromising treatment alliance, a key component of treatment

effectiveness, and

- Adequately addressing responsivity issues for older offenders and individuals with cognitive deficits, ADHD, or other learning disabilities.

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