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Evaluation Report: Motivation Based Intervention Strategy

Evaluation Branch
Policy Sector
May 2010

Canada

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ACKNOWLEDGEMENTS

The evaluation team would like to express our appreciation to staff and management of Kent Institution, Mountain Institution, and Matsqui Institution for their participation in completing an online survey. We would also like to express many thanks to those individuals who participated in the focus group session. Thank you also to Jim Love, Ronan Byrne, and Blake McClennon for their patience and support throughout this project. The team would also like to express gratitude to the evaluation consultative group - Isabelle Bastien, Sebastien Girard, Joanne Hewitt, Jim Love, Jason Scott, and Alanna Trayer - for their support in the timely completion of this evaluation. Further, much appreciation goes to Vanessa Green and Jean-François Talbot for their help in acquiring important staff training and financial information. We would also like to thank members of Performance Management for their timely response to our data request. A special thank you goes to Robin Lajeunesse for her contribution to the literature review. Notwithstanding their roles as members of the evaluation team, special thank you also goes to Hassimiou Ly for his assistance in developing the evaluation matrix that contributed to the enhancement of evaluation questions, as well as Christopher Rastin and Paul Verbrugge for their extensive work in extracting data and conducting statistical analyses for this project. Finally, we would like to express thanks to all offenders who participated in interviews and provided valuable information regarding MBIS.

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Correctional Service Canada's
Motivation Based Intervention Strategy

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EXECUTIVE SUMMARY

Introduction

This evaluation was conducted by Correctional Service Canada's (CSC) Evaluation Branch to provide decision-makers with information needed to make long-term strategic policy and investment decisions in the area of offender programs. As per the Treasury Board of Canada Secretariat's (TBS) *Policy on Evaluation*, the relevancy, implementation, success, and cost-effectiveness of the Motivation Based Intervention Strategy (MBIS) were examined.[1]

Offender motivation to participate in correctional plans and programs has been identified as a key challenge for CSC. In 1999, a working group established to study social reintegration programs at the Special Handling Unit (SHU) recommended that programs incorporate motivation enhancement interventions targeted at offenders resistant to program involvement and correctional planning. A workplan was subsequently produced which led to the development of MBIS in October 2002. MBIS was then implemented at the SHU in April 2003, and was later incorporated into the Segregation Intervention Strategy at six maximum security institutions. MBIS was also incorporated into the Integrated Correctional Intervention Strategies (ICIS), which was piloted at Kent, Millhaven and Atlantic Institutions between 2003 and 2006. This initiative was implemented to address challenges in maximum security settings such as the management of disruptive offenders, the timely delivery and completion of correctional programs, and the lack of positive interactions between staff and offenders. Following the cessation of ICIS, MBIS continued to be delivered at various sites nationally in order to address factors such as consistently high rates of offenders in segregation and low rates of program participation.

The present evaluation focused mainly on Kent Institution. During the ICIS pilot project, Kent Institution fully implemented MBIS and did so more successfully than the other institutions involved in the pilot. Further, Kent Institution has continued to incorporate the MBIS approach, both through staff training and offender intervention in segregation and in the Enhanced Structure Unit (ESU). The implementation of MBIS at Kent Institution also led to the development of MBIS related activities at Moutain and Matsqui Institutions. Given that these are in the same region as Kent, they were also included in the evaluation.

Profile

The primary goal of MBIS is to increase offenders' motivation to change problem behaviours and, thus, participate in correctional plans and programs while also contributing to the safety and security of staff and other offenders.

MBIS is comprised of three main components: staff training, intervention, and skills workshops. The goal of the staff training is to raise staff awareness and understanding of the change process

[1] Please note that the Results-Based Management and Accountability Framework (RMAF) was developed prior to the 2009 Policy on Evaluation coming into effect, and therefore the present evaluation followed the approved framework and not the new policy format. However, it still meets the requirements by reporting on the same areas.

and motivational principles, thus contributing to a positive work and living environment for staff and offenders. The intervention component addresses an offender's low motivation to change and provides the necessary support and encouragement to help the offender engage in a positive change process. The skills workshops are designed to improve an offender's institutional adjustment by teaching self-regulation and interpersonal skills.

The motivation gained from the intervention, along with the skills acquired through the workshops, are expected to contribute to improved attitudes and behaviours among offenders, reduced institutional incidents, increased participation in correctional plans and programs, and ultimately, transfers to lower security facilities and successful parole releases.

Financial Expenditures

Kent Institution

		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	Total
Budget	Salaries	$100,000	$91,917	$91,667	$96,162	$83,333	$463,079
	Operating	$15,300	$0	$5,000	$6,160	$0	$26,460
Actual	Salaries	$102,646	$24,484	$31,113	$43,592	$81,327	$283,162
	Operating	$13,601	$7,668	$2,238	$0	$241	$23,748
						Total Actual	$306,910

Matsqui Institution

		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	Total
Budget	Salaries	-	-	-	-	$83,333	$83,333
	Operating	-	-	-	-	-	-
Actual	Salaries	-	-	-	$1,439	$14,848	$16,287
	Operating	-	-	-	-	-	-
						Total Actual	$16,287

Mountain Institution

		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	Total
Budget	Salaries	-	-	-	-	$69,127	$69,127
	Operating	-	-	-	-	$17,047	$17,047
Actual	Salaries	-	-	-	-	$96,498	$96,498
	Operating	-	-	-	-	$15,991	$15,991
						Total Actual	$112,489

Kent, Matsqui & Mountain Institutions

		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	Total
Budget	Salaries	$100,000	$91,917	$91,667	$96,162	$235,793	$615,539
	Operating	$15,300	$0	$5,000	$6,160	$17,047	$43,507
Actual	Salaries	$102,646	$24,484	$31,113	$0	$192,673	$395,947
	Operating	$13,601	$7,668	$2,238	$45,031	$16,232	$39,739
						Total Actual	$435,686[a]

Note: [a] Please note that the total expenditures recorded for MBIS account for only 28 percent of reported allocations.

Source: Integrated Management Reporting System (IMRS)

Evaluation Strategy

The current evaluation applied a multi-method approach that incorporated quantitative and qualitative methodology to address the outlined evaluation objectives. This approach included:

- A focus group session;
- Interviews with key informants;
- Interviews with offenders;
- Stakeholder surveys;
- A review of CSC and governmental documentation;
- A review of program data/documentation;
- A review of the academic literature;
- Staff training information obtained from the Human Resource Management System (HRMS);
- Financial data obtained from the Integrated Management Reporting System (IMRS); and,
- Automated data obtained from CSC's Offender Management System (OMS) and RADAR.

It should be noted that the current evaluation has a number of limitations. First, only a small number of staff members responded to the institution-wide survey, particularly at Kent Institution where there were only 11 respondents. This is problematic considering the focus of this evaluation was on Kent Institution and it is the only institution of the three examined to have delivered the intervention to offenders. Similarly, the number of offenders interviewed was quite small due to timeframes and scheduling difficulties. Also a limitation of the evaluation was the general lack of program data available. Specifically, only 58 offender cases from OMS were available for analysis. Further, data on treatment readiness, treatment responsivity and treatment gain were not available given the incompletion of tests with offender participants as required, resulting in the inability to examine changes pre- and post-intervention.

Overview of Findings and Recommendations

Overall, given the motivation levels of offenders in CSC, particularly in maximum security institutions, the present evaluation found that motivation-based approaches are relevant for CSC and should be continued. However, the evaluation revealed several design and implementation issues that, as a result, made it difficult to assess the extent to which MBIS achieved its expected outcomes. Statistical analyses based on the available data did not reveal MBIS to have contributed to changes in offender attitudes, behaviours, or correctional outcomes; however, qualitative data from staff surveys and offender interviews suggested that the intervention strategy delivered at Kent Institution may have had a positive impact on offenders in terms of increasing their understanding and overall motivation to change disruptive behaviours.

A list of key findings and corresponding recommendations presented below could form the foundation for re-positioning MBIS and revising its current delivery practices to what it was originally intended, should MBIS be fully implemented and/or integrated as a key component of the Integrated Correctional Program Model (ICPM).

List of Key Findings

Finding 1: Motivation-based interventions are consistent with the correctional priorities and reintegration strategies of CSC. Further, there is a demonstrable need for motivational interventions given the current levels of offender motivation within CSC, and in particular at maximum security institutions.

Finding 2: The manner in which MBIS is delivered differs from its original design. Variances were identified between institutions, with Kent Institution delivering the intervention directly to offenders and Mountain and Matsqui Institutions focusing on staff interactions.

Finding 3: A large number of staff members have participated in general staff awareness training aimed at exposing them to MBIS principles. Intervention and Skills Workshop training has not occurred since 2006.

Finding 4: Clear selection criteria have not been established for MBIS, as all offenders who show interest in the initiative are accepted as participants. However, the profile of participants available demonstrated that MBIS is primarily being delivered to offenders with medium motivation levels, followed by low levels.

Finding 5: Incomplete data recording was revealed, affecting CSC's ability to properly determine the extent of offender participation and progress in MBIS.

Finding 6: Difficulties in the coordination of MBIS between NHQ and the Pacific Region have been encountered, impeding the overall management and implementation of the intervention strategy.

Finding 7: Staff respondents indicated that MBIS staff training contributed to increased awareness (of motivational techniques) and improved attitudes, suggesting that staff awareness training has provided a good foundation of MBIS principles to date.

Finding 8: Quantitative analyses revealed no significant differences in CPPR offender motivation levels pre-post MBIS. However, feedback from offender interviewees indicated positive effects in increasing offenders' understanding of, and motivation to change, disruptive behaviours.

Finding 9: Quantitative and qualitative analyses did not reveal MBIS to have an effect on offenders' participation in correctional plans and programs.

Finding 10: Quantitative analyses did not reveal MBIS to have contributed to a reduction in institutional incidents and disruptive behaviours, and feedback from survey and interview respondents regarding this outcome was mixed.

Finding 11: Quantitative data did not reveal MBIS participation to have an effect on offenders' transfer to lower security facilities or successful parole release.

Finding 12: Based on available data, cost-effectiveness analyses did not demonstrate the strategy's ability to achieve value for money.

Finding 13: Staff members appeared to agree that, overall, the MBIS training contributed to positive effects at the staff level and that MBIS has the potential for positive effects at the offender level if the intervention is to be fully implemented.

List of Recommendations

Recommendation 1: Given that offender motivation is essential to correctional interventions, CSC should integrate, where appropriate, motivation-based approaches into correctional reintegration strategies, such as the ICPM.

Recommendation 2: Notwithstanding that offenders can benefit from motivation-based approaches, CSC should establish selection criteria in order to effectively reach offenders who require a motivational intervention strategy to foster their participation in correctional programs.

Recommendation 3: In order to demonstrate key correctional results of MBIS, a clear data collection and tracking strategy should be established.

Recommendation 4: CSC should ensure, where appropriate, that staff members are trained in and encouraged to apply the MBIS model in order to foster an environment where offenders can effectively participate in their correctional plans.

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LIST OF ACRONYMS

AC	Autocorrelation
ACCOP	Assistant Commissioner, Correctional Operations and Programs
ARIMA	Auto Regressive Integrated Moving Average model
CD	Commissioner's Directive
CSC	Correctional Service Canada
CPPR	Correctional Plan Progress Report
ESU	Enhanced Structure Unit
EXCOM	Executive Committee
HRMS	Human Resource Management System
ICIS	Integrated Correctional Intervention Strategies
ICPM	Integrated Correctional Program Model
IMRS	Integrated Management Reporting System
KIT	Kent Intervention Training
MBIS	Motivation Based Intervention Strategy
MI	Motivational Interviewing
NHQ	National Headquarters
OMS	Offender Management System
PAC	Partial Autocorrelation
PMMR	Performance Measurement and Management Reports
RMAF	Results-Based Management and Accountability Framework
RPP	Report on Plans and Priorities
SHU	Special Handling Unit
TBS	Treasury Board Secretariat
TTM	Transtheoretical Model of Change
VPP	Violence Prevention Program
WED	Warrant Expiry Date

1.0 INTRODUCTION

1.1. Background

Offender motivation to participate in correctional plans and programs has been identified as a key challenge for Correctional Service Canada (CSC). Findings from CSC's Review Panel (2007) suggest that increased efforts are needed to enhance offender "responsiveness" to engage in correctional plans. In its final report, the Panel proposed that strategies such as motivation-based approaches be introduced into correctional practices to decrease offenders' resistance to participate in correctional plans.

Recommendations 16a and 16c of the report, state that, in order to ensure that offenders participate in and successfully complete programs included in their correctional plans, CSC should:

- Shorten the period of intake assessment and consider opportunities to begin correctional programming (behavioural and motivation-focused) during intake assessment, particularly for offenders with short sentences of four years or less; and,
- Change its program methodology to allow for the introduction of program 'modules' that facilitate offenders beginning a program.

Furthermore, in Recommendation 18, the Panel recommended that CSC review the reasons for low offender participation rates in its adult basic education programs and identify new methodologies to motivate and support offenders in attaining education certificates prior to, or by the end of, their conditional release period.

In addition, CSC's Reports on Plans and Priorities (RPP)[2] have identified offenders' motivation to change as a key issue. In fact, the 2005/2006 RPP lists the Motivation Based Intervention Strategy (MBIS; CSC, 2005c) as a possible intervention to respond to one of CSC's program priorities "to develop and implement targeted programs and case management strategies for higher risk offenders".

Further, in the 2006/2007 RPP, CSC committed to providing Parole Officers with the skills necessary to motivate resistant offenders and reinforce their behavioural gains (CSC, 2006c). Thus, CSC committed to continue offender motivation training with Parole Officers. Past RPPs (2001/2002, CSC, 2001; and 2002/2003, CSC, 2002) have also identified offender

[2] CSC's Reports on Plans and Priorities can be found at: http://www.tbs-sct.gc.ca/rpp/index-eng.asp

motivation as a key factor in the management of offenders and commitments were made to implement targeted interventions aimed at increasing offenders' motivation to change.

1.2. Context

In 1999, at the request of the Senior Deputy Commissioner, a working group was established to study social reintegration programs at the Special Handling Unit (SHU). One of the duties set out in the working group's mandate was to analyse offender involvement in programs and related challenges. Based on the working group's findings, assistance and motivation for reintegration was substantially limited by behavioural and environmental factors such as physical context, fragmentation of the population and offender motivation. In its final report (CSC, 1999), the working group made several recommendations aimed at improving program delivery at the SHU and encouraging offenders incarcerated at the SHU to become more involved in their correctional plans. In particular, it was recommended that SHU programs incorporate motivation enhancement interventions to assist offenders who were resistant to program involvement and correctional planning and that staff working at the SHU receive motivational interviewing training to help offenders achieve reintegration objectives. Subsequent to those recommendations, a workplan was produced which led to the development of MBIS in October 2002. MBIS was then implemented at the SHU in April 2003 for offenders who were showing resistant behaviours and not participating in correctional plans and programs.

Shortly after its implementation at the SHU, MBIS was incorporated into the Segregation Intervention Strategy (previously called "Segregation Pilot Program") to enhance programming in segregation units at six maximum security institutions (Atlantic, Edmonton, Port Cartier, Kingston, Donnacona, and Kent Institutions).

MBIS was also incorporated into the Integrated Correctional Intervention Strategies (ICIS), which was piloted in three maximum security institutions (Kent, Millhaven and Atlantic Institutions) between 2003 and 2006. This initiative was implemented to address challenges in maximum security settings such as the management of disruptive offenders, the timely delivery and completion of correctional programs and the lack of positive interactions between staff and offenders. ICIS was comprised of three interrelated components: (1) structural units (creation of three separate units – Orientation, Enhanced Structure Unit [ESU] and Reintegration); (2) staff training in the MBIS approach; and (3) the MBIS intervention for offenders in the ESU

(intervention and skills workshops). The ICIS pilot project ceased in 2006 due to lack of funds and supporting results. According to the ICIS Phase 1 Results Report (Blanchette & Moser, 2006), significant structural, population, and operational issues impeded full implementation of the pilot project as planned, which also limited the availability of data to examine the extent to which expected results were achieved. Following the cessation of ICIS, MBIS continued to be delivered at various sites nationally in order to address factors such as consistently high rates of offenders in segregation and low rates of program participation.

The present evaluation focused mainly on Kent Institution. During the ICIS pilot project, Kent Institution fully implemented MBIS and did so more successfully than the other institutions involved in the pilot. Further, Kent Institution has continued to incorporate the MBIS approach, both through staff training and offender intervention in segregation and in the ESU. The implementation of MBIS at Kent Institution also led to the development of MBIS related activities at Moutain and Matsqui Institutions. Given that these are in the same region as Kent Institution, they were also included in the evaluation. Specific implementation challenges, as well as differences between the three institutions, will be discussed in the Implementation Key Findings section of the report.

1.3. Motivation Based Intervention Strategy Profile

The primary goal of MBIS is to increase offenders' motivation to change problem behaviours and, thus, participate in correctional plans and programs while also contributing to the safety and security of staff and other offenders.

1.3.1. Objectives

MBIS was developed to incorporate three main components: staff training, intervention, and skills workshops. The specific objectives for each are as follows (CSC, 2005a):

a) ***Staff Training****:* The training is designed to raise staff awareness and understanding of the change process and motivational principles, thus contributing to improved attitudes towards change and rehabilitation among staff (Prochaska & DiClemente, 1986), as well as improved relationships and communication among staff and offenders (Miller & Rollnick, 1991; 2002). It is expected that this approach will lead to a more positive work and living environment for staff and offenders.

b) ***Intervention****:* The intervention addresses an offender's low motivation to change and provides the necessary support and encouragement to help the offender engage in a positive change process. The change process is intended to help the offender accept personal responsibility for changing problem behaviour. It is expected that an offender who is able to accept this responsibility will be more likely to complete correctional plans and programs (Prochaska & DiClemente, 1986).
c) ***Skills Workshops****:* The workshops are designed to improve offenders' institutional adjustment by teaching self-regulation and interpersonal skills.

The skills acquired through the workshops, along with the motivation gained from the intervention, are expected to contribute to improved attitudes and behaviours among offenders, reduced institutional incidents and increased participation in correctional plans and programs. In the long-term, this is expected to contribute to transfers to lower security facilities and successful releases on parole.

1.3.2. Description

MBIS Staff Training

The training sessions were developed to address a variety of different issues such as offender motivation, teamwork and positive communication, efficient work environments, and offenders' ability to change.

A total of five training sessions were developed for MBIS (CSC, 2005b):

- *MBIS Two-day Initial Training (MBIS-1) and Refresher Training (MBIS-3)*: These training sessions are designed for frontline staff. MBIS-1 introduces the MBIS initiative and lays the groundwork for a motivation-inducing environment. MBIS-3 is a refresher session that is given one year after the initial training;
- *MBIS Advanced Training (MBIS-4)*: The goal of this training session is to prepare frontline staff to use the MBIS approach with disruptive offenders by practicing the different strategies and techniques of the intervention; and,
- *MBIS Intervention Training (MBIS-2) and Skills Workshops Training (MBIS-5)*: The goals of these sessions are to prepare Correctional Program Officers and Parole Officers to deliver the intervention and the skills workshops.

Overall, the staff training focuses on the principle of responsivity (Andrews & Bonta, 2003) to allow MBIS facilitators to accept the learning processes of change-resistant offenders. Flexibility and motivational skills are developed to help manage resistance. An MBIS facilitator is taught to adjust to an offender's personal learning style and pace which involves being responsive to an offender's attention, education level, independence, maturity, reading ability, and culture. This is expected to contribute to offenders' receptivity towards treatment (CSC, 2005a).

MBIS Intervention

The MBIS intervention is based on three well-known models for change and motivation (CSC, 2005a): the Transtheoretical Model (TTM) of change developed by Prochaska and DiClemente (1986), the principles of motivational interviewing (MI) by Miller and Rollnick (1991), and Marlatt's (1998) harm reduction model.

Prochaska and DiClemente (1986) developed the transtheoretical model (also known as the stages of change model). The premise of the model is that the client must develop a strong motivation to change his/her behaviour and have confidence in their ability to change. Change occurs in five stages: (1) precomtemplation; (2) contemplation; (3) preparation; (4) action; and (5) maintenance. MBIS is delivered in four stages. During the first stage, the MBIS facilitator assists the offender to identify problem behaviours and lessen resistance to change. The second stage aligns with the contemplation stage during which the facilitator works to strengthen the offender's ambivalence about change, while stage three allows the MBIS facilitator to help the offender to overcome ambivalence and increase motivation to change. The offender is then expected to focus on his goals and reflect on the potential positive impact that will occur as a result of change. The fourth stage involves developing an action plan for change. When the offender is ready to move on to the action stage, he is then able to attend the skills workshops.

MBIS is also based on the principles of motivational interviewing: (1) showing empathy; (2) avoiding argument; (3) accepting resistance; (4) strengthening personal effectiveness; and (5) developing cognitive dissonance (Miller & Rollnick, 1991, 2002). The first three principles are vital to creating a relationship of trust between an offender and the MBIS facilitator. The fourth activity is essential for motivation to change since this helps the offender build confidence

in his ability to change successfully. The fifth activity aids in the development of cognitive dissonance whereby the offender identifies his short-, medium-, and long-term goals.

In addition, MBIS draws on the philosophy of Marlatt's harm reduction model (Marlatt, 1998). The MBIS facilitator is expected to respect the goals identified by the offender and accept any behavioural improvements, in order to encourage change that lessens the negative effects of problem behaviours.

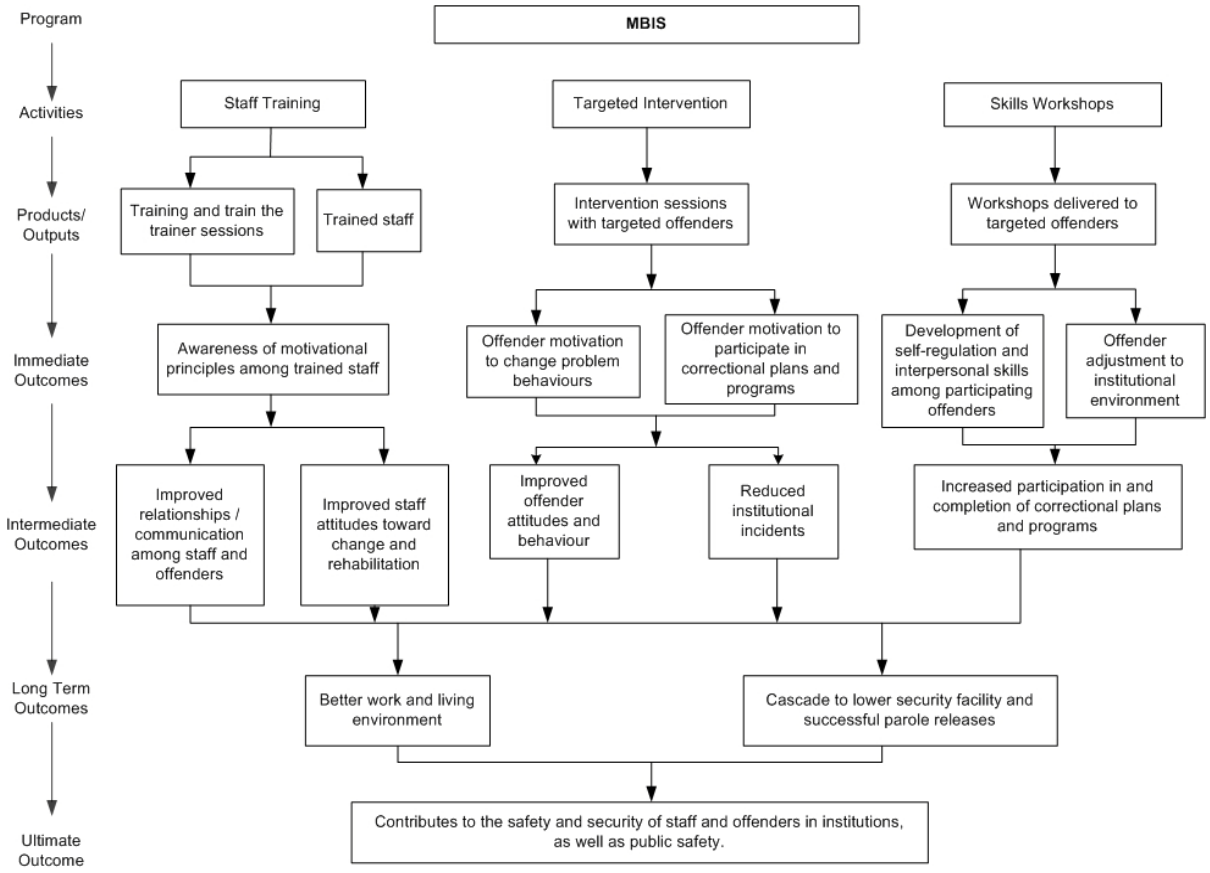
MBIS Skills Workshops

To the extent that an offender's disruptive behaviours are linked to skill deficits, the offender may participate in skills workshops following the intervention. The workshops are based on other correctional programs, particularly violence prevention. Given that the workshops assume that the offender lacks certain skills, the focus is on acquiring and practicing skills identified by the offender. Specific skills include: self-monitoring; self-control; communication; high-risk thinking; slips and cravings management; and problem-solving.

1.3.3. Logic Model

The logic model identifies linkages between the activities of a policy, program, or initiative and the achievement of its outcomes. As demonstrated in Figure 1, the MBIS logic model delineates the philosophy and relevant issues that underline the basic principles of MBIS and identifies the inter-linkages between the initiative's activities and intended outcomes.

Figure 1: MBIS Logic Model



As a result of MBIS, it is expected that:

- Staff members will develop an increased awareness and understanding of change processes and motivational principles, allowing them to develop positive attitudes towards rehabilitation, thereby leading to improved relationships and communication with offenders;
- Offenders will become increasingly motivated to change their problem behaviours and acquire the skills necessary to improve attitudes and behaviours; and,
- Offenders will engage in, and complete, correctional plans and programs, leading to an eventual cascade to lower security level institutions and successful parole releases.

1.3.4. Governance Structure

The Assistant Commissioner, Correctional Operations and Programs (ACCOP), is ultimately accountable for MBIS. The Director, Reintegration Programs, is accountable for the delivery of MBIS. As such, the management of MBIS and its content are the responsibility of the Program Manager, Male Offender Programs, in the Reintegration Program Division reporting to the Director. At the institutional level, those individuals who deliver the intervention to offenders report to the Manager, Programs.

1.3.5. Financial Expenditures

MBIS appeared to have been funded through three different sources:

1. According to financial records provided by National Headquarters (NHQ) and the Pacific region, carry-forward funds were provided in support of MBIS from 2005-2006 to 2007-2008. These allocations were provided for training purposes. More specifically, Kent Institution was allocated $110,300 in 2005-2006, $200,000 in 2006-2007, and $102,000 in 2007-2008.[3] In 2007-2008, Matsqui Institution was allocated $150,000.
2. Since 2005-2006, MBIS was supported through funds reallocated from the Segregation Intervention Strategy (CSC, 2006b). These funds appeared to stem from Treasury Board allocations secured under the 1999 National Capital Accommodation and Operations Plan (NCAOP) to implement the Violence Prevention Program.[4] Funding received under this submission was to fund a psychologist (PS-04) and a program officer (WP-04) to deliver the program. Annual funding requirements identified in the submission were $138,453 (CSC, 2008).
3. In 2008, CSC's Executive Committee (EXCOM) approved an annual allocation of $300,000 to continue MBIS in the Pacific region. These funds were coded under CSC's allocation model and are not reflected under a specific initiative.

The total allocations for MBIS since 2004-2005 was $1,551,412 (see Table 1).

[3] Despite being unable to confirm through a record of decision, Offender Programs and Reintegration indicated that CSC's Executive Committee (EXCOM) approved $250,000 annually in support of MBIS at Kent Institution in 2005 (source: A/Director General, Offender Programs and Reintegration, 2010-04-29).

[4] Given the role of these staff members in VPP, there is a possibility that they may have been coded elsewhere, partially explaining the discrepancy in expenditures of MBIS.

Table 1: Pacific Region MBIS Allocations

Source	2004-2005 [a]	2005-2006	2006-2007	2007-2008	2008-2009
Carry-forward funds		$110,300	$200,000	$252,000	
Segregation Intervention Strategy		$138,453	$138,453	$138,453	$138,453
EXCOM approval					$300,000
Other	$135,300				
Total	$135,300	$248,753	$338,453	$390,453	$438,453

Note: [a] Please note that Pacific Region allocations for this fiscal year were in the amount of $135,300, which were transferred from the operational reserve. The record of decision was unavailable to confirm the approval of this transfer

Source: Integrated Management Reporting System (IMRS)

The budget and actual expenditures of Kent, Matsqui, and Mountain Institutions are provided in Table 2.

Table 2: MBIS Budget and Expenditures[5]

Kent Institution

		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	Total
Budget	Salaries	$100,000	$91,917	$91,667	$96,162	$83,333	$463,079
	Operating	$15,300	$0	$5,000	$6,160	$0	$26,460
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	Operating	-	-	-	-	-	-
Actual	Salaries	-	-	-	$1,439	$14,848	$16,287
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						Total Actual	$435,686[a]

Note: [a] Please note that the total expenditures recorded for MBIS account for only 28 percent of reported allocations.
Source: Integrated Management Reporting System (IMRS)

[5] It is important to note that, despite the various allocation sources identified for MBIS, expenditures were only recorded under one code (i.e., 0064).

2.0 EVALUATION STRATEGY

The evaluation was conducted by CSC's Evaluation Branch to provide decision-makers with information needed to make long-term strategic policy and investment decisions in the area of offender programs. The evaluation was both formative and summative in nature, and addressed the issues of relevance, implementation, success, cost-effectiveness, and unintended outcomes. A detailed evaluation matrix can be found in Appendix A.

2.1. Evaluation Objectives

The following expected results were identified under each evaluation objective:

Objective #1: Relevancy

1) MBIS is consistent with correctional priorities and other reintegration strategies.

Objective #2: Implementation

1) MBIS is used as an intervention by Correctional Program Officers and other trained staff;
2) There is a high level of participation in MBIS by the target group;
3) MBIS operates according to standards identified in the strategy; and,
4) MBIS is coordinated between NHQ and regions.

Objective #3: Success

1) The expected outputs are being achieved as a result of the initiative;
2) Participation in MBIS staff training contributes to increased awareness and improved attitudes among correctional staff of motivational principles and stages of change;
3) Participation in MBIS contributes to an increase in offenders' understanding of and motivation to change disruptive behaviours;
4) Participation in MBIS assists offenders to become involved in, and to successfully complete, correctional plans/programs;
5) MBIS contributes to a reduction of institutional incidents and disruptive behaviours;
6) MBIS contributes to offenders' transfer to lower security facilities and/or successful parole releases; and,

7) MBIS contributes to improved communication between staff as well as between staff and offenders, ultimately contributing to a better working and living environment.

Objective #4: Cost-effectiveness[6]

1) The expected outputs/outcomes of MBIS have been effectively achieved with designated funding.

Objective #5: Unintended Impacts

1) Unanticipated outcomes.

2.2. Evaluation Methodology

The current evaluation applied a multi-method approach that incorporated quantitative and qualitative methodology to address the outlined evaluation objectives. This approach included:

- A focus group session;
- Interviews with key informants;
- Interviews with offenders;
- Stakeholder surveys;
- A review of CSC and governmental documentation;
- A review of program data/documentation;
- A review of the academic literature;
- Staff training information obtained from the Human Resource Management System (HRMS);
- Financial data obtained from the Integrated Management Reporting System (IRMS); and,
- Automated data obtained from CSC's Offender Management System (OMS) and RADAR.

[6] Due to implementation issues, there is no supporting evidence to determine if costs related to the MBIS are lower or comparable to other similar correctional programs.

2.2.1. Measures and Procedures

Focus Group

Staff training coordinators and MBIS facilitators from Kent, Mountain, and Matsqui Institutions were invited to participate in a focus group session with members of the Evaluation Branch. These individuals were also asked to invite other staff trained in MBIS from each of their respective institutions to participate. A total of 11 individuals participated in the focus group session; five were from Kent Institution, five were from Mountain Institution, and one was from Matsqui Institution. Participants were staff members involved in the operation, management, and administration of MBIS. Throughout the session, participants provided opinions and discussions regarding the implementation of MBIS, challenges encountered, and recommendations.

Interviews with Key Informants

Interviews were conducted via telephone with individuals (N = 5) who had been closely involved with the implementation and delivery of MBIS since its inception at Kent Institution. Their responses have been used throughout the evaluation report in order to clarify implementation issues as well as substantiate information and responses obtained through other means.

Interviews with Offenders

Evaluation Branch staff members interviewed a total of 15 offenders at Kent Institution who were participants of MBIS. The interview protocol included a combination of open- and closed- ended questions. Closed ended questions were primarily in the form of Likert scales and dichotomous (yes/no) questions. Eight of the interviewees were in the general population, while six were in segregation, and one was in protective custody. All except one offender reported currently participating in MBIS, and nine offenders indicated having previously participated in MBIS. Of the 15 offenders, nine reported receiving MBIS services while in general population, eight while in the ESU, seven while in segregation, one while in the SHU, and one while in protective custody.

Stakeholder Surveys

The questionnaire developed for staff respondents was created using SNAP Survey software. The survey included a combination of open- and closed-ended questions. Closed-ended questions were primarily in the form of Likert scales and dichotomous (yes/no) questions. Surveys were placed on CSC's InfoNet and were sent to all employees at Kent, Mountain, and Matsqui Institutions for voluntary completion over a two-week period. Other key stakeholders from NHQ involved in the development of the intervention strategy were also invited to participate. Once data collection was complete, survey responses were imported back into SNAP Surveys software and then exported to and analysed using the Statistical Package for the Social Sciences (SPSS). Qualitative data were transferred to a Microsoft Word document, where relevant themes were generated by Evaluation Branch analysts.

For the quantitative data, it should be noted that the "don't know" and unanswered responses were excluded when calculating frequencies and percentages. Furthermore, 5-point Likert scale responses were often aggregated into three categories, meaning that the lower points were aggregated, the mid-point remained, and the higher two points were aggregated. For example, "strongly disagree" and "disagree" were aggregated to "disagree", while "neither agree nor disagree" remained, and "agree" and "strongly agree" were aggregated to "agree".

The survey was designed for individuals who were at least moderately familiar with the goals and objectives of MBIS. Eighty-five individuals began the online survey, while 70 were familiar enough to complete the entire survey.

The majority of respondents reported their current position to fall under the title/category of correctional officers (22%; n = 15/69), followed by correctional programs (13%; n = 9/69), administration services (9%; n = 6/69), correctional managers (7%; n = 5/69), and health services (7%; n = 5/69). The remainder of titles/categories indicated were as follows: Assistant Warden, case management, chaplaincy, finance, food services, informatics, institutional services and supply, maintenance, parole officer, psychology, security, and other. Sixteen percent (n = 11/70) of survey respondents were from Kent Institution, 23% (n = 16/70) were from Matsqui Institution, 59% (n = 41/70) were from Mountain Institution, and 3% (n = 2/70) were CSC staff members from NHQ involved in the development of MBIS.

Document Review

Documents reviewed for various components of the evaluation included:

- Departmental reports (e.g., CSC Review Panel Report, RPPs) and policy documents (e.g., Commissioner's Directives [CD]);
- Program reports (e.g., Consultation Case File, ICIS Phase I Results Report, SHU Working Group Report, Results-Based Management and Accountability Framework [RMAF]) and documentation/data (e.g., training manuals, course attendance lists, treatment scales and data); and,
- Academic literature regarding offender motivation and motivational interviewing, the transtheoretical approach, and harm reduction.

Automated Data

The Offender Management System (OMS), an automated database maintained by CSC, was used to extract information concerning MBIS participants and a comparison group of offenders, as well as to determine the rates of various institutional outcomes.

2.2.2. Analyses

Interviews and Surveys

Frequencies and percentages were calculated for all closed-ended questions, and relevant themes were generated for all open-ended responses. The open-ended qualitative themes enhance and provide context for the quantitative data throughout the evaluation report.

Statistical Analyses

Two types of analyses were conducted: (1) offender-based analyses, and (2) institutional rate-based analyses.

Offender-based analyses were only conducted for participants at Kent Institution. More specifically, pre- and post-test comparisons were conducted on various measures (i.e., Correctional Plan Progress Report [CPPR], security classification, institutional misconduct charges, and program participation) for offenders who participated in MBIS. In addition, post-test comparisons were conducted with a comparison group of offenders selected based on one-to-one matching on the same measures. For each offender in the treatment group, one inmate from

Kent Institution was selected who best matched the treatment group offender on the following characteristics: (a) aggregate sentence length group; (b) age group; (c) security level; (d) Aboriginal status; and (e) CPPR risk. The reference date, after which the post-test measures were taken, was calculated based on the proportion of time the comparison's match in the treatment group had served at the time when they first participated in MBIS.[7] Each offender was linked to his matched counterpart.

Offender-based data were analyzed using either the Wilcoxon Signed Rank Test[8] or a repeated measures logistic regression,[9] depending on the nature of the data.

Institutional rate-based analyses were conducted for Kent, Matsqui, and Mountain Institutions. Specifically, for the institutional rate-based analyses, an interrupted time-series design (i.e., Auto Regressive Integrated Moving Average model [ARIMA]) was used to examine change associated with the implementation of MBIS on the rates of various outcomes. Rates were calculated by month, from April 2000 to December 2009, for a total of 117 months. Rates for the following outcomes were calculated: (a) institutional charges; (b) involuntary segregation; (c) program/work participation; (d) security reclassification increases; and (e) security reclassification decreases. The implementation dates of MBIS differed between the three institutions, and, therefore, the length of the pre- and post-intervention periods differed between the institutions.

The summary findings of the interrupted time series analysis will be discussed in relation to the simple presentation of pre- and post-mean rates for the various outcome measures. A technical presentation of the results is provided in Appendix B.

[7] For example, if an offender in the treatment group first took MBIS at 1/3 into their sentence, the date at 1/3 of the matched comparison's sentence length would be their reference date. The first CPPR following this date was then selected.

[8] The Wilcoxon Signed-Rank Test is the distribution-free analogue of the t-test for related samples (Howell, 1997). The advantage of nonparametric tests is that they do not rely on parameter estimation and/or distribution assumptions and, therefore, the validity of the test is not affected by whether or not the distribution of the variable in the population is normal (Howell, 1997). This was appropriate given the data was positively skewed and involved a matched comparison group.

[9] A repeated measures logistic regression was appropriate for use with dichotomous data when a chi-square could not be conducted, given the groups were not independent because the sample was generated using a one-to-one matching procedure.

2.2.3. Limitations

The current evaluation has a number of limitations that should be considered. Further, several implementation issues with the intervention strategy were revealed during the course of the evaluation which created significant challenges in addressing key evaluation questions.

One limitation involved the use of the interview and survey protocols developed for the evaluation. More specifically, due to implementation issues encountered, the protocols used did not reflect how the intervention was implemented at the different institutions or the departure of the delivery of the intervention from its original design. For instance, during the interviews with offenders, several questions needed to be adapted to better reflect an offender's specific circumstances in relation to MBIS.

Another limitation was the small sample of staff members surveyed at the three institutions. Although all staff members were invited to participate, the response rate was quite low (6% of all staff members currently employed at the three institutions). Therefore, responses may not be generalizable to all staff members. This also affected the ability to examine staff views on the changes in the institutional environment as a result of MBIS. Further, a very small proportion of staff members from Kent Institution responded to the survey. This is problematic considering the focus of the present evaluation was on Kent Institution as it was the only institution to deliver the intervention to offenders.

Similarly, the number of offenders interviewed was quite small due to limited time frames and scheduling difficulties. Many of the offenders who had participated in MBIS were in segregation due to the closure of the ESU, which affected Evaluation Branch team members' access to them. Responses, therefore, may not be generalizable to all MBIS participants.

Also a limitation was the general lack of available program data. For instance, the appropriate documentation to track offenders' progress pre- and post-MBIS (i.e., Treatment Readiness, Treatment Responsivity, and Treatment Gain Scales) was not completed. Further, the pre- and post-MBIS evaluations conducted with staff during training sessions were not done consistently. Incomplete data files, therefore, resulted in the inability to statistically examine changes pre- and post-intervention.

In addition, coding errors were encountered with staff training data, affecting the ability to determine the precise number of staff who had been trained in the various MBIS sessions.

Finally, there were a relatively small number of MBIS participants in the data drawn from OMS that were used to conduct offender-based analyses. It appears that only those considered to have completed MBIS were actually recorded in OMS, while those who had completed only some elements were not recorded. MBIS facilitators kept records of offenders exposed to MBIS regardless of completion; however, these data are not reliable as participation rates, end dates, and reasons for non completion are unknown.

3.0 KEY FINDINGS

Results are presented under their respective evaluation objectives, namely: (1) relevancy, (2) implementation, (3) success, (4) cost-effectiveness, and (5) unintended/other findings.

3.1. Evaluation Objective 1: Relevancy

Evaluation Objective: *Is MBIS consistent with departmental and government wide objectives and priorities?*

Finding 1: Motivation-based interventions are consistent with the correctional priorities and reintegration strategies of CSC. Further, there is a demonstrable need for motivational interventions given the current levels of offender motivation within CSC, and in particular at maximum security institutions.

Consistency with Correctional Priorities and Reintegration Strategies

The goal of MBIS to increase offenders' motivation to change problem behaviours is consistent with the CSC's Mission Statement[10] in "contributing to public safety by actively encouraging and assisting offenders to become law-abiding citizens, while exercising reasonable, safe, secure and humane control". The initiative is also linked to CSC's Correctional Intervention Program Activity and supports CSC's strategic outcome that custody, correctional interventions, and supervision of offenders in communities and institutions contribute to public safety (CSC, 2009b).

Consistent with this, the majority of staff members surveyed agreed that the goals and objectives of MBIS are consistent with the mission of CSC (89%; *n* = 62/70). Through qualitative statements, staff respondents also reported that MBIS is consistent with the mandate of CSC (*n* = 5) and that it provides additional tools for staff (*n* = 5). When asked to describe, in their own opinion, the goals and objectives of MBIS, the primary responses given by staff were to motivate offenders to change problem behaviours (*n* = 40), to improve communication (*n* = 25), to motivate offenders to participate in their programs and correctional plans (*n* = 15), and to enhance the safety and security of the institution (*n* = 9).

[10] CSC's Mission Statement is available through its web-site at: http://www.csc-scc.gc.ca/text/index-eng.shtml

Need for Improving Offender Motivation & Motivational Interventions

Offender motivation to change behaviour and participate in correctional programs has important implications for program outcomes and completion (Bottos, 2009; Stewart & Cripps Picheca, 2001). Offenders who drop out of or are expelled from correctional programs have been found to be generally higher risk, higher need, and have lower levels of motivation for intervention than offenders who complete programs (Nunes & Cortoni, 2006). Further, dropouts have been found to have higher recidivism rates on release (Bottos, 2009; Hanson et al., 2002; Stewart & Cripps Picheca, 2001). It has, therefore, been suggested that the delivery of preparatory programs to high-risk/high-need offenders to address responsivity issues (such as low motivation) may reduce the likelihood of dropout and expulsion (Nunes & Cortoni, 2006). Consistent with this, a recent meta-analysis demonstrated that programs that adhered to the risk-need-responsivity principles showed the largest reduction in sexual and general recidivism (Hanson, Bourgon, Helmus, & Hodgson, 2009).

Thus, there is a demonstrable need for motivational techniques in the area of corrections in order to increase the likelihood of offenders' successful program completion, and ultimately, reintegration into society. Strategies such as motivational interviewing and the transtheoretical model of change have been applied to many areas of intervention, including corrections.

Motivational Interviewing and the Transtheoretical Model of Change

MI is a complex communication method for enhancing intrinsic motivation that is founded on the belief that motivation is a state of readiness to change that can fluctuate over time and across different situations (Miller & Rollnick, 1991). It was developed as a practical strategy to prepare individuals to change behaviour or participate and fully engage in therapy. This is done by creating a positive atmosphere through expressing empathy, identifying the discrepancy between the individual's current behaviour and goals, avoiding argument and confrontation, rolling with resistance by reframing client statements toward change and encouraging problem solving, and supporting self-efficacy (Miller & Rollnick, 1991). MI is often discussed in combination with the TTM of Change that was developed by Prochaska and DiClemente (1986), and recognises that not every client is ready to change and may differ in their level of readiness (Andrews & Bonta, 2003).

There is ample evidence of the effectiveness of MI and TTM for drug, alcohol and tobacco addiction (Carey, Carey, Maisto, & Purnine, 2002; Carroll et al., 2006; DiClemente, Bellino, & Neavins, 1999; Lincourt, Kuettel, & Bombardier, 2002; McKee et al., Mendel & Hipkins, 2002; Schneider, Casey, & Kohn, 2000; Spirito et al., 2004). Mixed results have been found when MI and TTM have been extended to target mental (Chanut, Brown, & Dongier, 2005; Martino, Carroll, O'Malley, & Rounsaville, 2000; Westra & Dozois, 2006) and physical (Dunn, Neighbors, & Larimer, 2006) health concerns.

More recently MI, sometimes considered within a TTM framework, has been applied to correctional populations with the purpose of engaging offenders in treatment in order to reduce recidivism. For example, in a study of probation services, the application of MI was significantly associated with an improvement in offender attitudes (Harper & Hardy, 2000). MI can also be considered a particularly appropriate intervention to implement in a correctional setting due to its brevity, its efficacy as a pre-treatment and stand alone intervention, and its ability to function with limited resources (Stein et al., 2006).

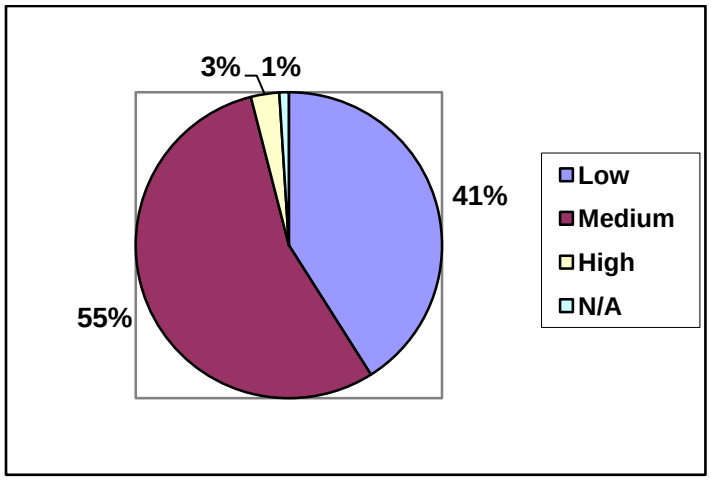
CSC's Current Environment

An offender's level of motivation is assessed at intake and at various points throughout his/her sentence, and can be rated as low, moderate, or high.[11] As of January 28, 2010, a population snapshot of CSC's federal institutions revealed that 6% of women offenders and 20% of men offenders were currently rated as having a low motivation level.[12] As previously noted, offenders with low motivation are more difficult to engage in the change process and tend not to complete programs. They therefore represent an important group requiring enhanced motivational intervention.

Given MBIS was initially developed to address issues identified at the maximum security level, a snapshot of offender motivation levels at CSC's maximum security institutions was examined (see Figure 2).[13] Fifty-five percent of offenders were rated as having a medium motivation level, followed by 41% who were rated as having a low motivation level, and 3% who were rated as having a high motivation level.

[11] Assessment of motivation is based on the guidelines established in *CD 710-1: Progress against the Correctional Plan* (CSC, 2007).
[12] Source: Extracted from RADAR on 2010-01-28. Includes primarily incarcerated offenders, but may also include suspended, supervised, on bail, remand, new sentence, and revoked.
[13] N/A refers to those offenders who have escaped or for whom there is no motivation level available.

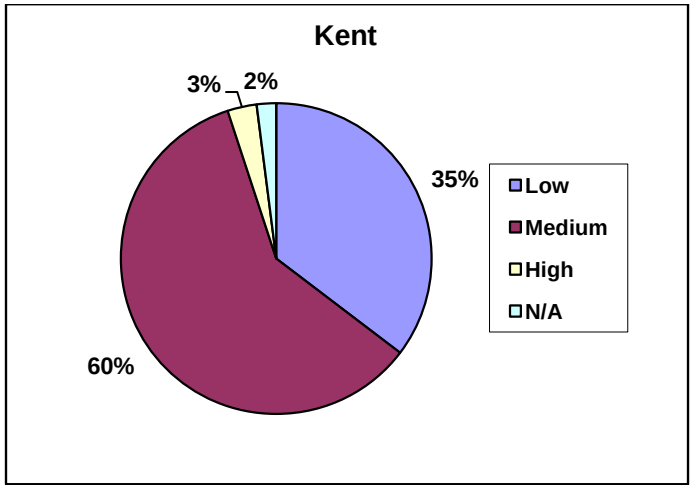
Figure 2: Offender Motivation Levels at CSC Maximum Security Institutions



Source: Extracted from RADAR on 2010-03-16

In the context of the current evaluation, snapshots of offender motivation levels at Kent, Matsqui and Mountain Institutions were also examined (see Figure 3 and Figure 4).[14] Thirty-five percent of offenders at Kent Institution were rated as having a low motivation level, while 17% and 22% were rated as having low motivation levels at Matsqui and Mountain Institutions, respectively.

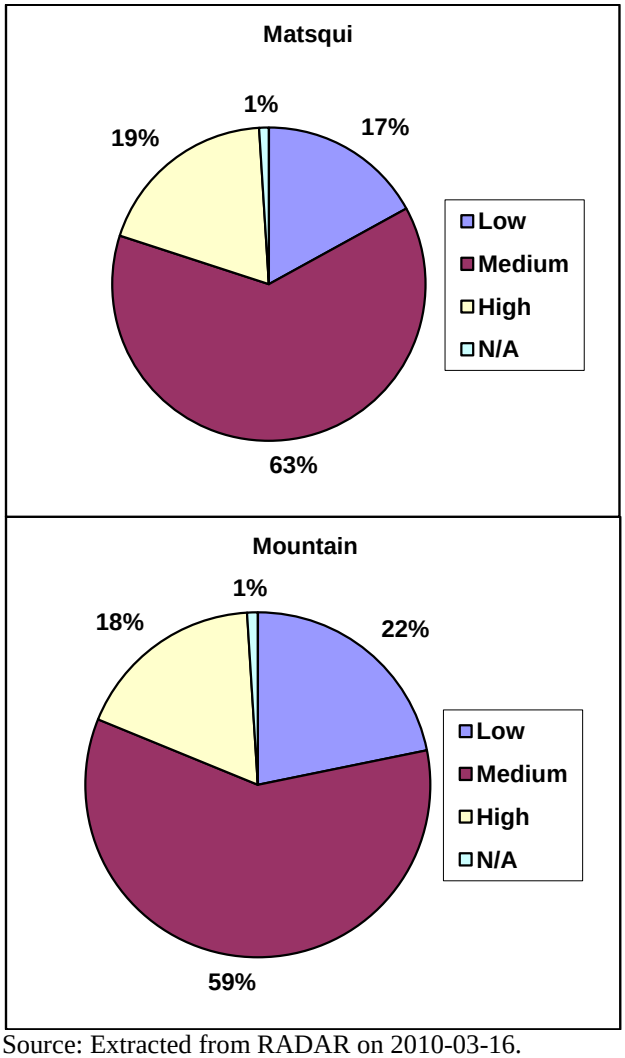
Figure 3: Offender Motivation Levels at Kent Institution



Source: Extracted from RADAR on 2010-03-16.

[14] Ibid.

Figure 4: Offender Motivation Levels at Matsqui & Mountain Institutions



Source: Extracted from RADAR on 2010-03-16.

Consistent with these findings, a large proportion of staff survey respondents agreed that MBIS responds to an identified need (94%; *n* = 50/53). Qualitative statements provided included the need to encourage and motivate offenders to change problem behaviours (*n* = 18), the need to encourage offenders to participate in their programs and correctional plans (*n* = 10), and the need for communication (*n* = 9).

Recommendation 1: Given that offender motivation is essential to correctional interventions, CSC should integrate, where appropriate, motivation-based approaches into correctional reintegration strategies, such as the ICPM.

3.2. Evaluation Objective 2: Implementation

Evaluation Objective: *Has MBIS been implemented in such a way that goals and objectives can be realistically achieved, and have implementation issues been adequately considered?*

Finding 2: The manner in which MBIS is delivered differs from its original design. Variances were identified between institutions, with Kent Institution delivering the intervention directly to offenders and Mountain and Matsqui Institutions focusing on staff interactions.

Despite the fact that the majority of staff members who completed the survey indicated that the goals and objectives of MBIS are consistent with CSC and that the intervention strategy responds to an identified need, only half agreed that the goals and objectives of MBIS were actually achieved (54%; *n* = 34/63) and that it was implemented as designed (51%; *n* = 28/55). Subsequently, many staff also reported factors that have affected the delivery and implementation of MBIS (89%; *n* = 40/45), such as training issues (*n* = 16), lack of interest (*n* = 8), and financial issues (*n* = 5). These responses are also consistent with the discussions that took place during the focus group session and the interviews with key informants indicating substantial challenges in the implementation of MBIS. Such implementation issues will be explored in more detail for Kent Institution compared to Mountain and Matsqui Institutions.

Implementation Differences

Through multiple sources of information (e.g., focus group discussions, interviews with key informants, stakeholder surveys, documentation), it was determined that not all aspects of MBIS were being implemented at the three institutions. At Mountain and Matsqui Institutions, the intervention and skills workshops components of MBIS have not been implemented with offenders, and thus MBIS-related activities remain at the staff level. It should be noted that, for these institutions, there was no intention to implement the intervention directly with offenders. In comparison, MBIS is being utilised with offenders at Kent Institution. However, since its inception in 2003, the implementation of the intervention has altered.

Kent Institution

At the time of this evaluation, there was only one full-time MBIS facilitator and one Correctional Program Officer delivering MBIS on a part-time basis. Correctional Programs Officers at Kent Institution have not been trained to deliver the MBIS intervention since 2006. During interviews with key informants, it was determined that, overall, staff were resistant to receiving advanced training due to high caseloads and the amount of time MBIS required per offender.

Delivery of MBIS began with offenders in the segregation unit in November 2003, while it began with offenders in the ESU in October 2004. The purpose of the ESU was to provide a controlled and safe environment for offenders who required enhanced supervision and control, while assisting in facilitating behavioural change. It was primarily in this unit that MBIS was being delivered to offenders by a full-time MBIS facilitator, while the delivery of the intervention strategy in segregation lessened.

Through interviews with key informants it was determined that offenders placed in segregation voluntarily went from segregation to the ESU, where they were then assessed for reintegration back into the general population. However, during 2007, this transfer from segregation to the ESU ceased, and offenders were required to go directly to segregation or directly to the ESU based on risk assessment. This resulted in a boycott of the unit by offenders in the general population because the time required in the ESU was longer than that of segregation. This boycott inevitably caused complications in the delivery of MBIS. Since then, however, the ESU has been revised to follow the same 30-day time period as segregation.

Further complication in the delivery of MBIS was caused by construction in the ESU, which began in 2009 and resulted in its temporary closure. At the time of this evaluation, MBIS was being offered to offenders in different units (i.e., segregation, general population, protective custody). Offenders who were in the ESU were mainly relocated to the segregation unit. Based on preliminary observations by key informants, this relocation impacted the effectiveness of MBIS due to the difficulty accessing the intervention and the negative atmosphere within segregation. It is anticipated that construction will be completed in 2010 and the unit will re-open to all offenders.

Mountain & Matsqui Institutions

As noted, MBIS has not been formally implemented with offenders at Mountain and Matsqui Institutions. Staff members do not deliver the intervention or skills workshops, but rather incorporate MBIS principles of MI and TTM into their daily activities and interactions with each other. The focus at these institutions has therefore been on staff training in MBIS principles rather than on the delivery of the intervention with offenders. The expectation is that improved staff communication will contribute to a better overall environment for both staff and offenders, therefore increasing the likelihood of enhanced offender motivation.

Used as Intervention by Correctional Program Officers and Other Trained Staff

Finding 3: A large number of staff members have participated in general staff awareness training aimed at exposing them to MBIS principles. Intervention and Skills Workshop training has not occurred since 2006.

Staff Training

As noted in the description of MBIS, a primary component of the intervention strategy is staff training, which involves five possible sessions (i.e., two-day initial [MBIS-1]; intervention [MBIS-2]; refresher [MBIS-3]; advanced [MBIS-4]; and skills workshops [MBIS-5]). In addition, Kent Institution has incorporated a brief staff awareness session that is given prior to the two-day initial training, and has amalgamated the refresher training session with the Kent Intervention Training (KIT).[15] All training materials used are based on the manuals developed by the Reintegration Programs Division at NHQ. Specific materials based on MBIS principles have also been developed to facilitate training sessions at each of the institutions.

Staff training began at Kent Institution in 2003-2004, and all types of MBIS sessions were delivered. The MBIS-2 and MBIS-5 sessions have not been delivered since 2006. Matsqui and Mountain Institutions began delivering MBIS staff training in 2007-2008 and 2008-2009, respectively. However, as these institutions have not implemented the intervention or skills workshops with offenders, staff members do not partake in the MBIS-2 or MBIS-5 sessions.

[15] The staff awareness session has been labelled "MBIS-SA", while the amalgamated refresher-KIT training has been labelled "MBIS-7".

It is currently the goal of the three institutions to have all staff members trained in MBIS-1. MBIS training is a priority in the transformation action plans of each of the respective institutions. At the time of this evaluation, a total of 252 individuals at Matsqui Institution had been trained in MBIS-1, while at Mountain Institution, a total of 227 individuals were trained. During the same time frame, 159 individuals at Kent Institution were also trained in MBIS-1. See Table 3 for the number of staff trained in MBIS at Kent, Mountain, and Matsqui Institutions.[16]

Each of the institutions has a number of individuals trained to deliver MBIS training sessions to staff members. At the time of the evaluation there were six instructors at Mountain Institution, five at Matsqui Institution, and 11 at Kent Institution.[17]

Table 3: Number of Staff Trained in MBIS

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
MBIS-1 (Initial Training)								
Kent [a]	208	43	6	32	83	53	23	448
Mountain	-	-	-	-	-	182	45	227
Matsqui [b]	-	-	-	-	195	57	-	252
MBIS-2 (Intervention Training)								
Kent	-	1	5	-	-	-	-	6
MBIS-3 (Refresher Training)								
Kent	-	77	31	-	-	-	-	108
MBIS-4 (Advanced Training)								
Kent	-	23	-	-	-	-	-	23
MBIS-5 (Skills Workshops Training)								
Kent	-	2	2	-	-	-	-	4
MBIS-7 (Refresher-KIT Training)								
Kent	-	-	-	64	12	-	-	76
MBIS-SA (Staff Awareness Training)								
Kent	-	-	-	-	-	16	73	89

Note: [a] There appear to have been coding errors with regard to the 2008/2009 sessions at Kent Institution, as the training was coded as MBIS-2, and this did not take place. This has been corrected to reflect MBIS-1 training.
[b] There also appear to have been similar coding errors with regard to the 2007/2008 and 2008/2009 sessions at Matsqui Institution. This has also been corrected to reflect MBIS-1 training.
Source: Human Resource Management System (HRMS); Data reflects the period of 2002-01-01 to 2010-01-07.

[16] Please note that these numbers may not be completely accurate because of possible coding errors and the manner in which the data are coded in HRMS.
[17] At Kent Institution, eight staff members are able to deliver MBIS-1 training, three are able to deliver MBIS-3 training, six are able to deliver MBIS-7 training, and two are able to deliver MBIS-2 and MBIS-5 training.

An issue identified during the focus group session was that of high staff turnover. While staff may have received the appropriate MBIS training, many of these individuals had either moved on to different roles or are no longer present at the institutions. This may have been a contributing factor to the institutions' ability to fully implement the intervention. Further, turnover amongst senior management and changing priorities may have also affected the extent of staff training, affecting the delivery of MBIS.

Focus group participants indicated that, while having more training sessions would be beneficial, it is also important to give new staff time to adjust to the prison environment before receiving the training. It was therefore suggested that new staff members be trained in MBIS once they have been active in their roles for approximately one year. Further, participants recommended a combined training effort between the three institutions in order to maximize resources and train more staff.

Another issue raised by the focus group participants with regard to staff training was the difference between the traditional role in an institutional environment and the departure of MBIS from the traditional type of interaction between offenders and staff members. It was suggested that such factors be considered more in-depth during the training sessions and be included in the training manual and sessions. Focus group participants also recommended conducting training offsite, as this would help to overcome the influence of the institutional environment by creating a more cohesive learning setting. In fact, it was indicated that off-site training has been successful at Mountain Institution.

MBIS Utilized with Target Offenders

All offenders interviewed at Kent Institution indicated that the MBIS facilitator was the primary person to deliver MBIS. Through multiple sources of information (e.g., focus group discussions, stakeholder surveys, documentation), it was determined that individual meetings of approximately 45 minutes duration were conducted with offenders. These meetings specifically addressed problem behaviour identification through the reduction of resistance and ambivalence by enhancing intrinsic motivation. Further, skills workshops involved individual discussions with offenders during meetings regarding specific skills to be addressed. These sessions focused on the same areas as the structured skills workshops.

Participation by the Target Group

Finding 4: Clear selection criteria have not been established for MBIS, as all offenders who show interest in the initiative are accepted as participants. However, the profile of participants available demonstrated that MBIS is primarily being delivered to offenders with medium motivation levels, followed by low levels.

Even though an offender is placed in the ESU, he is not required to take part in MBIS activities. Conversely, offenders are not refused participation in MBIS, regardless of level of motivation or unit location (i.e., general population, segregation, ESU). Further, although a primary goal of MBIS is to motivate offenders to participate in their plans and programs, they can nonetheless request to participate in the MBIS if these have already been completed.

Consistent with this, all offenders interviewed (100%; *n* = 15/15) indicated that their participation in MBIS was voluntary. The majority of offenders interviewed indicated that the main reasons for their participation in MBIS included problem behaviours (47%; *n* = 7/15), attitudes (20%; *n* = 3/15) and support (27%; *n* = 4/15). All offenders interviewed (100%; *n* = 15/15) reported that MBIS was a good option for them, as it was a good source of support (40%; *n* = 6/15) and it helped with self-improvement (33%; *n* = 5/15).

Skills focused on during the motivational sessions included self-monitoring (40%; *n* = 6/15), problem-solving (40%; *n* = 6/15), communication (33%; *n* = 5/15), anger control (27%; *n* = 4/15), high risk thinking (27%; *n* = 4/15), and slips and craving management (27%; *n* = 4/15). All offenders were at least moderately satisfied with the sessions that focused on skill development. Seven offenders reported that the sessions helped them to achieve their goals in terms of skill development, and six offenders reported that the sessions helped them adjust to the institutional environment.

Recommendation 2: Notwithstanding that offenders can benefit from motivation-based approaches, CSC should establish selection criteria in order to effectively reach offenders who require a motivational intervention strategy to foster their participation in correctional programs.

Profile of MBIS participants at Kent Institution

Finding 5: Incomplete data recording was revealed, affecting CSC's ability to properly determine the extent of offender participation and progress in MBIS.

As previously noted in the limitation section, incomplete record keeping of offender participation in MBIS resulted in a relatively small number of participants actually having been recorded as having completed the intervention strategy. Therefore, the exact number of MBIS participants and the extent of their participation are unknown.

A total of 58 offenders were recorded in OMS as having completed MBIS at Kent Institution since implementation. Demographic information indicated that 28% (*n* = 16) were Aboriginal and 10% (*n* = 6) were serving a life sentence. The mean aggregate sentence length for those not serving a life sentence (*n* = 52) was 1981.19 days (*SD* = 1528) or 5.42 years (*SD* = 4.18). Seventy-eight percent (*n* = 45) had a Schedule I offence on their current sentence, while 7% (*n* = 4) had a Schedule II offence. Prior to participation in MBIS, 68% (*n* = 32/47) were rated as having a medium motivation level, while 32% (*n* = 15/47) were rated as having a low motivation level. The mean age at time of MBIS completion was 29.59 years (*SD* = 5.94).

The comparison group of offenders included 58 offenders from Kent Institution selected from OMS based on one-to-one matching. Demographic information indicated that 24% (*n* = 14) were Aboriginal and 10% (*n* = 6) were serving a life sentence. The mean aggregate sentence length for those not serving a life sentence (*n* = 52) was 2201.46 days (*SD* = 2259.49) or 6.03 years (*SD* = 6.19). Seventy-four percent (*n* = 43) had a Schedule I offence on their current sentence, while 14% (*n* = 8) had a Schedule II offence. With regard to motivation level prior to the reference date, 50% (*n* = 21/42) were rated as having low motivation, while 45% (*n* = 19/42) were rated as having medium motivation, and 5% (*n* = 2/42) were rated as having high motivation. The mean age at reference date was 28 years (*SD* = 6.47).

Recommendation 3: In order to demonstrate key correctional results of MBIS, a clear data collection and tracking strategy should be established.

Coordination between NHQ and the Pacific Region

Finding 6: Difficulties in the coordination of MBIS between NHQ and the Pacific Region have been encountered, impeding the overall management and implementation of the intervention strategy.

Multiple sources of information (e.g., key informant interviews, staff surveys) revealed difficulties in the coordination of MBIS between NHQ and the Pacific Region, indicating a need for improvement in this area in order to ensure proper implementation of the intervention. Overall perception suggested that NHQ should assign more resources to manage MBIS in order to achieve proper implementation. Furthermore, as previously noted, high staff turnover of senior management at the institutional level may have affected priority setting, and, accordingly, delivery of the intervention.

3.3. Evaluation Objective 3: Success

Evaluation Objective: *Is MBIS producing its planned outputs in relation to expenditure of resources, and meeting its planned results?*

Increased Awareness and Improved Attitudes among Staff

Finding 7: Staff respondents indicated that MBIS staff training contributed to increased awareness (of motivational techniques) and improved attitudes, suggesting that staff awareness training has provided a good foundation of MBIS principles to date.

The primary purpose of training all institutional staff in the MBIS approach was to increase awareness of motivational principles and improve attitudes towards offender change. As seen in Table 4, while staff survey respondents had varying opinions on how much MBIS contributed to these goals, the majority agreed that MBIS at least "moderately" contributed to enhanced awareness and attitudes among staff members. Qualitative statements indicated that MBIS contributed to a better understanding of other staff members' roles and improved communication among staff members (n = 17). Conversely, several individuals indicated that the training activities for staff were not effective (n = 6).

Table 4: Staff Survey Responses regarding Awareness and Attitudes among Staff

	Not at All or Slightly	Moderately	Considerably or Extremely
	n (%)	*n* (%)	*n* (%)
Has MBIS contributed to:			
The appropriate identification of offenders with motivational problems (*n* = 52)	15 (29%)	15 (29%)	22 (42%)
Staff awareness of motivation principles (*n* = 62)	15 (24%)	19 (31%)	28 (45%)
Staff skills in using motivational techniques (*n* = 62)	20 (32%)	20 (32%)	22 (35%)
Staff awareness of the change process (*n* = 58)	18 (31%)	17 (29%)	23 (40%)
Improves attitudes toward change and rehabilitation among staff (*n* = 65)	24 (37%)	17 (25%)	25 (38%)

Although the responses were mixed among staff with regard to increased awareness and improved attitudes, it is important to consider that this may have been affected by the fact that staff training in MBIS principles only began at Mountain and Matsqui Institutions in 2007/2008. Therefore, there may not have been sufficient time for all staff to be trained in MBIS and to incorporate the principles fully in order to see substantial changes. Mixed responses could also be due to the attitude that is held by some staff members towards MBIS principles. More specifically, through the focus group session and staff survey responses it was revealed that several staff members' perceived attitudes towards MBIS are that motivational principles and interactions cannot be taught, but rather are the typical approach for dealing with offenders with low motivation levels.

Recommendation 4: CSC should ensure, where appropriate, that staff members are trained in and encouraged to apply the MBIS model in order to foster an environment where offenders can effectively participate in their correctional plans.

Offenders' Understanding and Motivation to Change Disruptive Behaviours

Finding 8: Quantitative analyses revealed no significant differences in CPPR offender motivation levels pre-post MBIS. However, feedback from offender interviewees indicated positive effects in increasing offenders' understanding of, and motivation to change, disruptive behaviours.

The offender-based statistical analyses that were conducted (i.e., Wilcoxon Signed Rank Test) revealed no significant differences between first assessment prior and first assessment post-MBIS on CPPR measures for the MBIS participant group. Frequencies of ratings are presented in Table 5.

Table 5: Offender-Based Frequencies of Ratings on CPPR Measures

Measure	Time	*N*	Low/Min	Med/Mod	High/Max	*p*
Motivation	Pre	44	11	32	1	*NS*
	Post	44	13	31	0	
Employment	Pre	44	3	33	8	*NS*
	Post	44	3	33	8	
Marital/Family	Pre	44	18	24	2	*NS*
	Post	44	17	25	2	
Associates	Pre	44	0	18	26	*NS*
	Post	44	0	18	26	
Substance abuse	Pre	44	4	7	33	*NS*
	Post	44	4	8	32	
Community functioning	Pre	44	11	20	13	*NS*
	Post	44	11	19	14	
Personal/Emotional	Pre	44	1	9	34	*NS*
	Post	44	1	8	35	
Attitudes	Pre	44	4	9	31	*NS*
	Post	44	5	8	31	
Risk	Pre	44	0	8	36	*NS*
	Post	44	0	8	36	
Need	Pre	44	0	6	38	*NS*
	Post	44	0	5	39	
Reintegration potential	Pre	44	37	7	0	*NS*
	Post	45	38	6	0	

NS = Not Significant

Similarly, offender-based statistical analyses (i.e., Wilcoxon Signed Rank Test) revealed no significant differences 6 months post-MBIS on CPPR measures between the MBIS participant group and the matched comparison group. See Table 6 for frequencies of ratings.

Table 6: Offender-Based Frequencies of Ratings on CPPR Measures Post Comparison

Measure	Group	Time	*N*	Low	Med	High	*p*
Motivation	MBIS	Post	51	14	36	1	*NS*
	Comparison		50	22	26	2	
Employment	MBIS	Post	51	5	37	9	*NS*
	Comparison		50	6	31	13	
Marital/Family	MBIS	Post	51	20	28	3	*NS*
	Comparison		50	22	20	8	
Associates	MBIS	Post	51	0	19	32	*NS*
	Comparison		50	0	16	34	
Substance abuse	MBIS	Post	51	5	9	37	*NS*
	Comparison		50	3	9	38	
Community functioning	MBIS	Post	51	14	23	14	*NS*
	Comparison		50	16	22	12	
Personal/Emotional	MBIS	Post	51	1	10	40	*NS*
	Comparison		50	1	8	41	
Attitudes	MBIS	Post	51	5	10	36	*NS*
	Comparison		50	3	12	35	
Risk	MBIS	Post	51	0	13	38	*NS*
	Comparison		50	1	11	38	
Need	MBIS	Post	51	0	7	44	*NS*
	Comparison		50	0	5	45	
Reintegration potential	MBIS	Post	51	42	7	2	*NS*
	Comparison		50	39	10	1	

NS = Not Significant

Staff survey respondents were also mixed when indicating whether MBIS has contributed to increased offender motivation to change problem behaviours (see Table 7).

Table 7: Staff Survey Responses regarding Offenders' Motivation

		Not at All or Slightly *n* (%)	Moderately *n* (%)	Considerably or Extremely *n* (%)
Has MBIS contributed to:				
Increased offender motivation to change problem behaviours	All (*n* = 47)	21 (45%)	11 (23%)	15 (32%)
	Kent (*n* = 8)	2 (25%)	3 (38%)	3 (38%)
Improved offender attitudes and behaviours	All (*n* = 45)	21 (49%)	12 (27%)	12 (27%)
	Kent (*n* = 8)	2 (25%)	2 (25%)	4 (25%)
Development of self-regulation and interpersonal skills among offenders	All (*n* = 42)	21 (50%)	10 (24%)	11 (26%)
	Kent (*n* = 7)	3 (43%)	2 (29%)	2 (29%)

The mixed responses among staff regarding changes in offender behaviour are most likely a result of the intervention not having been fully implemented with offenders at Mountain and Matsqui Institutions. When looking at staff responses from Kent Institution separately, it appears that responses were also somewhat mixed; however, they were generally more positive. Conversely, it was clear that the large majority of MBIS participants interviewed agreed that the intervention contributed positively to their motivation to change and address problem behaviours (see Table 8).

Table 8: Offender Interviewee Responses regarding Offender Motivation

	Agreement *n* (%)
MBIS sessions helped to:	
Identify their problem behaviours	13 (87%)
Talk about their unwillingness to change	12 (80%)
Talk about their willingness to change	12 (80%)
Helped to increase their motivation to change problem behaviours	12 (80%)
Helped to improve their attitudes and behaviours	11 (73%)
MBIS contributes to:	
Improved attitudes and behaviours among offenders in general	11 (73%)
Increased motivation among offenders in general	6 (40%)
More productive use of time among offenders in general	4 (27%)

Participation in Correctional Plans and Programs

Finding 9: Quantitative and qualitative analyses did not reveal MBIS to have an effect on offenders' participation in correctional plans and programs.

By increasing offender motivation, it was anticipated that MBIS would contribute to increased offender participation in correctional plans and programs. Offender-based statistical analyses (i.e., repeated measures logistic regression) revealed no significant differences 6 months pre- and 6 months post-MBIS on any program participation for the MBIS participant group. Similarly, there were no significant differences 12 months pre- and 12 months post-MBIS. Analyses also revealed no significant differences 6 months post- or 12 months post-MBIS

completion on any program participation between the MBIS participant group and the matched comparison group. Table 9 shows the frequencies of participation.[18]

Table 9: Offender-Based Frequencies of Program Participation

Group	Time	*N*	No	Yes	*p*
MBIS	6mo Pre	58	6	52	*NS*
	6mo Post	58	5	53	
MBIS	12mo Pre	58	4	54	*NS*
	12mo Post	58	4	54	
MBIS Comparison	6mo Post	58	5	53	*NS*
		58	4	54	
MBIS Comparison	12mo Post	58	4	54	*NS*
		58	3	55	

NS = Not Significant

Consistent with the offender-based analyses, institutional rate-based analyses revealed no significant results. Across all three institutions, there was no evidence that program participation rates differed pre- and post-MBIS. Please see Appendix B for more detailed information and statistical analyses tables.

Approximately half of staff survey respondents indicated that MBIS contributed "not at all" or only "slightly" to increased offender motivation to participate in correctional plans and programs (48%; *n* = 20/42), while 33% (*n* = 14/42) indicated that it contributed "considerably". Again, the mixed responses among staff may be due in part to the fact that the actual intervention was not implemented at Mountain and Matsqui Institutions. However, staff survey responses appeared to be consistent with offender interviewee responses, in that only 40% (*n* = 6/15) of offenders indicated that MBIS increased their motivation to participate in correctional plans and programs. Corresponding qualitative responses provided by those who agreed that MBIS enhanced participation were that it increased awareness of programs/information (*n* = 3) and that it reduced resistance to programs (*n* = 3). Further, several offenders noted that this question was not applicable to them as programs were not available for them in the institution (33%; *n* = 5/15).

In order to assess the availability of programs at Kent Institution, the number of program enrolments since 2001-2002 was examined. As can be seen in Appendix C, enrolments have primarily been in the area of education. Enrolments in living skills programs appear to have

[18] Based on how many offenders participated in at least one program.

decreased substantially, while there was also a slight decrease in enrolments in substance abuse and violent offender programs which began to increase again in 2008-2009. It should be noted that the availability of living skills programs decreased at the National level, with total enrolments decreasing from 4,332 in FY 2002-2003 to 416 in FY 2009-2010.[19]

Institutional Incidents and Disruptive Behaviours

Finding 10: Quantitative analyses did not reveal MBIS to have contributed to a reduction in institutional incidents and disruptive behaviours, and feedback from survey and interview respondents regarding this outcome was mixed.

Institutional Incidents

In motivating offenders to participate in their correctional plans and programs and to change disruptive behaviours, an anticipated outcome is the reduction in institutional incidents. Offender-based statistical analyses (i.e., Wilcoxon Signed Rank Test) revealed significant differences on the number of institutional misconduct charges 6 months pre- and 6 months post-MBIS for the participant group. Analyses also revealed significant differences 12 months pre- and 12 months post-MBIS for the participant group. No significant differences were found between the participant group and the matched comparison group 6 months post- or 12 months post-MBIS. See Table 10 for mean numbers of institutional misconduct charges.

Significant findings with regard to lower numbers of institutional misconduct charges post-MBIS should be interpreted with caution. Of particular importance is that a similar trend was found for the matched comparison group (See Figure 5 and Figure 6). Therefore, it is impossible to clearly determine that MBIS had a positive effect on the participant group given that the comparison group experienced the same positive effect. The factors influencing these effects are unknown for both groups. Thus, the positive effects cannot be attributed to MBIS.

[19] Extracted from Corporate Reporting System, 2010-04-16.

Table 10: Offender-Based Mean Number of Institutional Misconduct Charges

Group	Time	*N*	Mean	SD	*p*
MBIS	6mo Pre	58	6.8	6.8	**
	6mo Post	58	4.1	5.7	
MBIS	12mo Pre	58	11.2	9.2	***
	12mo Post	58	7.0	8.7	
MBIS Comparison	6mo Post	58	4.1	5.7	*NS*
		58	3.1	3.5	
MBIS Comparison	12mo Post	58	7.0	8.7	*NS*
		58	4.9	5.9	

NS = Not Significant; ** $p < .01$; *** $p < .001$

Figure 5: Institutional Misconduct Charges 6 Months Pre & 6 Months Post MBIS

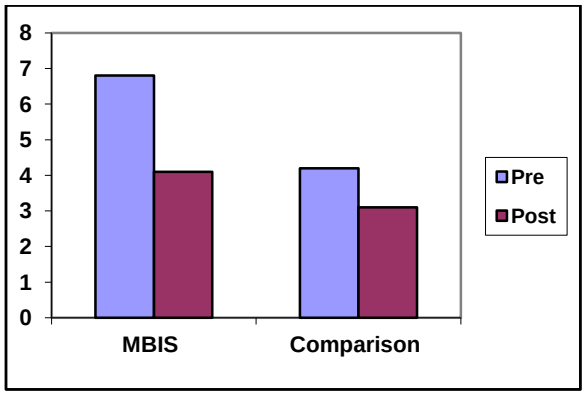
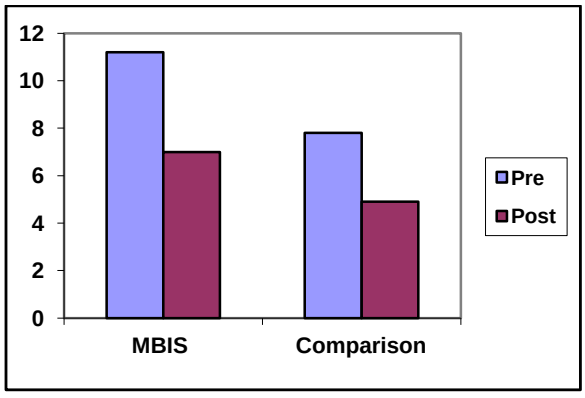


Figure 6: Institutional Misconduct Charges 12 Months Pre & 12 Months Post MBIS



In order to determine whether the MBIS participant group's rate of institutional misconduct charges decreased at a higher rate than that of the comparison group, interaction

effects were tested for using the Poisson Regression. Poisson Regression has the advantage of being precisely tailored to the discrete, often highly-skewed distribution of the dependent variables (Allison, 1999). Results did not reveal a significant interaction effect. Thus, the trends between treatment and time are similar between the MBIS participant group and the matched comparison group. See Appendix D for statistical analyses tables.

Institutional rate-based analyses revealed a significant 23% increase in institutional charge rates at Kent Institution following the implementation of MBIS. However, at Matsqui Institution, there was a significant decrease of 11% in the mean number of offenders with an institutional charge following the implementation of MBIS. These results should be interpreted with caution since the analyses did not account for other factors that may have influenced changes in the number of institutional misconduct charges. Therefore, the results cannot be attributed solely to MBIS. Please see Appendix B for more detailed information and statistical analyses tables.

Again, staff survey responses were mixed regarding changes in offenders' disruptive behaviours (see Table 11).

Table 11: Staff Survey Responses regarding Disruptive Behaviours

		Not at All or Slightly	Moderately	Considerably or Extremely
		n (%)	*n* (%)	*n* (%)
Has the MBIS contributed to:				
Offenders' productive use of time	All (*n* = 45)	22 (49%)	15 (33%)	8 (18%)
	Kent (*n* = 8)	3 (38%)	3 (38%)	2 (25%)
Reduced institutional incidents	All (*n* = 44)	24 (55%)	7 (16%)	13 (30%)
	Kent (*n* = 8)	3 (38%)	2 (25%)	3 (38%)
Reduced disruptive behaviour of offenders	All (*n* = 46)	21 (46%)	12 (26%)	13 (28%)
	Kent (*n* = 8)	4 (50%)	1 (13%)	3 (38%)
Offenders' adjustment to the institutional environment	All (*n* = 40)	19 (48%)	12 (30%)	9 (23%)
	Kent (*n* = 7)	2 (29%)	3 (43%)	2 (29%)

Consistent with staff responses, just over half of the offenders interviewed (53%; *n* = 8/15) indicated that MBIS helped to reduce their involvement in institutional incidents; whereas a few offenders (20%; *n* = 3/15) indicated that it did not. Several offenders interviewed agreed (40%; *n* = 6/15) that MBIS contributed to reduced institutional incidents among offenders

in general. In addition, approximately half of the offenders interviewed (47%; *n* = 7/15) agreed that MBIS contributed to reduced disruptive behaviour among offenders in general.

Periods of Segregation

Offender-based statistical analyses (i.e., Wilcoxon Signed Rank Test) revealed no significant differences on the number of periods of involuntary segregation pre- and post-MBIS for the MBIS participant group. Similarly, no significant differences were found post-MBIS between the participant and matched comparison group. See Table 12 for the mean number of periods of involuntary segregation.

Table 12: Offender-Based Mean Number of Periods of Involuntary Segregation

Group	Time	*N*	Mean	SD	*p*
MBIS	Pre	58	1.3	1.2	*NS*
	Post	58	1.2	1.5	
MBIS Comparison	Post	58	1.2	1.5	*NS*
		58	0.6	0.8	

NS = Not Significant

Institutional rate-based analyses revealed a significant increase in segregation rates after the implementation of MBIS at Kent Institution. More specifically, a 10% mean increase in the segregation rate post intervention was found. Significant results were also found for Mountain Institution, where there was a 5% decrease in mean segregation rates following the implementation of MBIS. Again, these results should be interpreted with caution since the analyses did not account for other factors that may have influenced changes in the number of periods of segregation. Therefore, the results cannot be attributed solely to MBIS. Please see Appendix B for more detailed information and statistical analyses tables.

Offenders' Transfer to Lower Security Facilities and Successful Parole Releases

Finding 11: Quantitative data did not reveal MBIS participation to have an effect on offenders' transfer to lower security facilities or successful parole release.

An anticipated long-term outcome of participation in MBIS is the transfer to lower security facilities and eventual successful parole releases. Offender-based statistical analyses

(i.e., repeated measures logistic regression) revealed no significant difference in the reduction of security classifications pre- and post-MBIS (i.e., first security reclassification following MBIS participation) between the participant group and the matched comparison group. Frequencies of decrease in security classifications are presented in Table 13.

Table 13: Offender-Based Frequencies of Decreases in Security Classification

Group	Time	*N*	Yes	No	*p*
MBIS Comparison	Post	43	8	35	*NS*
		41	14	27	

NS = Not Significant

Institutional rate-based analyses revealed no significant differences in offender security classification rates pre- and post-MBIS at Mountain and Matsqui Institutions. However, at Kent Institution, results suggested a significant 20% increase in the mean number of offenders who had their security level decreased after review following the implementation of MBIS. Again, results should be interpreted with caution since the analyses did not account for other factors that may have influenced changes in the number of security classifications. Therefore, the results cannot be attributed solely to MBIS. Please see Appendix B for more detailed information and statistical analyses tables.

Offender-based statistical analyses (i.e., Wilcoxon Signed Rank Test) revealed no significant differences between the MBIS participant group and the matched comparison group with regard to the type of first release after MBIS participation (see Table 14).[20]

Table 14: Offender-Based Frequencies of First Conditional Release

Group	Time	*N*	Statutory Release	WED	*p*
MBIS Comparison	Post	35	34	1	*NS*
		32	32	0	

NS = Not Significant

[20] Please note that none of the MBIS participant or comparison group offenders were released on parole as first type of release after MBIS participation.

Improved Work and Living Environment

Another anticipated long-term outcome of MBIS is that the intervention strategy will contribute to an improved work and living environment in the institution. As shown in Table 15, the majority of respondents indicated that MBIS contributed at least "moderately" to improved relationships and communication among staff members.

Table 15: Staff Survey Responses regarding Living Environment

	Not at All or Slightly	Moderately	Considerably or Extremely
	n (%)	*n* (%)	*n* (%)
Has MBIS contributed to:			
Improved relationships and communication among staff (*n* = 66)	17 (26%)	18 (27%)	31 (47%)
Improved relationships and communication between staff and offenders (*n* = 62)	23 (37%)	17 (27%)	22 (35%)
More positive work and living environment for staff and offenders (*n* = 65)	23 (35%)	21 (32%)	21 (32%)

Approximately half of the offenders interviewed (53%; *n* = 8/15) agreed that MBIS helped to improve their overall living environment, while just under half (40%; *n* = 6/15) agreed that the intervention strategy contributed to an improved living environment for offenders in general. Further, the majority of offenders interviewed indicated that the motivational sessions increased their readiness to bring positive changes into their environment (80%; *n* = 12/15). Additional information provided regarding what type of change(s) would create a more positive environment included more positive interaction between staff and offenders (*n* = 6) and addressing behavioural issues (*n* = 2).

Overall, the majority of offenders interviewed (87%; *n* = 13/15) indicated that they were satisfied with MBIS, and several (80%; *n* = 12/15) indicated that they would recommend it to other offenders. Through qualitative statements, offenders indicated the most useful aspects to be support (*n* = 7), problem-solving (*n* = 2), and behaviour management (*n* = 2). Nine of the offenders interviewed (60%; *n* = 9/15) indicated that changes should be made to MBIS, with the most common being the need for more frequent contact and time per session (*n* = 5).

3.4. Evaluation Objective 4: Cost-Effectiveness

Evaluation Objective: *Has the most appropriate and efficient means been used to achieve the expected outcomes?*

Finding 12: Based on available data, cost-effectiveness analyses did not demonstrate the strategy's ability to achieve value for money.

The MBIS initiative has demonstrated a reasonable ability to operate within budget (please refer to Table 1). During the first year of MBIS implementation, funding was exceeded by .82%, at which time intervention training was being delivered. From 2005/2006 until 2007/2008, however, the initiative was running under budget each fiscal year by over 50%. In 2008/2009, MBIS was running 17% under budget. This decrease is likely due to staff awareness training that began in 2007/2008.

The cost to CSC for providing MBIS at Kent Institution to one offender was determined to be $5,292.[21] This was calculated by dividing the actual resource use ($306,912) by the number of offenders recorded in OMS as having completed the intervention (58 offenders). However, it should be noted that this number is likely inaccurate given the data recording issues previously noted. In fact, one would expect the cost per offender to be lower if it was possible to account for all offenders who participated in the intervention strategy since its implementation. Moreover, the fact that the evaluation did not observe achievement of expected outcomes precluded the ability to properly conduct a cost-effectiveness analysis.

Therefore, based on data available, value for money was not achieved for MBIS. However, in order to examine the potential of MBIS to achieve expected outcomes, the evaluation team conducted two scenarios related to the Violence Prevention Program (VPP). VPP is an intensive intervention that integrates a variety of rehabilitative approaches, and is for offenders who are considered at high risk to commit violent crimes. VPP was utilized because it targets a similar population as MBIS. Although VPP was chosen, this type of scenario could also be applied to other correctional programs.

VPP was examined through the evaluation of correctional programs, completed by the Evaluation Branch in fiscal year 2008-2009 (CSC, 2009a). Of the key findings, it was determined that male offenders who had participated in CSC correctional programs targeting an

[21] This calculation was not done for Mountain and Matsqui Institutions given the intervention was not implemented with offenders, and therefore, the cost per offender could not be determined.

identified violence prevention treatment need, exhibited treatment-related change, were more likely to be granted a discretionary release, and to have positive community correctional outcomes than their comparison group (CSC, 2009a).

The cost to CSC for providing VPP to one offender was determined to be $8,889. This was calculated by dividing the actual resources used from 2005-2006 until 2008-2009 ($5,297,565) by the total number of enrolments for this time period (596 offenders).[22] Given outcome results from VPP, value-for-money appears to have been achieved.

The two scenarios presented are as follows:

(1) *If total funds used for MBIS were to be used for VPP, the number of offenders that could potentially be reached.*

This was calculated by dividing the total cost of MBIS ($306,912) by the total average cost per offender for VPP ($8,889). Results revealed that this scenario has the potential to reach 35 offenders, and thus, demonstrate value for money. Although this appears to be low reach, it is important to note that the total cost of MBIS ($306,912) represents only 5.8% of expenditures reported for VPP ($5,297,565).

(2) *If half of the funds used for MBIS were to be used for VPP, and half of the funds used were to remain for MBIS, the number of offenders that could potentially be reached.*

The purpose of this scenario is to examine whether MBIS could be enhanced with another program. It is important to note that this scenario assumes MBIS would encourage participation in the program. This was calculated by dividing half of the total cost of MBIS ($153,457) by the total average cost per offender for VPP ($8,889). Results revealed that this scenario has the potential to reach 17 offenders. The significance of this scenario should be highlighted, given that many of the offender interviewees indicated program availability to be an issue. Its implication is that if there is to be an investment in MBIS, then CSC also needs to ensure availability of programs for offenders.

Thus, using one of the scenarios presented, CSC has the potential to reach up to 35 offenders with the same level of resources. Value-for-money could be achieved depending on

[22] Information was obtained from the Corporate Reporting System, extracted 2010-03-12.

the number of offenders who exhibit the same type of outcomes identified in the evaluation of correctional programs.

3.5. Evaluation Objective 5: Unintended/Other Findings

Evaluation Objective: *Did the MBIS create or encounter any positive or negative impacts that were unintended?*

Finding 13: Staff members appeared to agree that, overall, the MBIS training contributed to positive effects at the staff level and that MBIS has the potential for positive effects at the offender level if the intervention is to be fully implemented.

Participation in the Intervention

There are no standard criteria for selection, and offenders automatically receive services when requested. There does not appear to be a referral process in place to target offenders with low motivation.

Participation in Correctional Plans and Programs

A main expected outcome of MBIS is that offenders would be motivated to complete, and hence more likely to participate in their correctional plans and programs. However, findings did not support the achievement of this outcome. Nonetheless, this does not imply that MBIS does not contribute to enhanced motivation to participate in correctional plans and programs, as there appears to be a lack of offender access to programs at Kent Institution.

Satisfaction of Staff Members

Very few staff respondents reported negative effects as a result of offenders' participation in MBIS (6%; n = 4/35), whereas a large proportion reported positive effects (89%; n = 25/28) such as increased offender accountability and encouragement of positive change (n = 18), as well as enhanced communication (n = 5). Correspondingly, the majority of staff respondents indicated that they would recommend MBIS to offenders with low levels of motivation (92%; n = 45/49) in order to promote positive change (n = 11) and to improve motivation (n = 10).

Consistent with this, the majority of staff respondents indicated that MBIS is worthwhile to fund (85%; *n* = 52/61) as it enhances communication (*n* = 19), helps motivate offenders to change problematic behaviours (*n* = 11), and produces positive changes (*n* = 5).

A large proportion of staff respondents indicated that there are things that could be done to improve the effectiveness of MBIS (70%; *n* = 32/46), and the main suggestions provided were to improve training activities (*n* = 17) and to implement the program fully and apply it consistently (*n* = 5). Similarly, suggested changes to MBIS provided by staff respondents included improved training activities (*n* = 10), greater support (*n* = 6), and to implement the program as had been done at Kent Institution (*n* = 4).

It is interesting to note that this overall positive satisfaction of staff members contradicts perceived results regarding outcomes. However, as noted throughout, because the intervention is not actually delivered at Mountain and Matsqui Institutions, it may be especially difficult to note changes among offenders.

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APPENDICES

Appendix A: MBIS Evaluation Matrix

Evaluation Objective 1: Relevance Is the MBIS initiative consistent with departmental and government wide objectives and priorities?			
Key Results	Performance Indicators	Lines of Evidence	Data Analysis Plan
MBIS is consistent with correctional priorities and other reintegration strategies.	Documentation substantiating the relevancy of MBIS.	Document review	Review of CSC and governmental documentation (i.e., Mission statement, Review Panel, RPPs, CDs) Review of program reports (i.e., Consultation Case File, ICIS Phase 1 Results Report, SHU Working Group Report, RMAF)
		Literature review	Review of academic literature regarding offender motivation and motivational interviewing, transtheoretical approach, and harm reduction
		RADAR	Scan of CSC's current environment in terms of motivation levels; Motivation levels at the institutions of interest
	Stakeholders and staff confirming relevancy of MBIS.	Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
Evaluation Objective 2: Implementation Has the MBIS initiative been implemented in such a way that goals and objectives can be realistically achieved, and have implementation issues been adequately considered?			
Key Results	Performance Indicators	Lines of Evidence	Data Analysis
MBIS is used as an intervention by CPOs and other trained staff	Staff trained in MBIS.	HRMS	HRMS data (number of staff trained in MBIS sessions)
		Staff surveys	Frequencies & percentages / open-ended responses
		Focus group	Focus group session write-up
		Key informant interviews	Individual discussions with MBIS facilitators
	Staff utilizing the MBIS intervention with target offenders.	Document review	Review of MBIS docs (i.e., Treatment scales & data)
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
		Focus group	Focus group session write-up
		Key informant interviews	Individual discussions with MBIS facilitators

	Offenders with motivational problems who have been identified and exposed to MBIS.	OMS	OMS data – Profile of MBIS participants
		Document review	Review of MBIS docs (i.e., Treatment scales & data)
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
		Key informant interviews	Individual discussions with MBIS facilitators
There is a high level of participation in MBIS by the target group.	Offenders' access to and involvement in MBIS and related activities.	OMS	Profile of MBIS participants: - # of participants - demographic info (age at time completed MBIS, ethnicity) - offence characteristics (aggregate sentence length in days, schedule 1 and 2 offences on current sentence)
		Document review	Review of MBIS docs (i.e., Treatment scales & data)
		Offender interviews	Frequencies & percentages / open-ended responses
		Focus group	Focus group session write-up
		Key informant interviews	Individual discussions with MBIS facilitators
	Workshop participation of target offenders exposed to MBIS.	Document review	Review of MBIS docs (i.e., Treatment scales & data)
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
		Focus group	Focus group session write-up
		Key informant interviews	Individual discussions with MBIS facilitators
MBIS is coordinated between NHQ and regions.	Level and effectiveness of coordination between staff and managers at NHQ and regions.	Staff surveys	Frequencies & percentages / open-ended responses
		Key informant interviews	Individual discussions with MBIS facilitators
MBIS operates according to guidelines identified in the strategy.	Stakeholders confirm implementation key results have been achieved adequately.	Staff surveys	Frequencies & percentages / open-ended responses
		Focus group	Focus group session write-up
		Key informant interviews	Individual discussions with MBIS facilitators
	Review of relevant documents reveals implementation of key results has been achieved.	Document Review	Review of MBIS docs (i.e., Treatment scales & data; Pre/post staff training evaluations)

	Performance data are effectively being collected.	Document Review	Review of MBIS docs (i.e., Treatment scales & data; Pre/post staff training evaluations)
Evaluation Objective 3: Success (Efficiency & Effectiveness) Is the MBIS producing its planned outputs in relation to expenditure of resources, and meeting its planned results?			
Efficiency			
Key Results	Performance Indicators	Lines of Evidence	Data Analysis
The expected outputs are being achieved as a result of the initiative.	Number and types of activities undertaken and outputs produced.	Document Review	Review of MBIS docs (i.e., Pre/post staff training evaluations)
		Focus group	Focus group session write-up
		Key informant interviews	Individual discussions with MBIS facilitators
Effectiveness			
Key Results	Performance Indicators	Lines of Evidence	Data Analysis
Participation in MBIS staff training contributes to an increased awareness and improved attitudes among correctional staff of motivational principles and stages of change.	Training sessions.	HRMS	HRMS data (number of MBIS training sessions)
		Document Review	Review of MBIS docs (i.e., Pre/post staff training evaluations)
	Training participants.	HRMS	HRMS data (number of staff trained in MBIS sessions; frequency of position)
	Level of awareness amongst staff of motivational principles and stages of change.	Staff surveys	Frequencies & percentages / open-ended responses
	Staff attitude towards, and acceptance of, motivational principles and stages of change.	Staff surveys	Frequencies & percentages / open-ended responses
Participation in MBIS contributes to an increase in offenders' understanding and motivation to change disruptive behaviours.	Completion rate of motivational sessions and/or skills workshops.	OMS	# offenders with CERTIFICATE_DIPLOMA for completing MBIS
		Document Review	Review of MBIS docs (i.e., Treatment scales & data)
	Level of offender's awareness, understanding and motivation.	OMS	CPPR: - Pre/post assessments for need domains (employment, marital/family, associates/interaction, substance abuse, community functioning, personal/emotional, attitude, risk, need, motivation, reintegration potential) - Post test assessment with matched comparison group
		Document Review	Review of MBIS docs (i.e., Treatment scales & data)
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses

Participation in MBIS assists offenders to become involved in and to successfully complete correctional plans / programs.	Rate of participation and completion of correctional plans / programs.	OMS	Program and institutional work participation: - Pre/post assessment of work enrolment - Post test assessment with matched comparison group - Pre/post assessment of program enrolment - Post test assessment with matched comparison group
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
MBIS contributes to a reduction of institutional incidents and disruptive behaviours.	Number and type of Institutional incidents.	OMS	Institutional misconduct: - Pre/post assessment of institutional misconduct (# before and after program start) - Post test assessment with matched comparison group
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
	Length of time spent in segregation.	OMS	- Pre/post assessment of periods of involuntary segregation (# before and after program start) - Post test assessment with matched comparison group
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
MBIS contributes to offenders' transfer to lower security facilities or successful parole releases.	Length of time in higher security. Movement to lower security level / facility or parole release.	OMS	Security classification: - Pre/post assessment (last security reclassification prior to and after MBIS) - Post test assessment with matched comparison group Conditional release: - Post test assessment with matched comparison group (limited only to those people who have been released in both groups)
		Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
MBIS contributes to improved communication between staff and offenders, ultimately contributing to a better working and living environment.	Level and quality of communication between staff and offenders.	Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
	Satisfaction levels related to working or living environment.	Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses
Evaluation Objective 4: Cost-effectiveness Have the most appropriate and efficient means being used to achieve the expected outcomes?			
Key Results	Performance Indicators	Lines of Evidence	Data Analysis

The expected outputs/outcomes of MBIS have been effectively achieved within designated funding.	Outputs/outcomes effectively achieved within available resources.	IFMMS	IFMMS data
		Staff surveys	Frequencies & percentages / open-ended responses
Evaluation Objective5: Unintended Impacts Did MBIS create or encounter any positive or negative impacts that were unintended?			
Key Results	Performance Indicators	Lines of Evidence	Data Analysis
Unanticipated outcomes	TBD	Staff surveys	Frequencies & percentages / open-ended responses
		Offender interviews	Frequencies & percentages / open-ended responses

Appendix B: Interrupted Time Series Analysis with ARIMA

Description of Analysis

Time series data consists of a series of repeated measurements at regular intervals over a period of time. Generally at least 50 data points are required. Time series analysis is based on the concept that it is possible to predict future data points based on preceding data points: that a future data point can be modelled as being the product of (a) trends in the data, plus (b) random error.

Auto Regressive Integrated Moving Average (ARIMA) model,[23] is based on the idea that the trend component can be broken down further into three components: Lingering effects from earlier scores ("autoregressive", denoted *p*), linear and curvilinear trends in the data ("integrated", denoted *d*), and lingering effects of previous random error or shocks ("moving average", denoted *q*).

More specifically, the trends in the data are removed, so that the mean rate becomes more or less flat (or "stationary") with a constant mean and standard deviation across time points) - such that changes in the flat line around the time of the intervention can be identified.

Overview of Analysis Conducted

Before analysis, the data were screened for outliers. A trim procedure was performed to reduce the influence of outliers. The three highest (and lowest) values in a series were trimmed by setting them apart by one unit (.01) from the fourth highest (and lowest) observation. Where the actual difference was less than one unit, data points were not adjusted. The procedure outlined in Tabachnick and Fidell (2001) was used to perform the interrupted time series analysis.

The analysis consisted of two stages. First, the pre-intervention data were explored to model latent trends. This involved looking at autocorrelations (AC), and partial autocorrelations (PAC).[24] Based on the patterns of the ACs and PACs it was possible to estimate the p, d, and q elements of the ARIMA model. This model was then adjusted until all autocorrelations in the

[23] Please see Hartman et al. (1980) for a readable description of interrupted time series analysis using ARIMA.
[24] An autocorrelation is a correlation between a data point and a preceding data point (e.g., lag 1, lag 2, lag 3). A partial autocorrelation is a correlation between a data point and a preceding data point, where the variance from intervening points has been removed.

data were accounted for. In the second step, the identified model plus a term representing the intervention, was applied to the full time series. There are various ways of modelling the intervention term, or "transfer function". In the present analysis, a simple step function was assumed. It was assumed that the intervention would have a sudden and lasting impact on rates. Where the intervention term made a significant contribution to the model, this suggested that the intervention may have had an influence on the observed rates. A final check to see if the model was a good fit was performed. The "autocorrelation check of residuals" in the SAS output was examined to ensure that no significant effects remained.

With respect to software, both JMP and SAS were used to perform the analysis. Model fitting was explored using JMP, which was also used to produce the time-series graphs. The actual interrupted time series analysis was conducted using Proc ARIMA in SAS.

Data Extraction Procedure

Data were extracted by Performance Measurement and Management Reports (PMMR) from the CSC/National Parole Board data warehouse. All rates were based on one month periods. Across all institutions, rate data were extracted for the periods from April 2000 to December 2009, for a total of 117 observations.

Rates were calculated as follows:

i. Institutional Misconduct = # unique offenders with an institutional charge / institutional flow-through;
ii. Involuntary Segregation = # unique offenders with an involuntary period of segregation / institutional flow-through;
iii. Program Participation = # of unique offenders who were involved in any program or institutional work placement / institutional flow-through;
iv. OSL Up = # offenders who received a security level increase / institutional flow-through;
v. OSL Down = # offenders who received a security level decrease / routine OSL reviews.

The flow-through denominator represented the number of offenders who were in the institution at some point within the month. This is the current method used by PMMR to calculate rates. On average, 255.44 (*SD* = 22.11) offenders went through Kent Institution in

month, 290.70 (*SD* = 21.74) went through Matsqui Institution, and 426.82 (*SD* = 42.95) went through Mountain Institution.

Note that the denominator for the OSL decrease rate was based on the number of routine OSL reviews, not flow-through. Security level increases and decreases are different types of events. An offender is at risk for an increase in their security at all times. In contrast, a decrease in security level generally happens as a result of a routine security review.

The implementation dates for MBIS differed at each institution. At Kent Institution, it was April 2003, which yielded 43 periods before the implementation of MBIS, and 74 after. At Matsqui Institution, it was January 2008, which yielded 93 periods before the implementation and 24 periods after. At Mountain Institution, it was August 2008, which yielded 100 periods before and 17 periods after.

Limitations

Some limitations should be noted. Arguably, the most appropriate denominator for the rates would be based on person-time. In this case, person-time would be the total number of months that offenders at the institution were at risk for a first event. The flow-through denominator is necessarily larger. Essentially, it assumes that all offender who were at the institution at any point in time were at risk for the entire month. This is untrue because (a) an offender may have been transferred in or out partway through the month, and/or (b) an offender who experienced an event would not have been at risk for the event for the remainder of a month. In relation to person-time based rates, the rates presented in this paper are necessarily underestimates.

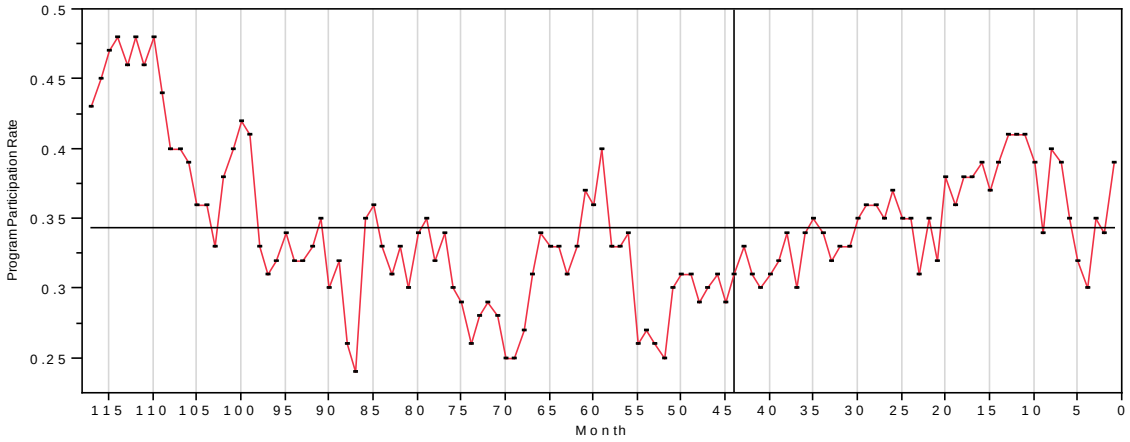
A second issue concerns the number of time periods post-intervention. The recommended number of observations, both pre- and post-intervention is 50 (Hartman et al., 1980). This requirement was close to being met with respect to Kent Institution, but was not met with respect to Matsqui (25 post) and Mountain Institutions (17 post).

Program Participation

Table 16: Program Participation Rates Pre- and Post-MBIS

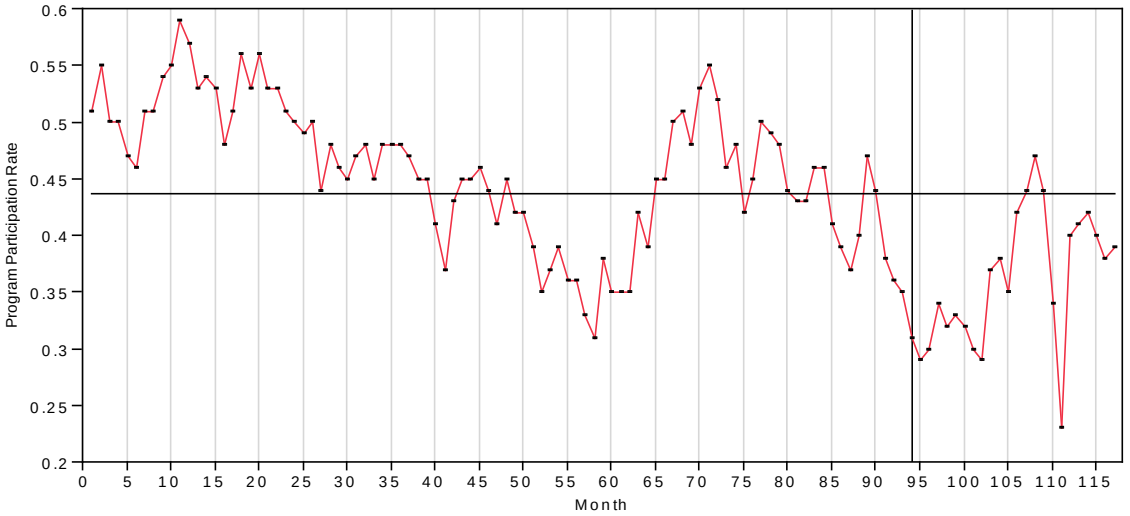
Institution	Time	*N*	Mean	*SD*
Kent	Pre	43	.35	.03
	Post	74	.34	.06
Matsqui	Pre	93	.46	.06
	Post	24	.36	.06
Mountain	Pre	100	.39	.04
	Post	17	.42	.04

Figure 7: Program Participation Rates at Kent Institution, Apr 2000-Dec 2009



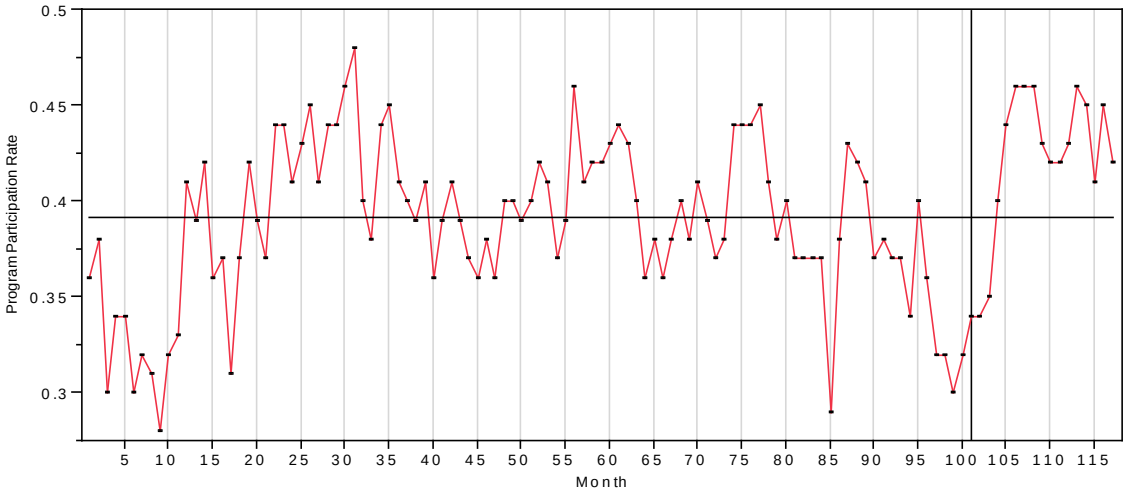
Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 8: Program Participation Rates at Matsqui Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 9: Program Participation Rates at Mountain Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Table 17: Program Participation Rates, Interrupted Time Series Model Description and Association Parameters

	Model	Parameters			
	p,*d*,*q*	*μ*	*p*	*q*	Intervention
Kent	1,0,0	-.37***	.85***	--	-.02
Matsqui	0,1,0	-.00	--	--	.00
Mountain	1,0,0	.39***	.68***	--	.03

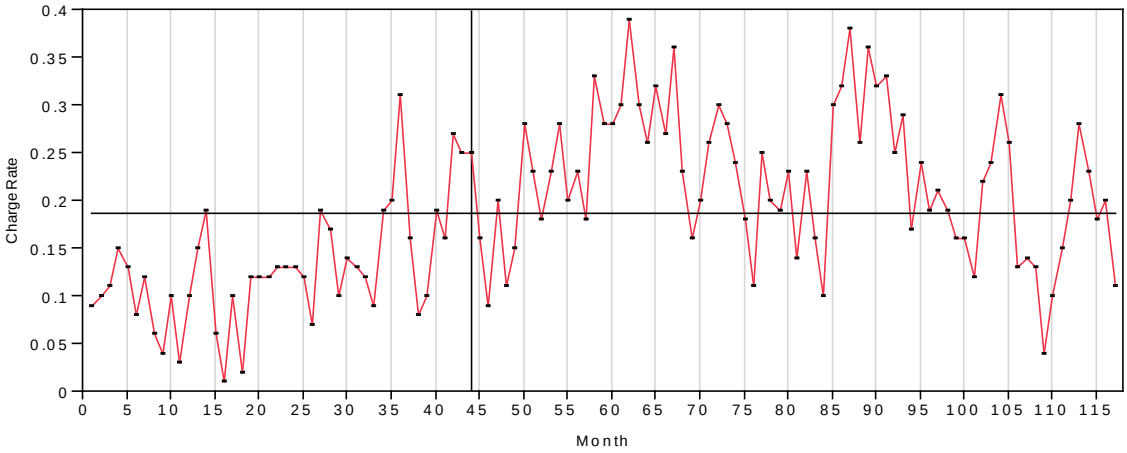
Note: Each model is distinct.
*** $p < .001$

Institutional Misconduct Charges

Table 18: Institutional Misconduct Charge Rate Pre- and Post-MBIS

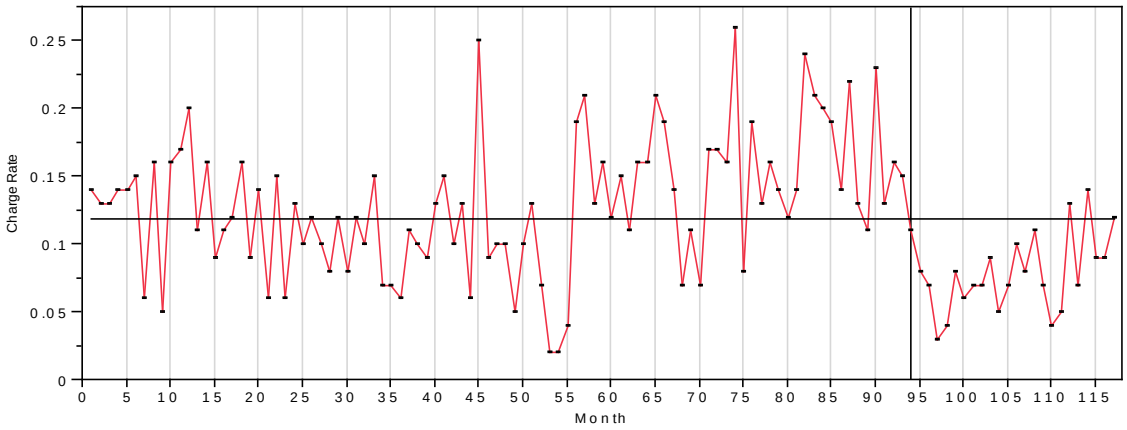
Institution	Time	*N*	Mean	SD
Kent	Pre	43	.13	.06
	Post	74	.22	.08
Matsqui	Pre	93	.13	.05
	Post	24	.08	.03
Mountain	Pre	100	.10	.04
	Post	17	.07	.03

Figure 10: Institutional Charge Rates at Kent Institution, Apr 2000-Dec 2009



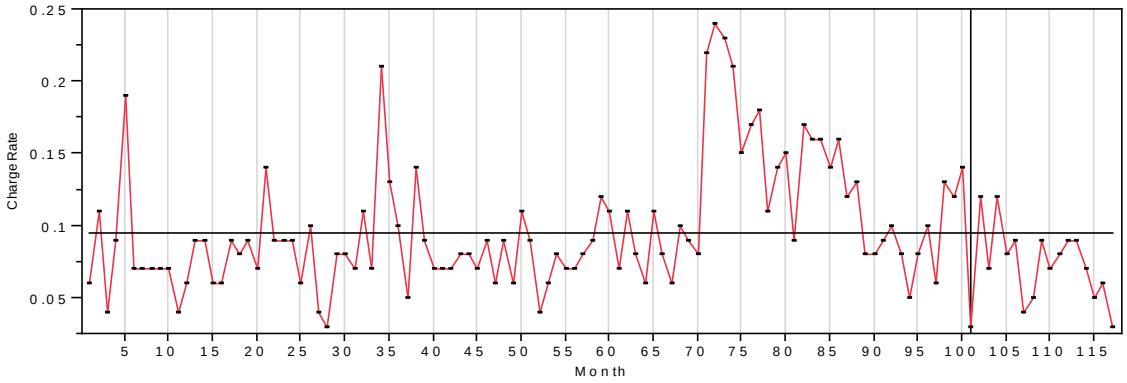
Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 11: Institutional Charge Rates at Matsqui Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 12: Institutional Charge Rates at Mountain Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Table 19: Institutional Charge Rates, Interrupted Time Series Model Description and Associated Parameters

	Model	Parameters			
	p,*d*,*q*	*μ*	*p*	*q*	Intervention
Kent	1,0,0	.13***	.51***	--	.09***
Matsqui	0,0,2	.13***	--	-.18*, -.40***	-.05**
Mountain	1,0,1	.10***	.46*	.84	-.04

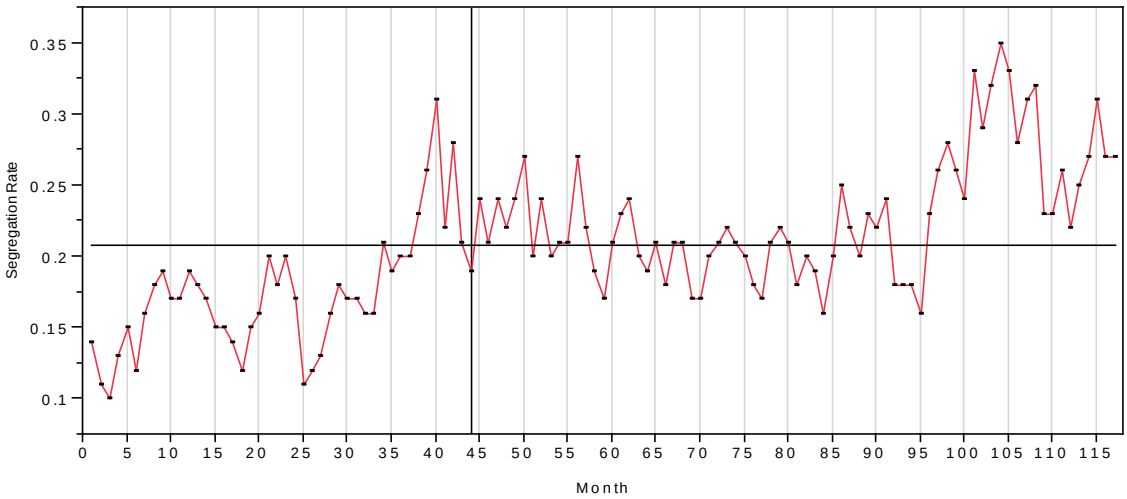
Note: Each model above is distinct.
* $p < .05$; ** $p < .01$; *** $p < .001$

Periods of Involuntary Segregation

Table 20: Involuntary Segregation Rates Pre- and Post-MBIS

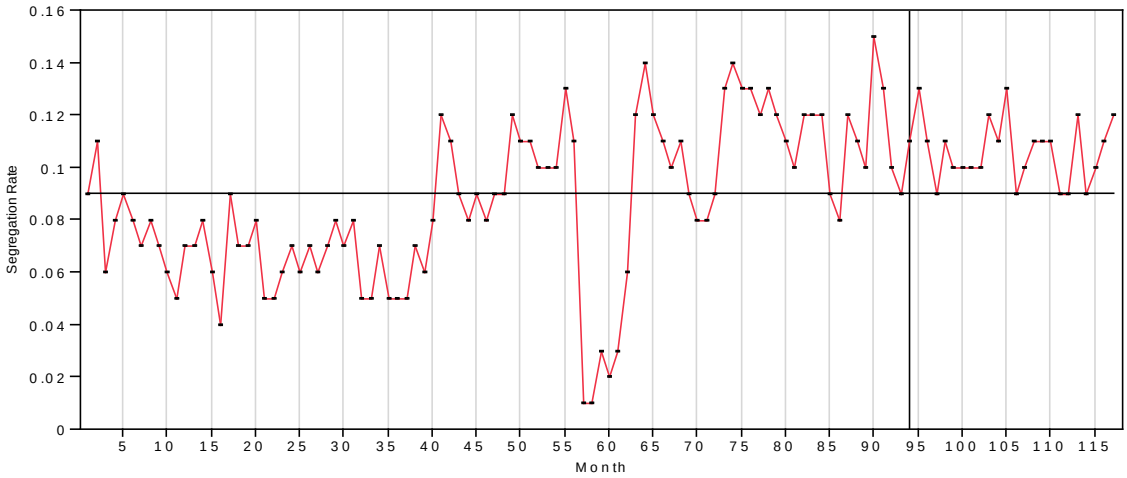
Institution	Time	*N*	Mean	*SD*
Kent	Pre	43	.17	.04
	Post	74	.22	.04
Matsqui	Pre	93	.09	.03
	Post	24	.11	.01
Mountain	Pre	50	.03	.01
	Post	17	.05	.01

Figure 13: Involuntary Segregation Rates at Kent Institution, Apr 2000-Dec 2009



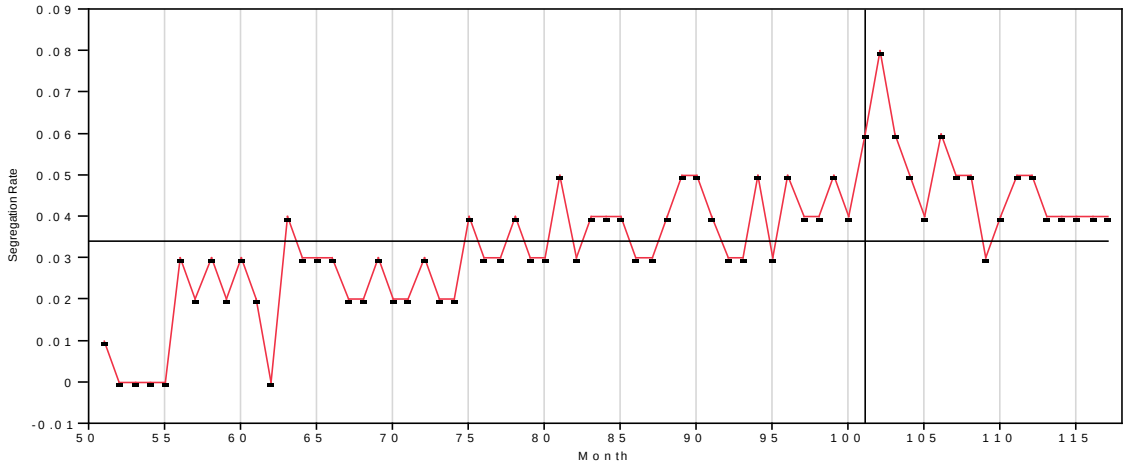
Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 14: Involuntary Segregation Rates at Matsqui Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 15: Involuntary Segregation Rates at Mountain Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Table 21: Involuntary Segregation Rates, Interrupted Time Series Model Description & Associated Parameters

	Model	Parameters			
	p,*d*,*q*	*μ*	*p*	*q*	Intervention
Kent	1,0,0	.18***	.72***	--	.04*
Matsqui	1,0,0	.09***	.71***	--	.02
Mountain	1,0,0	.03***	.56***	--	-.02**

Note: Each model is distinct. Several values of segregation rate early in the series had values of 0. To promote equality of variance through the series, the series was truncated to start at month 51, 50 observations before the intervention.
* $p < .05$; ** $p < .01$; *** $p < .001$

At Kent Institution, the intervention parameter was positive which suggests that segregation rates increased after the implementation time. The antilog of the parameter ($10^{.04}$) 1.10 suggests a 10% mean increase in the segregation rate post intervention. Regarding Mountain Institution, the intervention parameter was significant and negative. The antilog of the intervention parameter ($10^{-.02}$) .95 indicates that there was a 5% drop in mean segregation rate following the MBIS intervention.

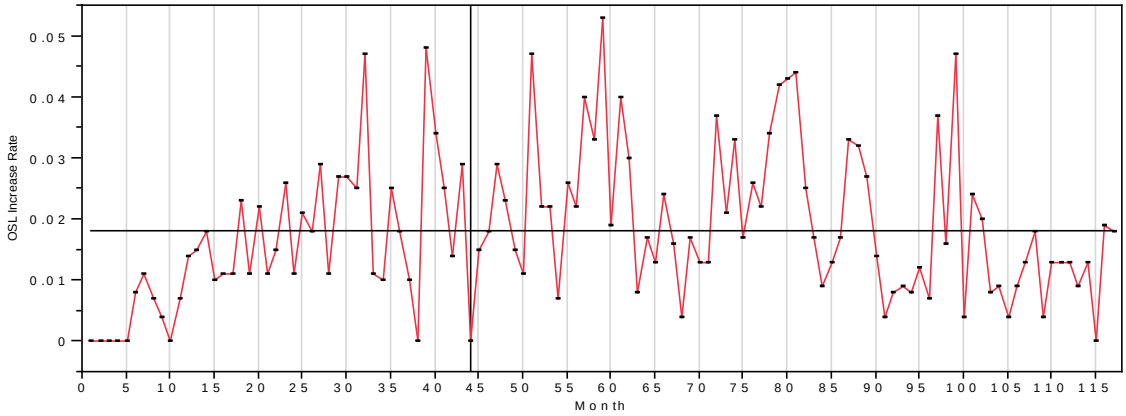
Offender Security Level Increase

Table 22: Offender Security Level Increase Pre- and Post-MBIS

Institution	Time	*N*	Mean	*SD*
Kent	Pre	43	.012	.048
	Post	74	.012	.053
Matsqui	Pre	93	.006	.034
	Post	24	.006	.020
Mountain	Pre	100	.004	.015
	Post	17	.004	.019

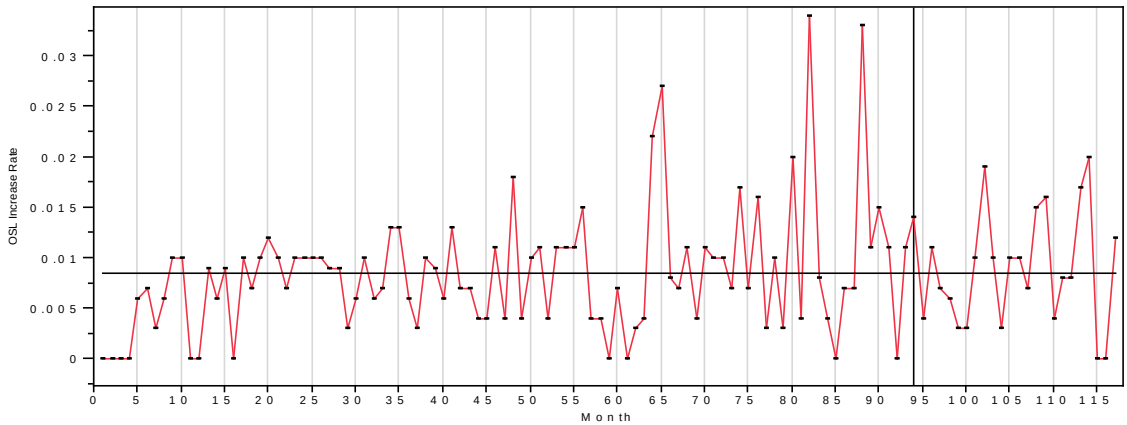
Note: The rates were rounded to one thousands because they were small.

Figure 16: Offender Security Level Increase Rates at Kent Institution, Apr 2000-Dec 2009



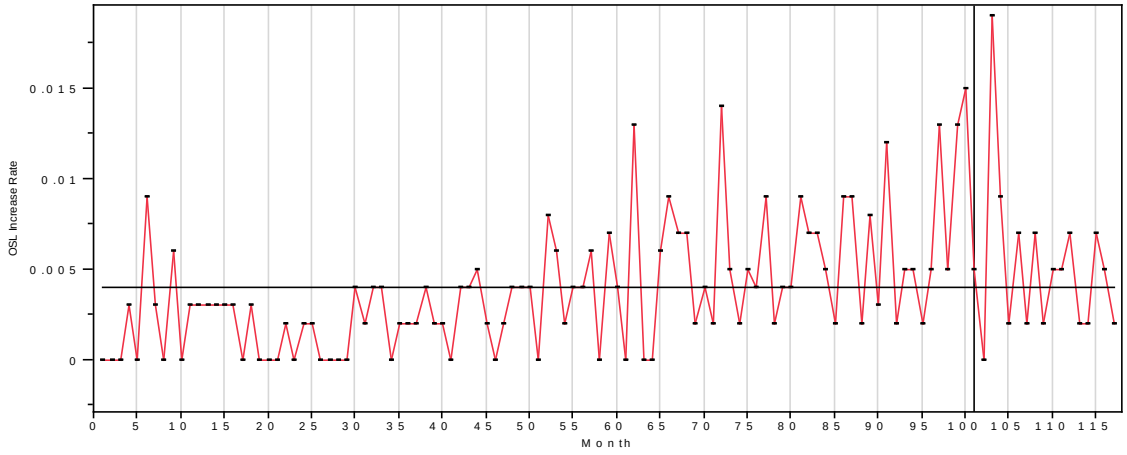
Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 17: Offender Security Level Increase Rates at Matsqui Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 18: Offender Security Level Increase Rates at Mountain Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Table 23: Offender Security Level Increase Rates, Interrupted Time Series Model Description and Associated Parameters

	Model	Parameters			
	p,*d*,*q*	*μ*	*p*	*q*	Intervention
Kent	1,0,1	.02***	.50*	.76***	.003
Matsqui	0,0,0	.008***	--	--	.001
Mountain	0,1,1	.000***	--	1***	-.000

Note: Each model is distinct.
* $p < .05$; *** $p < .001$

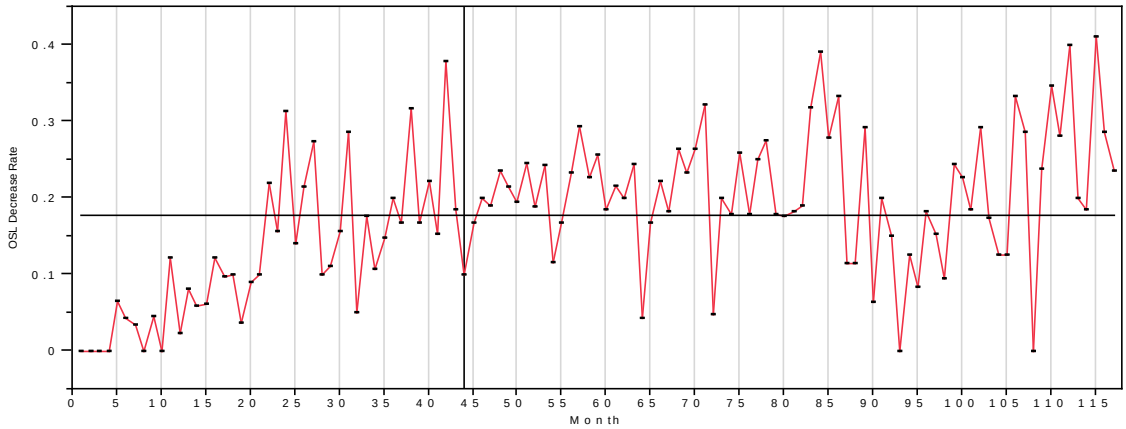
Offender Security Level Decrease

Table 24: Offender Security Level Decrease Rates at Kent Institution, Apr 2000-Dec 2009

Institution	Time	*N*	Mean	*SD*
Kent	Pre	43	.12	.10
	Post	74	.21	.08
Matsqui	Pre	93	.09	.06
	Post	24	.09	.06
Mountain	Pre	100	.08	.06
	Post	17	.06	.04

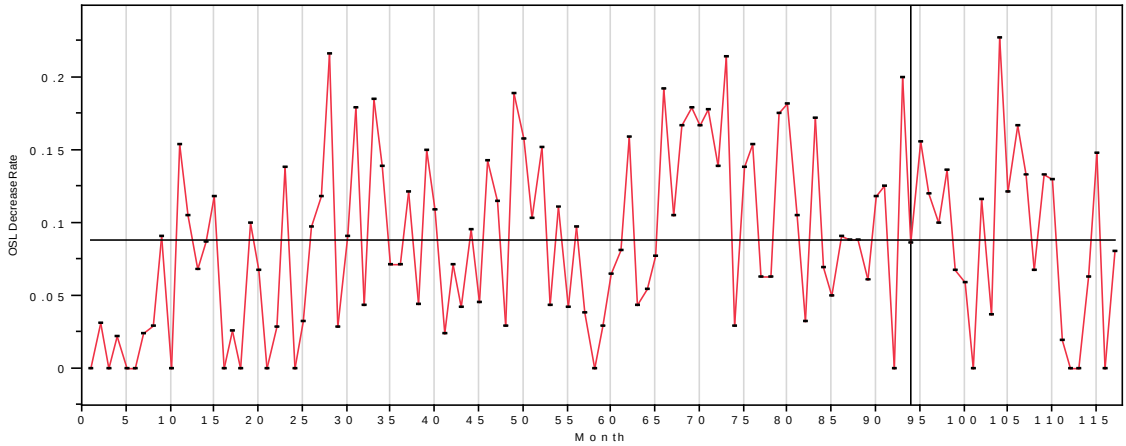
Note: The rates were rounded to one thousands because they were small.

Figure 19: Offender Security Level Decrease Rates at Kent Institution, Apr 2000-Dec 2009



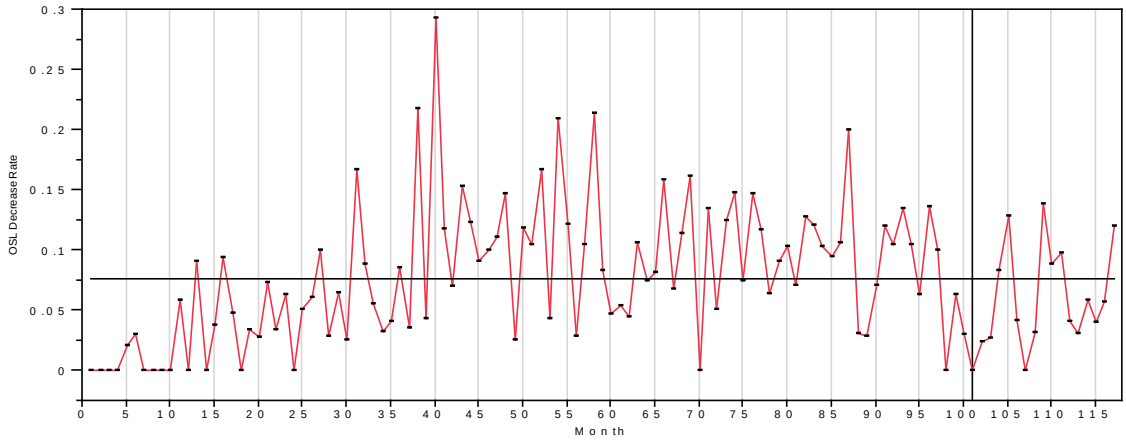
Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 20: Offender Security Level Decrease Rates at Matsqui Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Figure 21: Offender Security Level Decrease Rates at Mountain Institution, Apr 2000-Dec 2009



Note: The horizontal line represents the overall mean rate. The vertical line represents the MBIS implementation date.

Table 25: Offender Security Level Decrease Rates, Interrupted Time Series Model Description and Associated Parameters

	Model	Parameters			
	p,*d*,*q*	*μ*	*p*	*q*	Intervention
Kent	2,0,0	.13***	.23*, .16	--	.08**
Matsqui	3,0,0	.08***	.07,.19*,.20*	0	.00
Mountain	0,1,1	.00	--	.87***	.00

Note: Each model is distinct.
* $p < .05$; ** $p < .01$; *** $p < .001$

The results suggest that at Kent there was a 20% increase in the average number of offenders who had their security level decreased at routine offender security level review after the implementation of MBIS (antilog $10^{.08} = 1.20$).

Appendix C: Program Enrolments at Kent Institution

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Cognitive skills training	40	10						
Cognitive skills maintenance program					6			
Anger/emotion management	7	9	6		9			
Community integration							16	10
Other cognitive skills programs	74							
Reasoning and Rehabilitation			21	19	19	10		
Aboriginal basic healing program								
Total Enrolments Living Skills Programs	121	19	27	19	34	10	16	10
Aboriginal substance abuse program	36	9						
Substance abuse serv. counseling and prevention	12	13	19	8		1		
National substance abuse maintenance						1		
National substance abuse moderate intensity				10		11	15	24
Total Enrolments Substance Abuse Programs	48	22	19	18	19	13	15	24
Moderate intensity VPP								14
Segregation programs	24	17	9	5				
Violence prevention		12						
Violence prevention maintenance		1	8	7	1	6	1	
Total Enrolments Violent Offender Programs	24	30	17	12	1	6	1	14
Total Enrolments Non-Education Programs	193	71	63	49	54	29	32	48
Total Enrolments Education	131	152	90	138	147	173	164	169
Total Enrolments All Programs	324	223	153	187	201	202	196	217

Source: Retrieved from the Corporate Reporting System on 2010-01-25 (Data warehouse refresh date: 2010-01-17).

Appendix D: Poisson Regression for Institutional Misconduct Charges

Table 26: Poisson Regression for Institutional Misconduct Charges 6 Months Pre- and 6 Months Post-MBIS

Parameter	Estimate	Standard Error	Chi-Square
Treatment	0.49	0.08	35.81***
Time	-0.29	0.10	8.96**
Interaction	-0.21	0.13	2.82

** $p < .01$; *** $p < .001$

Table 27: Poisson Regression for Institutional Misconduct Charges 12 Months Pre- and 12 Months Post-MBIS

Parameter	Estimate	Standard Error	Chi-Square
Treatment	0.36	0.06	35.51***
Time	-0.47	0.08	38.65***
Interaction	-0.00	0.10	0.00

*** $p < .001$

Figure 22: Total Sum of Institutional Misconduct Charges 6 Months Pre- and 6 Months Post-MBIS

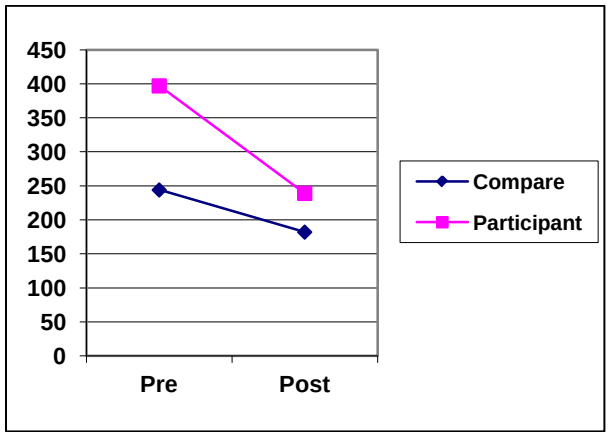


Figure 23: Total Sum of Institutional Misconduct Charges 12 Months Pre- and 12 Months Post-MBIS