

Summary of progress

In May 2005 Dr. R. Martin, (Nominated Principal Investigator) and physician for the Allouette Correctional Centre for Women (ACCW), B. Tolle (ACCW Prison Warden), and A. Granger-Brown (ACCW recreation therapist) received a development grant from the CIHR Institute of Gender of Health to develop an Interdisciplinary Enhancement Grant with prison inmates as research partners. The application was not funded and reviewers identified the need for consultation with methodologists to develop measurable outcomes. Drs. Patricia Janssen, Jane Buxton, and Jim Frankish from the UBC Department of Health Care and Epidemiology were invited to join the team. In August, 2005 The University of British Columbia Development Office forwarded to Dr. Martin a donation of \$5,000 for the continuation of research capacity-building in the prison. These funds were used to hire a group facilitator to lead research meetings at the prison and to assist the inmate research team to access the Internet and other sources of literature to facilitate their participation in research activities.

Women and staff of ACCW articulated *Values and Guiding Principles for Participatory Research* in October, 2005 and the ACCW research team, the academic research team and the BC Corrections Branch Advisory Committee developed *Terms of Reference* to guide the research. Since November 2005, 208 women have voluntarily joined the ACCW inmate research team, with between 5 to 15 women participating at any one time. The UBC Research Ethics Board approved the participatory research process in 2006.

Women of the ACCW research team created an orientation package for new members that included a demographic survey, a confidentiality agreement, consent for linkage to the Corrections data, and consent for contact after release. They were also invited to create a 'paragraph of passion' in which they articulated their individual research interests. Since November 2005, women inmates have met regularly and have identified their health goals (physical, spiritual, emotional and psychological) through brainstorming and conducting surveys. The ACCW research team organized and hosted ten ACCW Health Research Forums from October 2005 to April 2007 at which they have made over 60 presentations on topics related to their 'paragraph of passion'. Forum invitees included members of ACCW (staff and women) and guests from government and community agencies, universities and colleges. Attendees at the monthly forums (n= approx 600 in total) have reported improved understanding of the health and social needs of women in prison.

Women who have participated in the ACCW inmate health research team (n = 200) have reported increased self-esteem, improved knowledge about their health, and acquisition of research skills, for example, how to use software programs, enter, analyze, and interpret data. Nine goals related to improving health have emerged from the gathering of surveys and qualitative data: 1) improved relationships with children, family and partners; 2) improved peer and community support; 3) safe and stable housing; 4) improved access to individualized, individualized primary health care; 5) increased job skills, training, and relevant employment; 6) more exercise and better nutrition; 7) improved dentition and oral health; 8) improved access to health education, in particular infectious diseases and outcomes of drug use; and 9) increased ability to contribute to society. The research team is developing a website to communicate their work to others and to enable them to participate in the research after release. <http://www.accwalumniresearch.org>. Development of the website is funded by a BC Medical Services Foundation peer-reviewed operating grant. ACCW "alumni" have presented their work at academic research forums and at community venues including schools. They have co-authored an article in the *Medical Post* and the *Canadian Family Physician* and have presented at local (Women's Health Research Network, Vancouver) and international (International Union of Public Health) conferences.

In March 2006, Dr Martin, on behalf of the research team, signed a five-year Research Agreement with the Ministry of Public Safety and Solicitor General, Corrections Branch, to conduct research in ACCW to address the health needs of inmates. The agreement provides access (with consent of participants) to the Corrections Admissions Database (with socio-demographic and forensic data) and the Corrections Risk Needs Assessment Database.

Response to previous reviews

The proposed study is of great interest to the committee in terms of its potential for addressing a clearly important issue. The research team has secured appropriate community support and access to important databases. There is strong groundwork done here.

We concur with the reviewers that the proposed study has great potential for addressing an important issue. Since our previous submission we have continued to gather support for our work and have refined our research tools.

There are some concerns in that the first objective is rather general and that the methods overall could be more clearly outlined. The battery of instruments seem to be appropriate but need to be justified.

We have changed our objectives to more closely reflect the health goals articulated by the inmate research team. Accordingly, we have eliminated some of the instruments that measured more distal determinants of recidivism, for example post traumatic stress disorder, and focused on more proximal determinants as outlined by the inmates, for example, social support and safe housing.

There will likely be a large proportion of the population who are aboriginal and this needs to be more fully considered.

Fifty-three percent of the women who have joined the ACCW inmate research team to date are Aboriginal. Therefore, Aboriginal women have had significant input into the design of the study, choice of data elements and scales, and the way that findings will be disseminated. Two of our co-investigators, D. Wardman, and L. Condello are aboriginal. Among our community-based peer researchers, approximately fifty percent will be aboriginal. Our collaborators, who will sit on a Community Advisory Board, include Leah Walker, Associate Director, Division of Aboriginal Peoples Health, UBC Dept of Family Practice, and Penny Irons, Executive Director of the Aboriginal Mother Centre.

There are also some questions about the long term feasibility of the follow up. There was also concern that the budget was not sufficient and the team should perhaps consider a smaller sample size.

We will be following study participants for only one year. We modified our goals for recruitment to be 25% of the 1200 eligible women who leave ACCW each year. Among 300 participants, we anticipate that the recidivism rate will be as high as 40% so will be following between 180-300 in each year of follow-up. We have allotted 12 hours total in follow-up time for each study participant.

The major concern, however, is in the shift of the proposal from a participatory project involving the incarcerated women as participants to a survey of them. The letters of community support clearly focus on different issues than the focus of this study, particularly health and social care service needs. This disconnect diminishes the credibility of the focus and need for the proposed research. The team needs to more clearly address this issue.

We agree with the comments above. Since the last submission, the members of the academic research team have traveled to the ACCW on a monthly basis to work with the ACCW inmate prison team to as they developed their health goals. We have revised our objectives to measure the factors that the women feel are more relevant to successful reintegration, which are in fact, health and social needs.

The team is also encouraged to be more sensitive to the ethical issues and clearly explicate what will be done to assess the experience of coercion by participants and what would be done - perhaps the inclusion of an independent ombudsperson would be appropriate in this regard.

Having discussed this at some length with the inmates, the team decided to not to recruit inside the prison. Neither the academic nor the inmate research team has the authority to control coercion, should it occur, inside the prison. We do not have an opportunity to appoint an independent ombudsperson; all staff in the prison are employed by Corrections. It is not clear to us that women would feel comfortable reporting coercion to prison staff, even the psychologist or the chaplain. Should reporting occur, we are concerned that intervention by the corrections officers could have negative consequences for inmates who are recruiting or participating in the study. For these reasons, we will recruit women as they leave the prison. All women who are discharged leave between 0800 and 0900 am, Monday to Friday from the same exit of the prison. We will have a research assistant who is not a former inmate invite participation in the study at that point. Women will be given an information pamphlet with contact information for the project and may choose to consent at that point or contact us at the 1-800 number if they wish at a later date.

Research proposal

1.0 INTRODUCTION

The health of women incarcerated in our Canadian penitentiaries has not been studied in a systematic fashion, nor has the role of the health care system in addressing predisposing conditions to incarceration and recidivism. Studies of women in prison outside of Canada have focused on trajectories within the criminal justice system, for example, risk factors for re-engagement in criminal activities and re-incarceration. Few studies have looked at imprisonment as an outcome of unmet health needs and marginalized social environment. The overwhelming majority of women in prison live in abject poverty, experience abuse and violence in both childhood and adulthood, struggle with substance use issues, and social dislocation. The proposed study will answer the following questions: How do women's abilities to meet their health and social needs in the year following release from prison impact on their ability to re-integrate into the community and what are the barriers and facilitating factors that they face in trying to meet these needs?

2.0 BACKGROUND

2.1 Canadian Context: Women in Prison

In Canada, the number of women sentenced to prison for greater than two years has almost doubled since 1995, with an almost 300% increase in some provinces¹. Approximately 7,000 sentenced admissions to Canada Correction Services in 2003 were women.² In federal jurisdictions, about 400 women are in custody at any one time.³ In British Columbia, approximately 1500 women are incarcerated annually.⁴ Forty percent are re-incarcerated within one year of release and 70% within 2 years.⁴ The "War on Drugs", zero tolerance legal policies, the reduction in health and social services across Canada and mandatory minimum sentences are factors that contribute to this increase.⁵ Women in prison tend to be young, with approximately 60% in Canadian jails younger than 35 years of age.⁶ Nineteen percent of incarcerated women in Canada received their first conviction before the age of 17 and 48% before the age of 24.³ The majority of women are sentenced to prison terms for drug-related offences⁶ and more are imprisoned for crimes committed for economic survival and/or to support addictions (solicitation for the purposes of sex work, drug dealing, fraud, carrying narcotics); this has had a particularly detrimental effect on aboriginal women.⁷ Aboriginal people constitute approximately 2% of the general population in Canada but 20% of the female federal prison population and almost one quarter (23%) of the provincial/territorial population.⁶ Advocates describe this situation as an extension of racialized policies (such as colonization and the residential school system) that result in disproportionate numbers of Aboriginal people living in poverty, coping with addictions and child welfare seizure.^{8, 9} Thirty-five percent of women in provincial/territorial jails and 48% in federal jails have a Grade 10 or lower education.⁶ Unemployment rates are 60% and 80% respectively.⁶ In Canada the average annual cost of incarcerating a woman is \$150,897 per year and the cost of supervising a women on parole is \$19,755.³ We propose that addiction and incarceration often follow a lifetime of chronically unmet health and social needs for women. We also predict that readmission to prison can be predicted on the basis of these needs.

2.2 Trajectories Towards Incarceration

At least two national US studies have included questions about victimization histories in surveys with incarcerated women. Over one third of participants in these studies have reported sexual abuse between the ages of 5-14.^{10, 11} At least one study has indicated that for many women, prison was viewed as a safe haven.¹² A retrospective study of life trajectories of over one hundred women inmates in a US jail, reported that rates of physical, emotional, or sexual abuse as children were 44-51%. The mean age when drug and/or alcohol use began was 16.¹³ Among women exposed to abuse as children, 47-70% reported abuse as an adult. A large study of prison-based therapeutic communities in California comparing intake histories of over 8000 men and women found that women were twice as likely to have reported sexual and physical abuse as a child (27 vs. 13%) and as an adult (27% vs.

3%).¹⁴ Women were more likely to report daily drug use prior to incarceration. Women were at twice the risk of having a co-occurring psychiatric disorder (27 vs. 14%).

Approximately 72% of incarcerated women have used alcohol and drugs.¹⁵ Empirical studies have shown a strong association between histories of family violence and development of later alcohol and drug problems in survivors.¹⁶⁻¹⁸ One review of drug addiction among incarcerated women stressed the gendered nature of women's use.¹⁹ Sexual trauma is a key contributor to women's drug use with rates of sexual abuse ranging from 30-75% in reported studies. Women had lower self-esteem than men and were more likely to express a need for drug treatment. This review calls for longitudinal studies to document women's abuse during the transition to community.

Very little work addressing trajectories towards incarceration of women has been published in Canada. A review by Blanchette emphasizes the need for risk classification for women since "a decade of empirical research originating in Canada substantiating the principles of risk and need" is derived "almost without exception from samples of male offenders."²⁰

2.3 The Unmet Health Needs of Incarcerated Women

Medical issues for incarcerated women differ significantly from those of male prisoners. Many women enter prison with chronic illnesses or are diagnosed with such illnesses while in prison.²¹ Commonly occurring illnesses are hypertension, epilepsy and diabetes, which are exacerbated by incarceration.²² Survival sex work has predisposed women to sexually transmitted diseases, including HIV/AIDS and hepatitis, but screening for these diseases is not routine in all prisons. A recent study of federal women inmates in Canada by Prisoners' HIV/AIDS Support Action Network (PASAN) reported that one in four women engage in high risk behaviours for the transmission of HIV and Hepatitis C (HCV).²³ Between 1996 and 2000 there has been a 35% increase in known HIV infections among federally incarcerated women. At 4.7%, the prevalence is significantly higher than the rate for male prisoners (1.66%). Rates of reported HCV range from 40% in Kingston, Ontario to 78% in the Burnaby Correctional Centre in British Columbia.²³

Knowledge of preventative self care is low among women who are incarcerated. A study of 197 women in a UK state prison reported knowledge of the recommended frequency of breast self-examination to be 27%.²⁴ Only 3 among 75 women aged 18-50 years in a Southern US prison had had a mammogram in the previous 3 years.²⁵ Mammography and cervical cancer screening is available on request in Canada but is not a routine part of prison health care. Weight gain is another problem reported by incarcerated women.^{22, 23} In one study of prison diets, a mean weight gain of 14 pounds was reported per inmate, with inadequate access to eggs, vegetables, and fruit.²⁶

Psychiatric morbidity is common among incarcerated women. An early Canadian study of incarcerated women reported a 12% rate of psychiatric diagnosis, including 4% for psychotic disorders.²⁷ This compares to a study of all women newly admitted to Irish prisons in 2002 reporting rates of 5.4% for psychotic disorders and 16.3% for major depressive disorders.²⁸ Reported rates of were 14% for psychosis and 23% for depression in England and Wales in 2003.²⁹

Studies from the US estimate that 5% of the female prison population is pregnant at any given time.³⁰ The number of pregnant women in jail in Canada is not reported. Support and companionship necessary for the development of maternal identity is missing in the prison environment.³¹ Concern about appropriate childcare preoccupies incarcerated women.³⁰ They experience anxiety, depression, inadequacy and loss.^{15, 32} The children of incarcerated mothers experience loneliness, fear, embarrassment, and social stigma.³³ Some are placed in foster care and are separated from other family members.³⁴ The number of children under the age of 12 whose mothers are incarcerated in Canada is unknown.

2.4 Transitioning to Community

The transition from confinement to community can be difficult. Most of the research on recidivism has been completed on male prisoners.³⁵⁻³⁷ Since there are relatively few women on conditional release in the community in any one location, there is a paucity of group-based

programming for them. Studies of women's transition from prison to community in Canada are non-existent.

2.41 Gender and Sex Differences

In a gender analysis in California, intake interviews were compared between 4,386 women and 4,164 men from 16 prisons. Women were at a substantial disadvantage compared with their male counterparts with regard to histories of employment, substance abuse, psychological functioning, and sexual and physical abuse prior to incarceration.¹⁴ Psychological impairment was the strongest predictor of recidivism in both men and women. A recent study comparing predictors of recidivism for 300 men and 300 women concluded that urban residence, childhood and recent abuses, living with a criminal partner, selling drugs, stress, depression, fearfulness, and suicidal thoughts are stronger positive predictors of recidivism for women than for men.³⁸ The strongest predictors overall for women were number of children, recent sexual abuse, stress, recent physical maltreatment, poorer quality of relationship with partner, living with a criminal partner, depression, and childhood sexual abuse. Job satisfaction and education lengthened time in the community more for men than women, whereas the number of children and relationships were more important to tenure in the community for women. This paper highlights the importance of social bonds; attachments to family, partner and friends are stronger deterrents to criminal behaviour in women than in men. Education modifies criminal behaviour differently in women as well. In a US national study of supported work, each additional year of education reduced women's risk of self-reported illegal earnings by 18% but increased men's by 2%.³⁹

Qualitative studies exploring factors that support women's transition to community are rare, but consistently report that needs of women re-integrating into society are gender and culture specific. In one study of 27 women in Texas, predictors of successful reintegration included religion or spirituality, female support groups, and support from friends who were not drug-involved.⁴⁰ A review of other qualitative studies involving 42 women in total, identified treatment for substance abuse, primary health care, violence prevention, treatment for PTSD, educational and employment services, secure and affordable housing and child advocacy and family reunification as protective factors for re-incarceration.⁴¹ Basic needs for safety and protection from abuse upon release was a recurrent theme in these accounts. Women in abusive relationships continue to be controlled, manipulated, threatened, and even stalked by their abusers.

2.42 Pre-Release Programs

Programmatic approaches to recidivism have been reported in the US. One program for survivors of family violence that included educational activities, support groups, and individual counselling was evaluated among 220 inmates. Small groups addressed issues of survival of child abuse, child sexual abuse, and partner violence. Women were followed for 21 months, and those in the program had less than half the recidivism rate (10% vs. 24%) of non-participants, controlling for type of crime, ethnicity and age. Other studies have shown that, among women, strong primary relationships have been shown to contribute to self worth.^{42, 43} A residential therapeutic community established at a pre-release minimum security facility in Washington State reported a recidivism rate of 13% within two years compared to 30% among women who had been on a waiting list but not admitted to the program.⁴⁴ The Forever Free Program at the California Institution for Women followed a cognitive-behavioural curriculum for 20 hours each week.⁴⁵ It included individualized case planning, educational workshops, transition planning, self-esteem workshops, assertiveness training, treatment for posttraumatic stress disorder, and training in parenting, sex and health-related issues. Compared to women attending an 8 week substance abuse education course, women in the residential program had significantly lower rates of recidivism; 50% vs. 75%. As well, women in the program were significantly more likely to be employed after release; 65.3% vs. 44.7%. A preparation for discharge program at Rhode Island State Prison for Women reduced recidivism at one year from 45% to 33%.⁴⁶ Physicians and social workers worked with inmates to address depression, history of sexual abuse, and drug use. A plan was developed to deal with substance abuse treatment, mental health services, financial aid

applications, employment and training, continuing education, and housing. Housing was viewed as the most important issue. Of particular interest, in one of the few studies of successful integration, O'Brian reported that establishing safe and sufficient housing, supportive relationships, employment and becoming a member of the community needed to be successfully negotiated in order to avoid recidivism.⁴⁷

In 2004, the British Columbia Corrections Branch, Ministry of the Public Safety and Solicitor General undertook a study to examine the basic characteristics of the Community Risk Needs Assessment (CRNA) data used in the community management of male and female offenders in BC.⁴ There were statistically significant differences between gender groups on all needs. Women were rated as having greater needs with respect to family relationships, academic/vocational skills, employment, financial management, and behavioural/emotional stability. This tool (Appendix A) was developed on a male offender population and was not designed to assess needs domains specifically relevant to female offenders. The report acknowledges that women commit crimes for different reasons and within different circumstances than do men. It has been argued that "completely separate classification and assessment systems need to be developed for female offenders, taking into account the unique factors and circumstances associated with female criminality."³

In the current study, we aim to follow, for the first time, a cohort of women who are discharged from incarceration for a period of one year in order to understand factors that support their re-entry into society and avoidance of re-incarceration. To date the focus of the ACCW women's health research team and of ACCW management has been the development of health promotion interventions inside prison. However, women have identified that they want to better understand the factors that will assist them to reach and maintain these goals outside of prison. The focus of the current application is to support the on-going engagement of women in participatory research in partnership with academic, and community researchers after their release into the community. Our objective is to identify facilitative factors and barriers to achieving physical and emotional health after release from prison and to understand their association with successful re-integration into society. This information in turn will inform the development of a comprehensive action health strategy for women in prison and post-release.

Our pilot research has demonstrated the feasibility of engaging incarcerated women in participatory research. It is the first, to our knowledge, to incorporate inmate's knowledge of their unmet health and social needs to inform the development of a relevant and sustainable community-based health action strategy that will support improved health, both inside and outside prison, and re-integration into society.

3.0 GOAL and OBJECTIVES

Overall Goal: Our aim is to work with incarcerated and transitioning women to improve our understanding of factors that contribute to their physical, spiritual, emotional and psychological health in order to develop a community-based action health strategy that will support their re-integration into society.

Objectives

- 1) To determine the impact of women's ability to meet their health and social needs during the year following release from prison on the success of their re-integration into the community vs. re-incarceration;
- 2) To identify individual and community-level barriers to re-integration experienced by women within one year of release;
- 3) To develop a predictive model for recidivism based on health indicators and compare it's validity and accuracy with that of the Corrections Branch Needs Assessment (CRNA) tool that is currently used to identify individuals at high vs. low risk for recidivism;
- 4) To foster and evaluate community-based peer support of released women;

- 5) To engage study participants, health authorities, regional and provincial government and prison officials in translating the research into a health action strategy for incarcerated and transitioning women.

4.0 METHODS

4.1 Design

We propose a prospective longitudinal descriptive study in which we examine the impact of health and social factors on re-incarceration among women who are released from a provincial prison. Using a participatory action approach, we will employ multiple methods, including qualitative and quantitative research methods. There has been surprisingly little research to date aimed at engaging incarcerated women in developing responses to promote their health and successful re-integration into society. Given the rates of recidivism in Canada there is desperate need to re-conceptualize our approaches to identifying and responding to health inequities among incarcerated women. We believe that the participatory action research approach will enable the direct translation of research into the design of action-based strategies that are responsive to the needs of this population and we anticipate that aspects of this knowledge will be relevant to other prison populations, both in Canada and worldwide.

4.11 Participatory Action Research

A community-based, participatory action research approach (PAR) emphasizes mobilizing oppressed people to create societal-level change and is well suited to developing a health-action strategy with incarcerated women in BC. Participatory action research (PAR) is defined as a collaborative, self-reflective systematic inquiry that is undertaken to promote social and structural level change.^{48, 49} The roots of PAR began as a movement to reduce the distrust of study participants towards research for researcher's benefits and not that of the community.^{50, 51} PAR has three critical attributes: a) collaboration through the research process; b) a mutually rewarding educational experience for researchers and community members; and c) tangible action based on research results.⁵⁰ PAR stresses that the research participants "own" the research process and are supported to use the results to improve the quality of their lives.⁵² Of particular importance, community-based participatory research acknowledges community as a unit of identity.⁵³ Aboriginal people utilize this consultative process to improve their community's health status.⁵² It involves systems development using a cyclical and iterative process; disseminates results to all partners and involves them in the wider dissemination of results; and demands a long-term process and commitment to sustainability.⁵⁴

In order to effectively support a participatory research process, a Community Advisory Board (CAB) will be established. To date the M2W2 Association (Restorative Christian Ministry), Elizabeth Fry Society, Prince George and Okanagan, Aboriginal Mother Society, Surrey Parks and Recreation, and two women who are ACCW alumni have agreed to participate. The ACCW recreational liaison worker, (A Grange= Brown) is a co-investigator on the study and will attend the meetings as will rotating members of the academic research team (named in this proposal) with consistent attendance by R. Martin and P. Janssen, Co- PIs. Members from each of three Health Authorities will participate on the CAB; Vancouver Coastal, Fraser Health and Vancouver Island. We will also seek collaboration from the North and Interior Health Authorities.

4.2 Setting

Allouette Correctional Centre for Women (ACCW) is a medium security prison located in Maple Ridge, 30 miles from Vancouver, in British Columbia. It is an open facility for women who have received provincial sentences (that is, sentences of 2 years less than a day), or for those awaiting trial who have been deemed to present low risk. The majority of BC correctional admissions are due to crime related to illicit drug use. The length of stay for women at ACCW averages three months and ranges from a few days to 24 months. ACCW houses up to 150 women at any one time in 7 cottages. Three thousand women are admitted annually to the BC provincial correctional system; and

approximately 90% pass through ACCW. Due to multiple re-incarcerations, the number of individual women represented by these admissions is 1200 per year. The 'revolving door inmate' is a common phenomenon. As stated earlier, approximately 40% of women are re-incarcerated within 1 year and 70% within 2 years.⁴ Many have cycled in out and out of the correctional system for years.

In May 2005 Dr. R. Martin, (Nominated Principal Investigator) and physician for the Allouette Correctional Centre for Women (ACCW), B. Tolle (ACCW Prison Warden), and A. Granger-Brown (ACCW recreation therapist) formed a partnership with interested prison inmates to study factors impacting the health of women in prison. This group became known as the ACCW inmate research team. Women and staff of ACCW articulated *Values and Guiding Principles for Participatory Research* in October 2005 and the ACCW research team, the academic research team and the BC Corrections Branch Advisory Committee developed *Terms of Reference* to guide the research (Appendix B). Since November 2005, 208 women have voluntarily joined the ACCW inmate research team, with between 5 to 15 women participating at any one time.

4.3 Participants

Our surveys of 90 women at ACCW to date indicate that inmates come from all areas of the province: Fraser Valley (27%); Lower Mainland (21%); Vancouver Island (21%); 29% Interior (29%); and Northern (2%). Eighty percent have reported that they wished to return to their community after release. Among the 200 women who have participated on the inmate research team, 21% had an education level of grade 9 or lower. Fifty-three percent were Aboriginal. Thirty-five percent reported a family history of diabetes. Eighty-three percent of surveyed women surveyed in the general prison population are in need of dental care. Seventy four percent reported that they are incarcerated due to drug use; for 33% the drug of choice is heroin and for 57% cocaine or crack. Twenty-three percent started using at age 13 years and younger. Fifty-three percent had difficulty finding housing after their last release from prison and stated that this contributed to them engaging in crime-related activities.

All women capable of giving informed consent in English and who will be released within at least one year prior to the conclusion of the study will be invited to participate in the study. Some women who are sentenced for immigration-related crime are unable to speak English; this group is estimated to be less than 1% of the population.

4.4 Invitation and Consent

Women will be made aware of the study through posters in ACCW living units, by word of mouth, peer research team, and ongoing engagement in regular ACCW community health promotion meetings. This method has been successful in informing and engaging women in ACCW about the health research to date. Informed and voluntary consent is especially relevant in research involving individuals in prison. We have elected to recruit women as they leave prison to avoid any potential attempts at coercion by other inmates. Women are discharged from the prison Monday-Friday between 0800 and 0900. At this time women are either met by someone they have made an arrangement with or are provided with a taxi to go to the nearest bus stop. We will post a research assistant who is not a former inmate near the gate. The research assistant will give the woman a study brochure, which has been developed and piloted by the ACCW inmate research team (Appendix C). Women may choose to decline, give consent, or request further discussion. A meeting time will be arranged and contact information recorded, if the woman is willing, for either further discussion or an intake interview. Consent forms will be read aloud to all potential participants to ensure equivalent comprehension among those with limited reading skills. Women will be asked to give consent for access to review their prison health records, sociodemographic data in the Corrections database and their data in the Community Needs Risk Assessment database, as well as permission to contact them after release. In the event of re-incarcerations, prison officials will not be aware of who has participated in the study. All women will be provided with a copy of their consent and can choose to withdraw from the study at any time.

4.5 Protocols

Objective 1: To determine the impact of health status as defined by women inmates on successful re-integration into the community vs. re-incarceration over a period of one year.

The prison inmate team developed a conceptual diagram to model emerging themes related to health and social needs of women inmates. The model was based on over 10 community forums, consultations with ACCW women conducted to date, peer meetings and peer surveys. The research team posted the diagram in the ACCW dining hall and invited all women and staff to provide feedback, which was then incorporated into the final model (Appendix D). Needs identified by the women include: 1) improved relationships with children, family and partners; 2) improved peer and community support; 3) safe and stable housing; 4) improved access to individualized primary health care; 5) increased job skills, training, and relevant employment; 6) more exercise and better nutrition; 7) improved dentition and oral health; 8) improved access to health education, in particular infectious diseases and the outcomes of drug use; and 9) increased ability to contribute to society.

Based on the model, a semi-structured interview questionnaire (Appendix E) has been developed and piloted with women at ACCW. It incorporates questions relevant to key health and social needs identified on the conceptual model. At enrolment, participants will be asked to respond according to their situation within the 3 months prior to imprisonment. They will be re-interviewed at 3, 6, 9, and 12 months post release by a community-based peer reviewer. In addition, socio-demographic information will be solicited at enrolment. The use of consistent questions will be crucial in enabling longitudinal comparison of health and social indicators before prison and post-release in order to identify predictors for successful re-integration and improved health status. We will also ask women to complete standardized scales relevant to the needs they have identified in order to facilitate comparisons across other marginalized populations. These scales have been reviewed and piloted by ACCW research inmate team at the ACCW. They address health status, safety, and social support:

- Medical Outcomes Social Support Survey -19 items⁵⁵. (Questions 1 and 2). This widely used measure has demonstrated good internal consistency, test-retest reliability, and a stable factor structure.
- Abuse Assessment Screen - 5 items.⁵⁶ (Question 3). The AAS has demonstrated robust psychometric properties among many populations of women. It measures physical, sexual, and emotional abuse and compared to longer “gold standards” has demonstrated a sensitivity of 71.4% and a specificity of 84.4%.^{57, 58}
- Rosenberg Self-Esteem Scale-10 items;⁵⁹ (Question 9). The Rosenberg Self-Esteem Scale is the most widely used measure for the assessment of self-esteem.⁵⁹ It has been assessed in numerous studies and has been shown to possess excellent reliability and validity.⁶⁰
- World Health Organization Quality of Life Assessment Instrument. (WHOQOL-BREF) – 26 items.⁶¹ It assesses an individual’s perceptions in the context of their culture and value systems, and their personal goals, standards and concerns. The WHOQOL has been developed collaboratively in a number of centres worldwide and has been widely field-tested.

A team of peer researchers will be hired, trained and supported outside the prison system to facilitate and conduct follow-up interviews with women. On release from the prison, many members of the inmate prison team have wished to continue with their participatory health research activities. Kelly Murphy (Vancouver) and Debra Hanson (Ft. St. John) are two representatives of the ‘ACCW Alumni’ which is a self-formed network of previously incarcerated women who now live in communities across the province and who wish to participate as community-based peer researchers. (See letters of collaboration). At the time of consenting, women will also be asked to complete a follow-up tracking form, providing as much detailed contact information as possible through which they may be reached and/or pick up messages after prison release, including friends, family, parole officer, social worker,

street nurses, and members of other community agencies and organizations in the area where they plan to live (Consent Form, Appendix F). This strategy has proven successful with other research projects with substance-using populations in BC, including the Vancouver Injection Drug User's Study (VIDUS).^{62, 63} and the peer based outreach led by women in survival sex work as part of the Maka Project in Vancouver, BC.⁶⁴ In order to protect confidentiality and foster trust on the part of participants, every effort will be made to ensure that follow-up assessments will be conducted by consistent peer researchers for each participant. Women will be provided with bus tickets as needed to access a safe and quiet place for an interview with their peer-researcher.

Objective 2: To identify individual and community-level barriers to re-integration experienced by women within two years of release;

The semi-structured interview asks women to identify barriers to achievement of each of the nine health goals.

Objective 3: To develop a predictive model for recidivism based on health indicators and compare it's accuracy and validity with that of the Corrections Branch Needs Assessment (CRNA) tool that is currently used to identify individuals at high vs. low risk for recidivism;

At present the CRNA (Appendix A) is completed for every inmate. While some of the parameters of this scale address proximal indicators of well being such as family relationships and housing, others address more distal indicators such as use of substances and "attitude" which we argue may be secondary to the failure to meet more proximal needs. In contrast, based on the work of the inmate research team, we have conceptualized factors leading to re-integration/re-incarceration as a complex interaction of immediate individual characteristics and situational determinants (Appendix D) rather than the outcome of those determinants, which are addiction and crime recidivism. This conceptualization is consistent with nested ecological theory^{65, 66} and is reflected in the items in our interview guide. Nested ecological theories suggest that individual characteristics and behaviour occur against a backdrop of the family system, the circumstances in which the target behaviour (offending) occurs and the larger social context of cultural values. The CRNA tool, in contrast, is limited to four crude ratings of "asset," "no need for improvement," "some need for improvement," and "considerable need for improvement" for each parameter, based on the opinion or observation of the corrections officer as opposed to documenting information from a woman's experience.

We will analyze our interview data to assess which factors predict successful integration, that is avoidance of re-incarceration and develop a tool based on selected indicators. We will undertake separate analyses for Aboriginal vs. non-Aboriginal women, because Aboriginal women in the ACCW health research team have placed more value on certain components of the outcome of "successful integration," for example, cultural identity and contact with elders. We will compare our results to the data collected from CRNA for both aboriginal and non-aboriginal women.

Objective 4: To foster and evaluate community-based peer support of released women over a one-year follow-up period.

The development of peer research networks will be a crucial component of this project both to ensure ongoing support and capacity development of women post-release and to facilitate follow-up. As women move from ACCW through the correctional system and into the outside community, they already generate informal peer networks and natural linkages for communication that will facilitate follow-up and formalized peer networks. Drawing on the experiences of peer network research among substance-using populations in other settings,⁶⁷ our community-based peer researchers will support women leaving the prison system to stay connected with their peers and our research team. To evaluate the success of peer engagement to date and further explore the identified needs of women to

develop support networks, we will conduct 3 community forums in year two and three of the study in Surrey, Kelowna and Prince George. These one-day forums will provide a venue for peer researchers and study participants to meet in a group and offer feedback to the entire research team. Community collaborators and health authorities will provide space for these forums (see collaborator letters). Women will be provided with bus passes to attend as needed.

In addition, an interactive website currently being developed by ACCW women through our BC Medical Services Grant (<http://www.accwalumniresearch.org>) will offer a valuable means of facilitating and evaluating peer contact. Initial community forums and consultations with ACCW women identified the need for a website to provide information, including a current resource list for transitional and supportive housing, social and health support, childcare, peer support opportunities, low threshold jobs and skills training. Finally, we will organise a 1-800-number, regular Webcam videoconferences and an ACCW community research 'Facebook', as additional means of supporting communication of the women post-release with ACCW research team. We will track use of the telephone hotline and computer site and ask women about value of these communication tools at the forums as well as in the follow-up interviews. Women are able to access telephones and computers in community drop-in centres.

Objective 5: To engage study participants, health authorities, regional and provincial government and prison administration inmates in translating the research into a health action strategy to support improved health and successful reintegration into society

In the final year, a series of focus groups will be undertaken with the inmate research team to reflect on and interpret study findings. A second set of focus group discussions will be facilitated with peer researchers, key stakeholders, including housing program managers and service providers as well as the Community Advisory Board to identify potential approaches to promote sustainable support of women transitioning from incarceration back into their communities. These focus groups will help to identify key barriers to successful reintegration, as well as contextualize and validate findings from the follow-up questionnaires. All focus groups will be co-facilitated by the research coordinator and a peer researcher. Data from interviews, standardized research tools, and the focus groups will provide the basis for the development of a health action strategy which will outline the services and policies required to support the unique needs of women transitioning out of prison. Incarcerated women and women outside the prison system will be given an opportunity to contribute to the plan through the website and phone line and by participation in community forums.

4.6 Data Management

Quantitative data from interviews and assessment tools will be entered into a Microsoft Access Relational Database by a professional data entry facility. Data pertaining to study participants accessed through the ACCW databases will be downloaded by means of an individual ACCW identifier given to the research team by participants as part of the written consent process. ACCW data will be downloaded at the end of year 2, when all participants have been enrolled, to minimize use of ACCW resources. ACCW data will be transferred to a CD Rom to which only the Co-PIs and the data entry personnel will have access. It will then be merged with data from assessment tools using the unique identifier. Focus groups will be tape recorded and transcribed. Data will be housed at the Women's Health Research Institute (WHRI), where R Martin and P Janssen (Co-PI) are Associate Members. This facility has secure entry procedures, double locked doors, and 24 hour security monitoring. The data will be stored on a non-networked PC that is password protected and kept in a locked office.

4.7 Data analysis

A multivariate model will be constructed in which health and social support variables will be entered to predict women's achievement of successful re-entry into society. In addition to the variables identified as potential predictors based on pilot work and the literature, socio-demographic information

including age, partner status, education, ethnicity, employment and geographic location will be entered into the model. Hierarchical logistic regression will be used to measure the contribution of individual variables to the prediction of successful integration into life outside of prison, with non-modifiable factors entering the model first. General linear models with repeated measures analysis will be used to incorporate and evaluate within vs. between differences among individuals as they are followed over time.⁶⁸ These two processes will identify variables for inclusion in our assessment tool.

Standard methods of scale development will be undertaken for the assessment tool, including establishment of face validity by the ACCW inmate health research team, followed by piloting and revision. Internal validity or reliability (Cronbach's alpha) will be reported. Exploratory factor analysis will be undertaken to evaluate the strength of the relationship of individual items with identified concepts and to determine the plausible underlying structures of the measure.⁶⁹ Construct validity will be further examined by undertaking a comparative analysis of predictive ability with respect to re-incarceration with the Community Risk Needs Assessment (CRNA), currently in use at ACCW. We will first examine cut-off points in an analysis of receiver-operating curves⁷⁰ and then report the sensitivity, specificity, and positive predictive value compared to the CRNA using data from participants enrolled since the beginning of the study. In recognition that individual participants will be followed for different periods of time, a multivariate survival analysis using Cox' regression will be undertaken to compare the ability of scores on our new predictive tool with those on the CRNA to predict time to re-incarceration.⁶⁹ These are sophisticated analyses and will require consultation with a PhD level statistician. Data will be collected and analyzed for women who have repeat admissions to the ACCW during the study period. Predictive models will be constructed firstly for all readmissions (any admission) and then using each woman's data only once (first readmissions). Throughout this process, aggregated data will be returned to women of the ACCW Health Research Team for further dialogue and interpretation, thus ensuring mutual learning and capacity building within the ACCW.

Transcription and analysis of qualitative data will take place immediately following the focus groups using Nvivo 7 qualitative analysis software.⁷¹ Nvivo 7 permits the coding of documents with graphical display of connections between concepts, emerging themes, and specific text. Inductive content analysis of interview data will utilize the method of grounded theory⁷² in which open coding techniques are used to assign a conceptual code to pieces of data through constant comparative analysis.⁷³ Codes are then sorted into categories of similar or related phenomena that will capture key dimensions of the experiences, positive and negative, that women live through.⁷⁴

5.0 FEASIBILITY

This project is being conducted through the ACCW participatory research initiative, a project developed since 2005 in partnership with the prison system, incarcerated women, community agencies, ACCW staff and researchers. Our initial pilot research to date has highlighted the feasibility of conducting research at ACCW, with direct participation of incarcerated women in conceptualising and conducting research in this setting. R. Martin (Co-PI) has worked as a physician in the ACCW medical clinic since 1994 and has well established working relationships with the prison leadership and staff.

Although initially considered a limitation, we now know that the 'revolving door' phenomenon enhances the success of action research at ACCW. Our pilot work has shown that women at ACCW are motivated to engage in research as they prepare for re-integration into outside life. As women move from ACCW through the correctional system and into the outside community, they generate informal peer networks and natural linkages for communicating that will facilitate follow-up with community-based peer researchers. Access to computers for the community peer researchers has been facilitated by donations in kind from the *Free Geek Community Technology Centre*. (See letter of support)

With respect to sample size, a previous study of Canadian incarcerated women reported a 70% participation rate in an interview-based Montreal study.⁷⁵ A study of chemically dependent women underway by one of the applicants (P Janssen) is experiencing 60% participation. At a conservative estimate of 25% enrolment we would have 300 women in the study per year for two years. With 600 participants, we would experience 240 women returning to jail which would be sufficient to test at most

24 variables in multivariate predictive model.⁶⁹ Our total of 600 subjects would be twice the recommended 300 on which to base a factor analysis.⁶⁹

6.0 LIMITATIONS

Studies involving marginalized population are challenging due to difficulty accessing the people of interest. This is especially true for women who have been incarcerated, many of whom continue to function on the margins of society due to their illicit drug use, sex trade work and crime. Our challenge will be maintaining contact with women. Women who are lost to follow-up but then return to prison will be re-assessed if they are re-discharged within the study period, thus reducing some of the losses to follow up. The collaboration with community peer researchers who already have trusting relationships with women in ACCW presents a unique opportunity to engage women who would otherwise be inaccessible for research studies. The participation of peers is critical to the success of the program. We expect that there will be some turnover among the peer researchers as some may return to prison. We hope that the project-based research network will prevent some of the recidivism.

7.0 ETHICAL CONSIDERATIONS

The work to date with inmates at the ACCW has been approved by the UBC Behavioural Research Ethics Board. We have a five year agreement, signed in 2006, with the Ministry of Public Safety and Solicitor General, Corrections Branch, outlining the terms of access to Corrections data and assurance of confidentiality and anonymity (Appendix G). We will submit the current proposal for approval to the UBC Behavioural Research Ethics Board in October, 2007.

9.0 KNOWLEDGE TRANSLATION AND DISSEMINATION

The participatory nature of this project facilitates dissemination with the individuals and agencies that intersect with women transitioning from prison to the community. We will further support knowledge dissemination by means of forums in Surrey, Kelowna and Prince George during the study. Our study website will be an avenue for the general public to become aware of our findings, as will press conferences held in association with publication of findings. We will invite the aboriginal Mother Centre Society, the UBC First Nations House of Learning, and the First Nations and Inuit Health Branch, Health Canada to assist in interpreting and disseminating the findings. P. Janssen (Co-PI) as Task Force Leader of the UBC MPH Program, is working with Karen Joseph and other contributors to the First Nations Health Plan, BC Ministry of Health, another avenue for dissemination within the aboriginal community.⁷⁶

Our research findings will also be presented at national and international meetings and through peer-reviewed journals. In keeping with the values of participatory research, women of the ACCW health research team have articulated that they wish to be given the opportunity to be identified as co-authors of the publications and presentations to which they have contributed. Knowledge translation will occur through the incorporation of study findings into an action health strategy that will be developed by the research team in partnership with the community advisory board. Involvement of decision makers in the ACCW health research forums to date, and the willingness of the ACCW management team to utilize study findings in future risk assessment will promote the translation of our findings to other provincial and federal correctional institutions

8.0 TIMELINE

Month	Year 1		Year 2		Year 3	
	0-6	7-12	13-18	19-24	25-30	31-36
Study preparation Meeting of community advisory committee Hiring of study staff Train community peer researchers Implement 1-800 phone line Development of web site Preparation of information posters Training of RA for interviewing	[Gantt chart showing study preparation activities from month 0-6]					
Conduct of the Study Recruitment of subjects/initial assessments Follow-up assessments	[Gantt chart showing recruitment and follow-up assessments from month 0-36]					
Data analysis Development of predictive model for successful transition to community	[Gantt chart showing data analysis from month 31-36]					
Data interpretation and synthesis Focus groups with inmate prison team, community-based researchers Community forums	[Gantt chart showing data interpretation and synthesis from month 25-36]					
Development of an health action strategy Meeting with peer community researchers, community advisory group	[Gantt chart showing development of health action strategy from month 25-36]					
Dissemination of health strategy	[Gantt chart showing dissemination of health strategy from month 31-36]					

10.0 PUBLIC HEALTH RELEVANCE AND POTENTIAL IMPACT

In Canada, our research will follow women as they leave the Canadian provincial prison system and provide a realistic view of their preparation to re-enter in the outside world. The extent to which basic health needs, both physical and psychological, are unmet, has not been studied among incarcerated women in Canada. It is clear from US studies that networks, housing and other social aspects of re-integration are important, but how these needs are addressed in our Canadian health and social welfare system will be illuminated in our study. This knowledge in turn will pave the way to intervention studies that look beyond addiction as “the problem” to the root causes of addiction and pathways towards self-care and independence.

For the first time, we will build research capacity within the corrections system, by using participatory methods to engage administrators and previously incarcerated women as co-researchers. In doing so, we build on considerable work that has been done in British Columbia at the ACCW to date. The participation of former inmates will support the relevance and utility of our methods and findings. This research will also advance the use and knowledge of participatory research with vulnerable populations.

We anticipate that this project will result in the development of a comprehensive province wide action health strategy for incarcerated and transitioning women (and their children, families and communities), which will require the acquisition of sustainable funding and the introduction of policy changes for implementation and evaluation. We also anticipate that prison populations nationally and internationally will be interested in adopting similar participatory approaches to improve the health and (re)integration of their populations.

11.0 PROJECT TEAM

Members of this multidisciplinary team have worked together on pilot work at the ACCW since October 2005, albeit with limited funding, and all are committed to adopting participatory approaches to generating knowledge to address the health and social needs of incarcerated women.

R Martin, MD co-principal applicant, has worked within the prison system for 12 years and has led the pilot studies that informed this grant proposal. She will be primarily responsible for leading research activities on a day-to-day basis in partnership with ACCW administrators and inmates.

P Janssen, RN, MPH, PhD, co-principal applicant, is an Associate Professor, UBC Department of Health Care and Epidemiology, Co-Director of the CIHR-funded Interdisciplinary Women's Reproductive Health Research Training Program. She has published widely in the area of women's health with a focus on intimate partner violence. She will be primarily responsible for study design and data analysis.

K Shannon, MPH, PhD (c), BC Centre for Excellence in HIV/AIDS and University of British Columbia is co-principal investigator and project director of two CIHR-funded community-based HIV research grants focused on identifying and responding to gaps in HIV prevention, treatment and care among women in survival sex work. She has published in the area of women's sexual health, substance-use, and HIV prevention and care. She will provide support in community-based research process and partnerships.

J Buxton, MBBS, MHSc. is Director of the Community Medicine program, Dept of Health Care and Epidemiology. Her work and publications have focused on vulnerable populations, including women and youth with addictions and Hepatitis C sero-positivity.

B Calam, MD, MHSc. is an expert in rural primary health care. She lived and worked with aboriginal population in the Haida Gwaii for twelve years. She has also studied cervical cancer screening in prisons. She brings experience in use of qualitative research methods including interview techniques.

L Fels, PhD is an Assistant Professor at Simon Fraser University. Her research focus is on the role of language, literacy and education in the health and social well being of incarcerated women.

C. Leggo, PhD is a Professor in the Department of Language and Literacy, UBC. His research expertise is in discursive practices of gender and popular culture.

J Frankish, PhD, is the Associate Director of the Institute of Health Promotion Research at UBC. His work has focused on participatory action research and working with communities.

Gina Ogilvie, MD, MSc, is Associate Director of the STD/HIV Prevention and Control Division of the BC Centre for Disease control. She is in charge of the street nurse program that will be a pivotal part of our outreach methods for contacting women for follow-up.

T Corneil, MD, MHSc is Medical Director of the Division of Urban Primary Care for Vancouver Coastal Health. He will facilitate translation of knowledge generated from this work into policy across health and social service sectors.

D Wardman, MD, MHSc, is an aboriginal researcher with expertise in First Nations approaches to addiction. He is employed by Health Canada, First Nations and Inuit Health Branch will also play a pivotal role in knowledge dissemination to decision-makers in Aboriginal Health.

S. Desmarais, PhD, (C) is a forensic psychologist whose work focuses on development of instruments to assess risk for criminal behaviour and recidivism.

M Buchanan, PhD, is a clinical psychologist who has published in the area of traumatic stress. She will provide expertise and guidance to peer researchers as they work with women in crisis.

A Macaulay, MD, McGill University, has received the Order of Canada for her community-based participatory research with indigenous communities. She will bring her vast experience in preventive health among aboriginal populations in Quebec and Alberta to this project.

V. Ramsden, RN, PhD, University of Saskatchewan, has published in the area of health promotion among women marginalized by poverty in inner city settings. She has also used action research integrated with participatory research as a method for enhancing cross-cultural learning and primary health care reform.

N. Fairbrother, PhD, University of British Columbia is a clinical psychologist whose area of expertise is anxiety and traumatic stress disorders. She will assist with measure selection, development and validation of the risk-assessment tool to be developed.

L. Condella, MA, is a criminology instructor with the Nicola Valley Institute of Technology. She brings expertise in community engagement of marginalised aboriginal people.

A. Granger-Brown, MA has studied the processes by which incarcerated women engage in adult learning. She is currently the recreation therapist at ACCW.

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