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MINISTRY OF HEALTH
INFORMATION BRIEFING NOTE

Cliff #: 943999

PREPARED FOR: Honourable Dr. Margaret MacDiarmid, Minister of Health
- FOR INFORMATION

TITLE: Concussion Prevention and Management

PURPOSE: To provide a status update on Honourable Moira Stilwell's, Minister of Social Development, private member's bill calling for "Return to Play" legislation.

BACKGROUND:
Concussion has received enormous attention in recent years, both in lay and scientific literature, especially in the areas of football and hockey. The Centers for Disease Control, Atlanta (the Center) has estimated that 1.6 to 3.8 million cases of sport-related concussions occur annually in the United States. In British Columbia, there were 2,475 hospitalizations due to concussion from 2001 to 2008, averaging 309 cases per year. Of these, 43 percent were among children and youth 0-19 years of age, 34 percent among adults 20-54 years, and 23 percent among older adults 55 years and over.

Concussion is among the most devastating of catastrophic injuries, with twice the death rate of injuries overall. Therefore, concussions are classed as a significant public health issue. This has resulted in the Ministry of Health taking a leadership role in developing resources and programs to prevent concussions and working closely with the BC Medical Association (BCMA) and provincial sports organisations to establish standardized concussion management protocols and guidelines. The Ministry of Health collaborates closely with the Ministry of Community, Sport and Cultural Development, which has a role to support education around the issue through partnerships with SportMed BC and provincial sports organisations.

On November 17, 2011, Minister Stilwell introduced a private member's bill (Bill M206) calling for "Return to Play" legislation (Appendix A). Bill M206 called for youth "high risk" sport organisations to develop and adopt concussion guidelines, educational forms to be signed by athletes and parent/guardians, and licensed health care providers to evaluate and provide clearance to return to play.

The proposed legislation contained within Bill M206 is aligned to similar legislation that has been implemented recently in several states in the United States. Minister Stilwell has received feedback (Appendix B) via the Chief Legislative Drafter with a number of questions to be answered on Bill M206 in order to move it forward.

In the past few years, there has been increased legislative action for concussion prevention and management in North America. The State of Washington legislation, known as *Zackery Lystedt Law*, became effective in July 2009, and is commonly referred to as the 'standard'. Most of the wording and concepts in Bill M206 have come from the *Zackery Lystedt Law*. No Canadian province or territory has implemented a concussion law; however, Quebec has an "Act Respecting Safety in Sport" which gives the sport minister authority to make or approve sport federation safety regulations, and incorporates a number of specific safety issues (e.g. combative sports, athletic commissions, alpine ski standards/regulations).

The Government of Ontario has recently carried the first reading of Bill 39, *Education Amendment Act* (Concussions), 2012. The proposed legislation will require Ontario schools to adhere to specific back-to-school protocols after a student athlete suffers a concussion. To support return to learning/academics following a concussion, the Center has recently released **Heads up to Schools – Know your ABC's**. The resources have been well received by teachers and parents. The Center has granted permission to the BC Injury Research and Prevention Unit to adapt the resources for use in BC.

On August 7, 2012, the Minister of Health's Office sent a request on behalf of former Parliamentary Secretary Dr. Moira Stilwell, to Ministry of Health staff for input to help guide a provincial consultation process on the proposed legislation to be led by Minister Stilwell in September/October 2012. Upon receipt of the requested information, the

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On September 17, 2012, a reporter from the Globe and Mail Toronto sent a request to interview Minister Stilwell on Bill M206 and whether BC would be proceeding with similar legislation to the proposed Bill 39 in Ontario. The response to the media request was that Minister Stilwell will be meeting with her colleagues responsible for health, education and sport, to discuss next steps.

Minister Stilwell is scheduled to present on Bill M206 at the BC Concussion Advisory Network (the Network) on November 15, 2012. The Network was established by the Ministry of Health in 2009 to bring together the provincial leaders for concussion prevention and management.

DISCUSSION:
During the August 21, 2012 briefing, Minister Stilwell stated that the provincial consultations will help guide her decision as to whether legislation is required at this time. It is anticipated that Ministry of Health staff will be asked to support the consultations with information and attendance.

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The Ministry of Health is currently working in partnership with ChildHealth BC, the BC Injury Research and Prevention Unit, BCMA, and the Provincial Health Services Authority to standardize concussion prevention and management in BC through the development of guidelines and protocols and training programs for health care staff, coaches and parents.

ADVICE:
The meeting with Minister Stilwell provides an opportunity to clarify whether proposed provincial consultations will still take place and to discuss whether concussion legislation will go forward as a future Ministry of Health initiative.

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BC INJURY research and prevention unit

CHILD HEALTH BC
LEAD BENEFACTOR
Overwaitea Food Group

THE BURDEN OF CONCUSSION IN BRITISH COLUMBIA
With a special focus on Children and Youth

Authors:
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September 2012

The British Columbia Injury Research and Prevention Unit (BCIRPU) was established by the Ministry of Health and the Minister's Injury Prevention Advisory Committee in August 1997. BCIRPU is housed within Developmental Neurosciences and Child Health (N2N) cluster and supported by the Provincial Health Services Authority (PHSA), the Child and Family Research Institute (CFRI) and the University of British Columbia (UBC). BCIRPU's vision is "to be a leader in the production and transfer of injury prevention knowledge and the integration of evidence-based injury prevention practices into the daily lives of those at risk, those who care for them, and those with a mandate for public health and safety in British Columbia".

This report was commissioned and funded by Child Health BC. Child Health BC, an initiative of BC Children's Hospital, is a network of health authorities and health care providers dedicated to excellence in the care of infants, children and youth in British Columbia.

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September 2012

TABLE OF CONTENTS

INTRODUCTION

Concussion and mild traumatic brain injury (mTBI) – used synonymously in the literature – have received enormous attention in recent years, both in the media as well as the scientific literature. The Centers for Disease Control has estimated that 1.6 to 3.8 million cases of sport-related concussions occur annually in the United States [1]. Sport and recreational activities contribute to about 21 percent of all traumatic brain injuries among children in the US [2]. This means that nearly 80 percent of head injuries are not sports-related.

A concussion can occur to anyone from a variety of causes, such as hitting your head while falling down a flight of stairs, falling off a slide in a playground, or running into a door frame. Concussions are caused by a direct blow to the head or other body part resulting in a rotational movement of the brain within the skull. Concussion can occur with or without loss of consciousness and symptoms can be subtle, including headache, confusion, nausea or dizziness, and may not appear for hours or days. Recommended treatment includes both physical and mental rest [3].

If an individual returns to activity too soon and a second concussion is sustained before recovering from the first, a condition known as second-impact syndrome (SIS) may occur: a swelling of the brain that can result in brain damage causing severe disability or even death [3]. Furthermore, an individual is 3-times more likely to sustain a second concussion while in recovery from a concussion [4].

The short- and long-term effects of concussion can vary from person to person and can greatly affect quality of life. A significant percentage of professional hockey and football players, as well as high school athletes, with previously reported concussions or other head-related injury were found to have reported an impact on their social and professional lives including difficulties at work, attending school, playing sports and other simple activities such as riding stationary bicycles or lifting weights [5]. This implies that the long-term effects of concussion are often not recognized early enough to prevent post-concussion syndrome and permanent brain damage.

Although concussion has not been recognized as a potentially life threatening condition in the past, SIS is the most catastrophic and lethal brain injury resulting from sport-related trauma [6].

Concussion is among the most devastating of catastrophic injuries, with twice the death rate of injuries overall [7]. Evidence exists that children and adolescents take longer than adults to recover following a concussion [8], and can permanently change the way a child or youth talks, walks, learns, works and interacts with others. Therefore, concussion management and appropriate return to activity is crucial, particularly in the pediatric and adolescent populations.

Active and timely rehabilitation is essential for concussion patients who remain symptomatic longer than a six week period. This may include physiotherapy, occupational therapy, educational support, neuropsychology and in some case neuropsychiatry. Coordination by integrated team of professionals is required to tailor a unique rehabilitation plan for each patient.

Concussions impact the lives of children and youth at all levels and therefore having a provincial program in place with immediate access is crucial to their quality of life and future.

Purpose

The purpose of this report is to describe the burden of concussion in BC, for the general population, with a special focus on children and youth ages 0 to 19 years. This will be accomplished by describing mortality and hospitalization data at the provincial level, as well as emergency department visits at participating sites within Vancouver Coastal Health (VHC), Fraser Health (FH), and the BC Children's Hospital (BCCH) located in Vancouver within the Provincial Health Services Authority.

This report will be used to facilitate discussion around the need for a concussion program for children and youth in BC.

THE BURDEN OF CONCUSSION IN BRITISH COLUMBIA - AN OVERVIEW

Mortality

- Head injuries accounted for 2,781 deaths in BC during the 2001-2010 period.
- 66.4% of all head injury deaths were males.
- 9.5% of head injury deaths were children and youth ages 1-19 years.
- There were no head injury deaths documented to be the result of a concussion.
- Age-specific head injury mortality rates were lowest among children 5-9 years of age (0.74/100,000), and highest among older adults aged 90 years and over (70.14/100,000).
- Head injury mortality rates among children and youth ages 0-19 years were seen to decline significantly (p=0.014) from 2001 to 2010.
- Head injury mortality rates were consistently higher among males within the 0-19 year olds.
- Crude head injury mortality rates were highest in Northern and Interior Health and lowest in Vancouver Coastal and Fraser Health.
- Interior Health ranked seconded highest for age-specific head injury mortality among 0-19 year olds.

Hospitalization

- Head injuries accounted for 42,766 hospitalizations in BC during the 2001-2010 period.
- 22.2% of head injury hospitalizations were children and youth ages 1-19 years.
- Concussion accounted for 9.7% of all head injury hospitalizations.
- Age-specific concussion hospitalizations rates were lowest among 30-34 year olds (5.27/100,000), and highest among older adults 85-89 years and over (27.44/100,000).
- Among children and youth, concussion hospitalization rates were highest among 10-14 year olds (19.80/100,000); second highest among teens 15-19 years (17.14/100,000); and lowest among infants less than 1 year (6.93/100,000).
- 69.2% of all concussion hospitalizations among children and youth 0-19 years were males.
- Crude concussion hospitalization rates were highest in Northern and lowest in Vancouver Coastal and Fraser Health.
- Age-specific concussion hospitalization rates for ages 0-19 years showed the same geographic pattern as for the total population.

Lower Mainland Emergency Departments (VCH/FH/BCCH)

- There were 16,888 concussions seen in emergency departments throughout the BC Lower Mainland in 2011: 6,651 from VCH (2011); 8,959 from FH (2011/12); and 1,278 presenting to BCCH (2009).
- 59.4% of all concussion emergency department visits were males.
- 39.5% of concussion emergency department cases were children and youth ages 1-19 years.
- Age-specific concussion emergency department rates were highest among infant less than one year of age (1,930.58/100,000), followed by young children ages 1 to 4 years (1,714.99/100,000).
- The leading cause of concussion was falls (32.5%), followed by sports and recreational activities (15.5%) and struck by or against an object (9.4%).

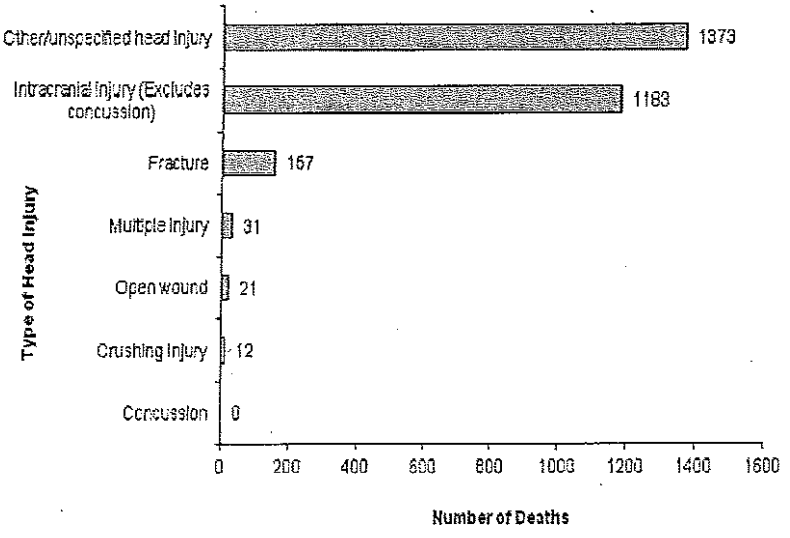
BC Children's Hospital

- 9,027 children and youth ages 0-19 years presented to BCCH with a concussion/minor head injury during the 2001-2009 period.
- 36.9% of concussions/minor head injury seen at BCCCH were young children ages 1-4 years.
- 61.7% of concussions/minor head injury seen at BCCCH were males.
- Concussion emergency department visits to BCCH were seen to increase significantly (p=0.001) from 2001 to 2009.
- The proportion of concussions and minor head injury occurring at home decreased with age; while the proportion occurring in educational institutions and places of sport and recreation increased with age.
- Among infants less than one year of age, 28.7% of all concussions/minor head injuries occurred while sitting, 8.7% playing, and 6.7% walking.
- The highest proportions of concussions/minor head injuries for organized sports were among 15-19 year olds (32.6%) and 10-14 year olds (27.1%).
- Use of at least one type of safety equipment at the time of sustaining a concussion/mild head injury was prevalent during organized sports (54.5%), transportation (52.9%) and bicycle riding (45.3%).
- Helmet use was highest for ice hockey (84.3%), horseback riding (76.5%) and lacrosse (76.2%).

MORTALITY FROM HEAD INJURIES IN BC, 2001-2010

There were 2,781 deaths resulting from head injuries in BC over the 10-year time period from 2001 to 2010. Males accounted for 66.4 percent (1,846) of these deaths. Children and youth ages 1 to 19 years accounted for 9.5 percent (265) of all deaths due to head injury. Males within the child and youth age limits accounted for 68.3 percent (181) of all cases. There were no head injury deaths among infants less than one year of age.

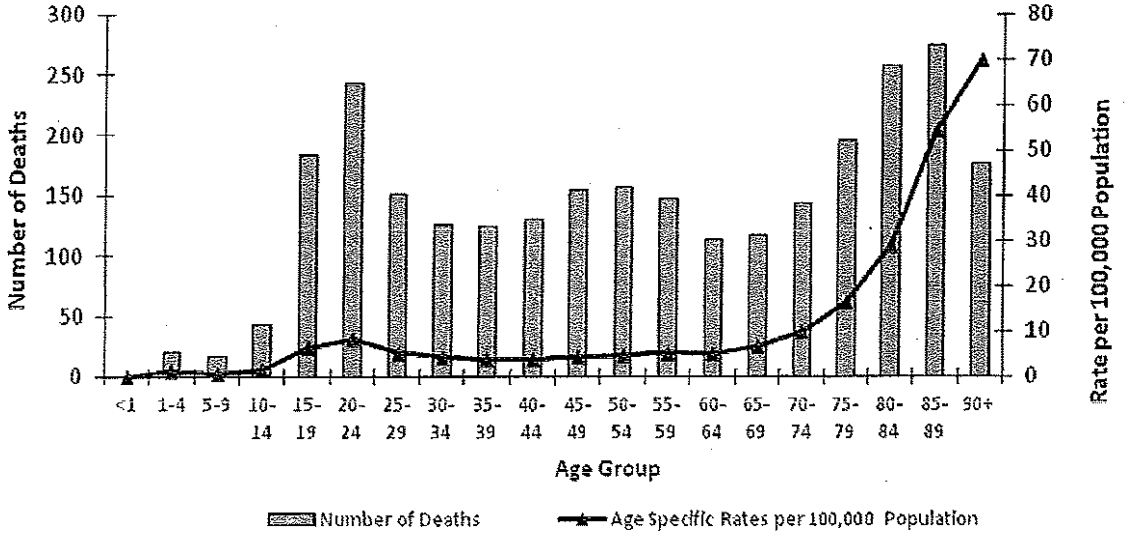
Figure 1: Number of head injury deaths by type, BC, 2001-2010



Although none of these deaths were documented to be the result of concussion, 49.4 percent were "other/unspecified head injury", followed by 42.5 percent "intracranial injury excluding concussion" (Figure 1).

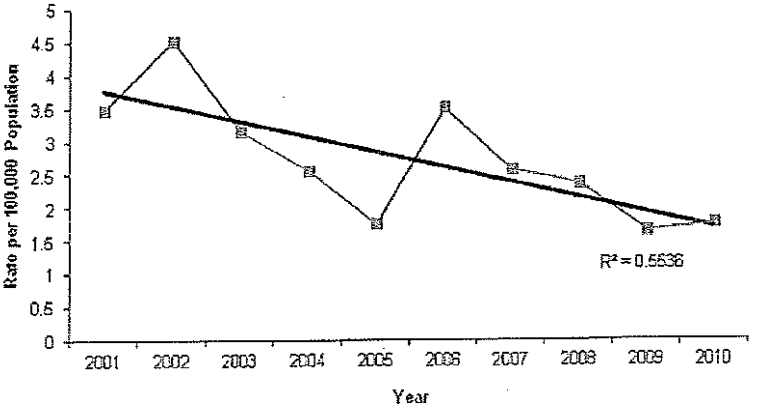
Age-specific head injury mortality rates were lowest among 5 to 9 year olds (0.74/100,000), and highest among older adults aged 90 years and over (70.14/100,000) (Figure 2). Among children and youth, rates increased to 6.53 per 100,000 among 15 to 19 year olds. In terms of numbers, the least burden of head injury mortality is seen among children, with the greatest burden among the elderly and among young adults ages 20 to 24 years.

Figure 2: Age-specific head injury mortality rate and cases by age group, BC, 2001-2010



Age-specific head injury mortality rates among children and youth ages 0 to 19 years were seen to decline significantly (p=0.014) from 2001 to 2010 (Figure 3). Rates within this age group peaked in 2002 at 4.53 per 100,000 and were lowest in 2009 at 1.64 per 100,000.

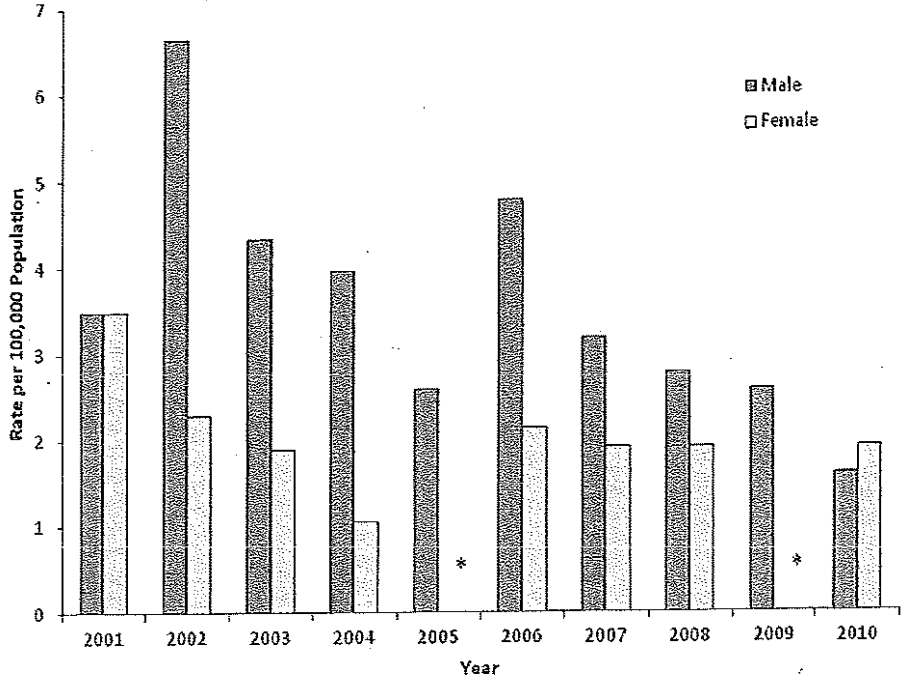
Figure 3: Age-specific head injury mortality rate, ages 0-19, by year, BC, 2001-2010



Rates were consistently higher among males within this age group from 2002 to 2009, with those in 2001 being the same between males and females. Rates peaked for males in 2002 at 6.64 per 100,000, and were lowest in 2010 at 1.60 per 100,000. Rates peaked for females 0 to 19 years of age in 2001 at 3.49 per 100,000 and were lowest in 2005 and 2009 when there were fewer than 5 cases of head injury mortality among females 0 to 19 years of age (Figure 4).

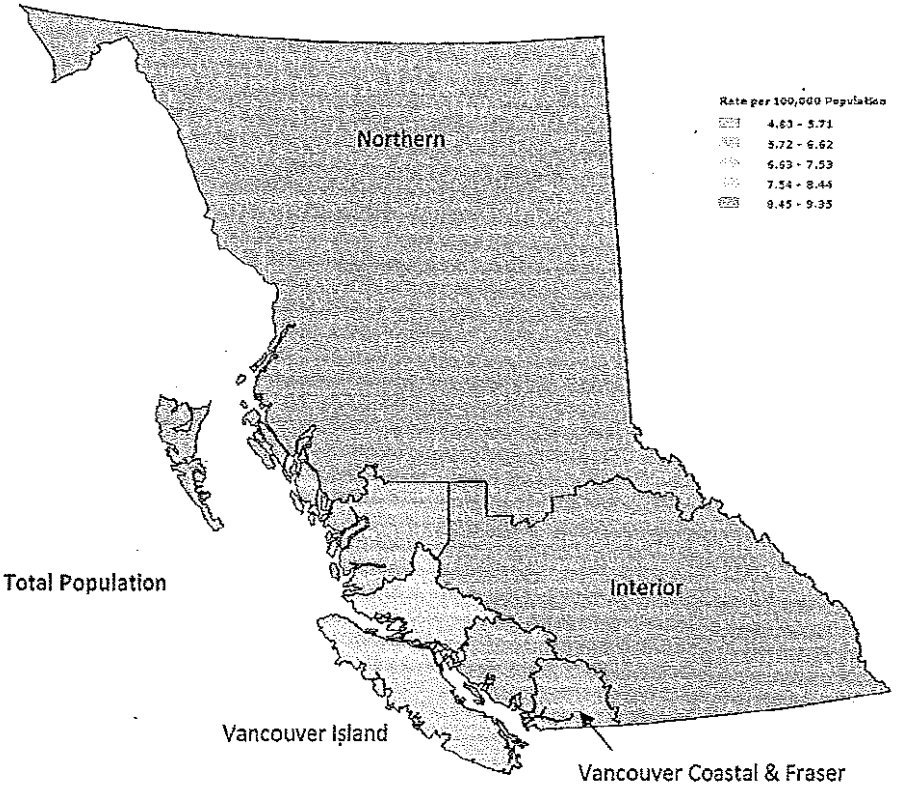
Crude head injury mortality rates for the total BC population indicate that rates are highest in Northern and Interior Health and lowest in Vancouver Coastal and Fraser Health (Figure 5). Among child and youth 0 to 19 years of age, Interior improves in ranking to having the second highest head injury mortality rates.

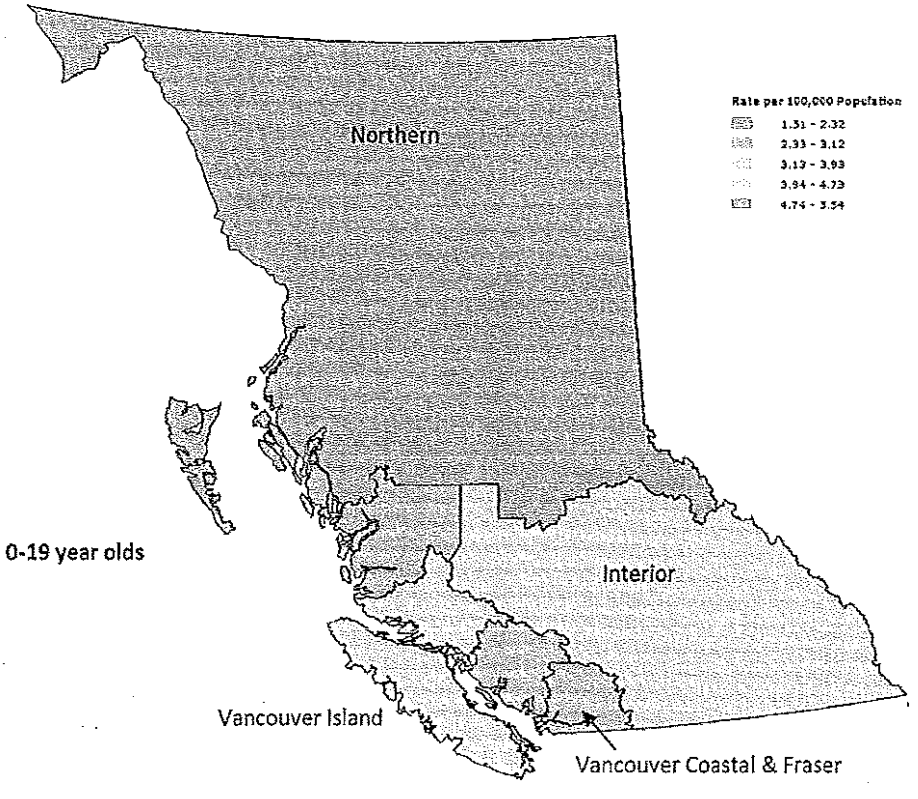
Figure 4: Age-specific head injury mortality rate, ages 0-19 years, by sex and year, BC, 2001-2010



*Note: * indicates less than 5 cases*

Figure 5: Map of crude head injury mortality rates for total population and age-specific rates for 0-19 year olds, BC, 2001-2010



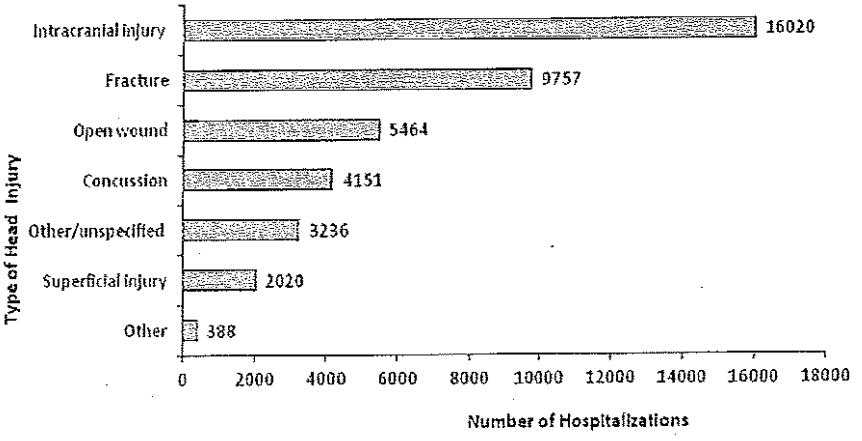


HOSPITALIZATION FOR CONCUSSIONS IN BC, 2001/02 - 2010/11

There were 42,766 hospitalizations resulting from head injuries in BC over the 10-year time period from 2001 to 2010. Males accounted for 64.1 percent (27,399) of these cases. Children and youth ages 1 to 19 years accounted for 22.2 percent (9,514) of all hospitalizations due to head injury.

Concussion accounted for 9.7 percent of all head injury hospitalizations (Figure 6). The leading cause was intracranial injury, which excludes concussion, at 37.5 percent.

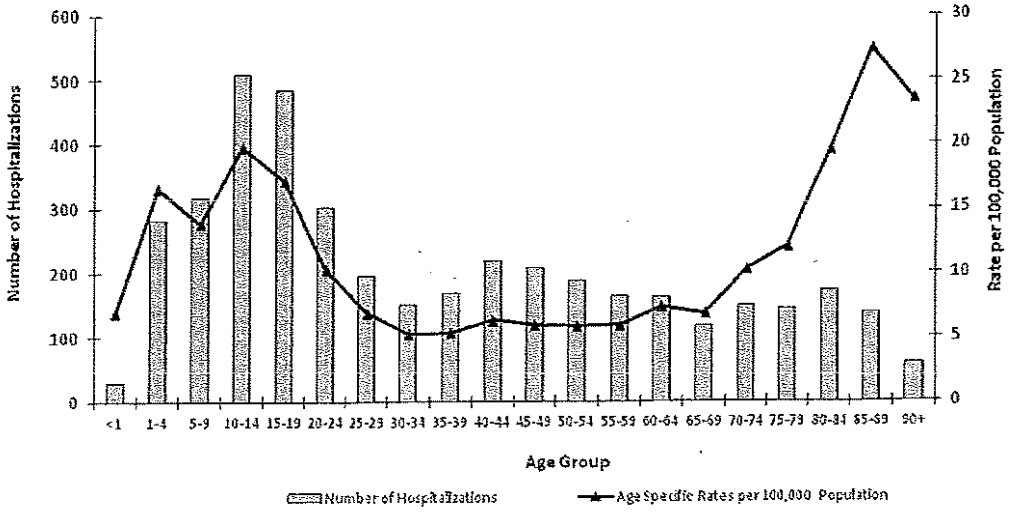
Figure 6: Number of head injury hospitalizations by type, BC, 2001/02 - 2010/2011



Age-specific concussion hospitalizations rates were lowest among 30 to 34 year olds (5.27/100,000), and highest among older adults aged 85 to 89 years and over (27.44/100,000) (Figure 7). Among children and youth, rates were highest among 10 to 14 year olds at 19.80 per 100,000, and second highest among teens 15 to 19 years of age at 17.14 per 100,000. Child and youth concussion hospitalization rates were lowest among infants less than one year of age at 6.93 per 100,000.

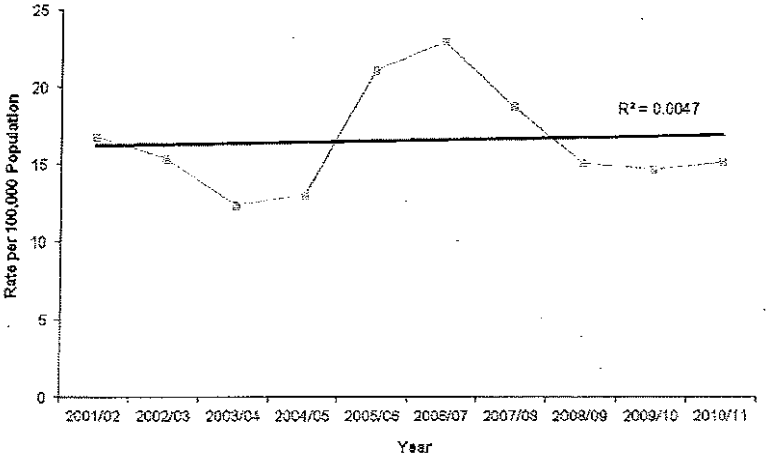
In terms of numbers, the least burden of concussion hospitalization is seen among infants less than one year of age and among the elderly ages 90 years and over. The greatest burden is seen to be among children and teens ages 10 to 19 years.

Figure 7: Age-specific concussion hospitalization rates and cases by age group, BC, 2001/02 - 2010/11



Concussion hospitalization rates among children and youth ages 0 to 19 years were seen to be variable from 2001/02 to 2010/11 (Figure 8). Rates peaked in 2006/07 at 22.99 per 100,000 and were lowest in 2003/04 at 12.40 per 100,000.

Figure 8: Age-specific concussion hospitalization rate, ages 0-19 years, by year, BC, 2001/02 - 2010/11



As with mortality head injury rates for children and youth ages 0 to 19 years, hospitalization concussion rates were consistently higher among males within this age group from 2001/02 to 2010/11.

Males within the child and youth age limits accounted for 69.2 per cent (1,121) of all concussions hospitalizations. Rates peaked for males in 2005/06 at 30.29 per 100,000, and were lowest in 2003/04 at 15.58 per 100,000. Rates peaked for females 0 to 19 years of age in 2006/07 at 15.81 per 100,000 and were lowest in 2010/11 at 7.89 per 100,000 (Figure 9).

Crude concussion hospitalization rates for the total BC population indicate that rates are highest in Northern Health and lowest in Vancouver Coastal and Fraser Health (Figure 5). Age-specific rates among children and youth 0 to 19 years mirrored the same rankings as the total population.

Figure 9: Age-specific concussion hospitalization rate, ages 0-19 years, by sex and year, BC, 2001/02 - 2010/11

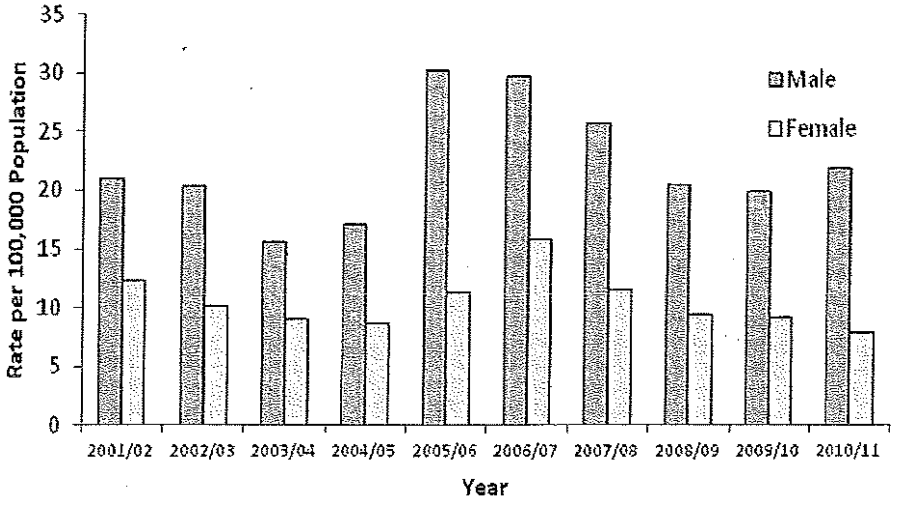
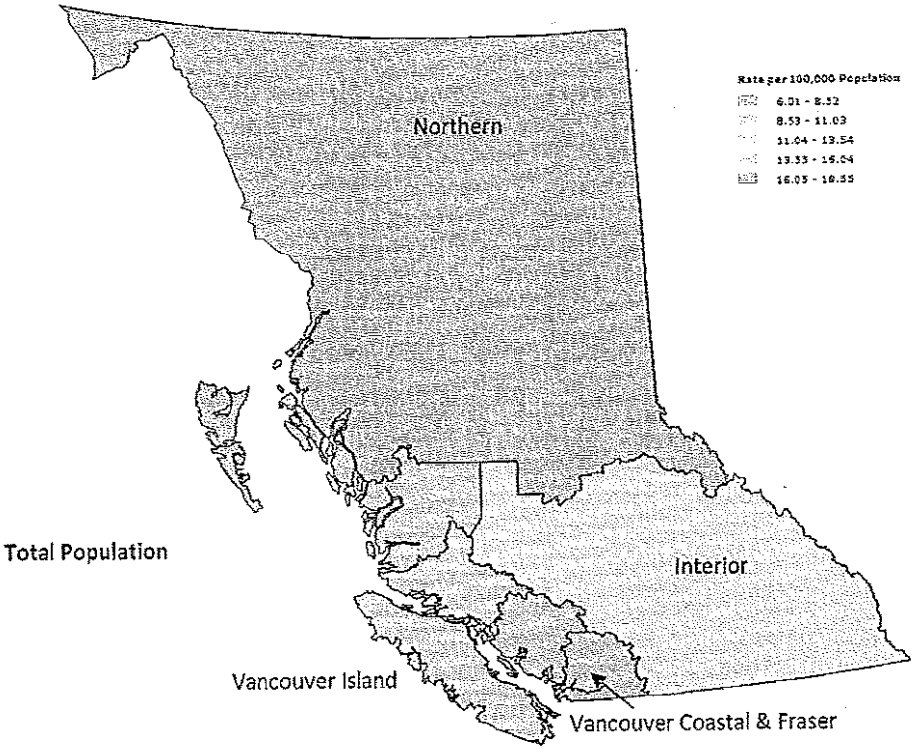
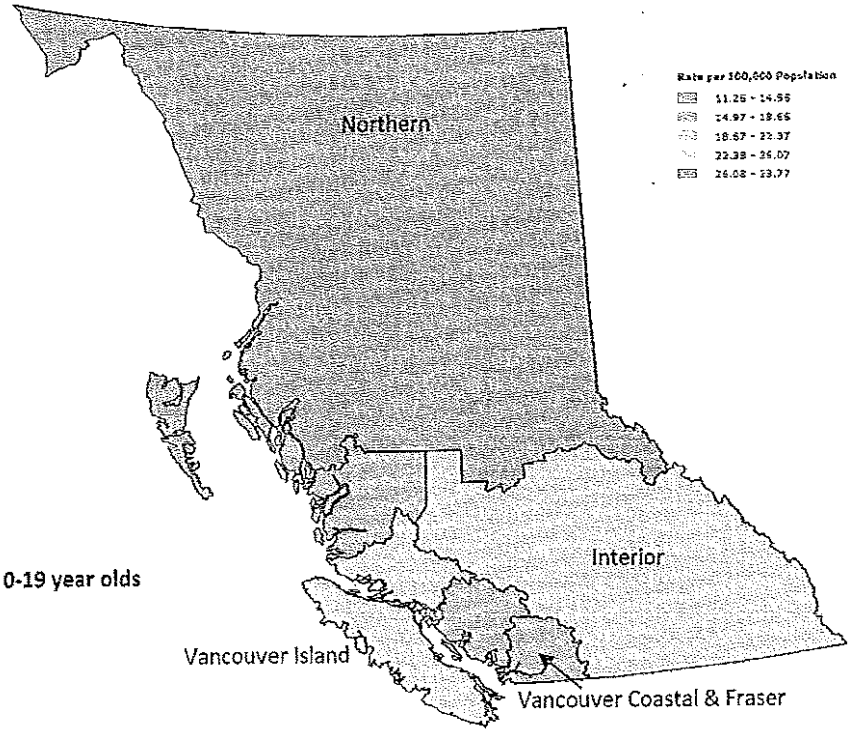


Figure 10: Map of crude concussion hospitalization rates for total population and age-specific rates for 0-19 year olds, BC, 2001/02 - 2010/11





EMERGENCY DEPARTMENT VISITS FOR CONCUSSIONS, 2011

There were 16,888 concussions seen in emergency departments throughout the BC Lower Mainland in 2011: 6,651 from VCH (2011); 8,959 from FH (2011/12); and a further 1,278 children and youth ages 0 to 19 years presenting to BCCH (2009). (See next section for a detailed look at the cases presenting to BCCH.)
Males accounted for 59.4 percent (10,035) of these total cases. Children and youth ages 1 to 19 years accounted for 39.5 percent (6,675) cases; and among children and youth alone, males account for 63.7 percent of cases (4,250).

Of the nine participating VCH hospitals, St. Paul's had the highest number of emergency department visits at 1,749, followed by Vancouver General (1,251) and Lion's Gate (1,090) (Figure 11). Of the 12 participating FH hospitals, Surrey Memorial had the highest number of emergency department visits at 1,540, followed by Burnaby (1,122) and Royal Columbian (1,037).

Age-specific concussion emergency department rates were highest among infants less than one year of age (1,930.58/100,000), followed by young children ages 1 to 4 years (1,714.99/100,000) (Figure 12). The smallest burden of concussion emergency department visits is among infants less than one year of age (537) and among older adults 70 to 79 years (673). The greatest burden is among young adults 20 to 29 years (2,934).

Figure 11: Number of concussion emergency department visits by attending hospital, VCH 2011 and FH 2011/12

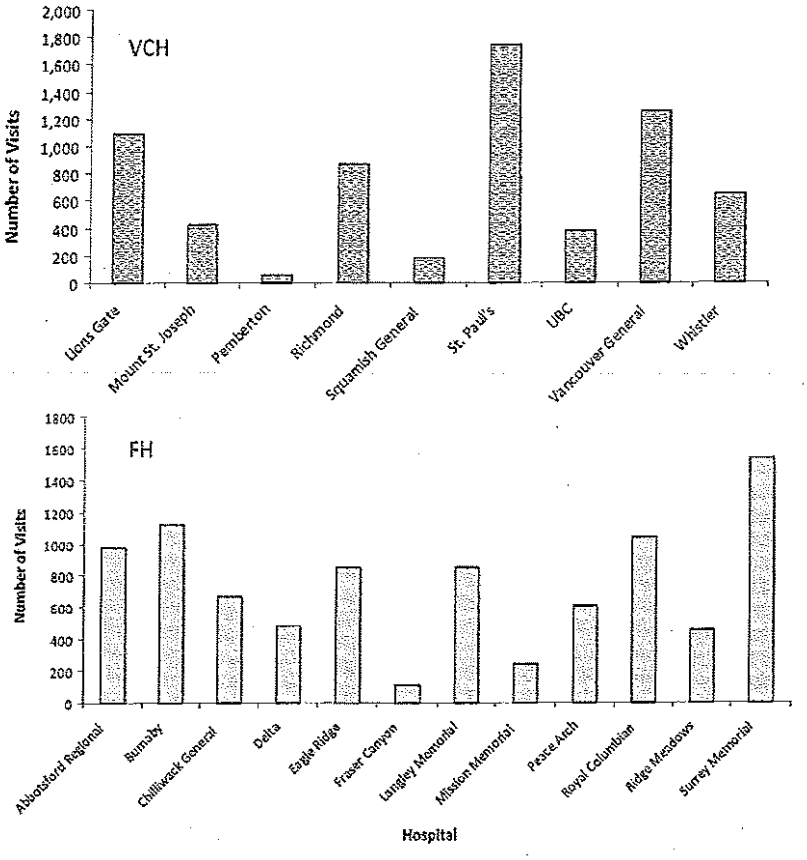
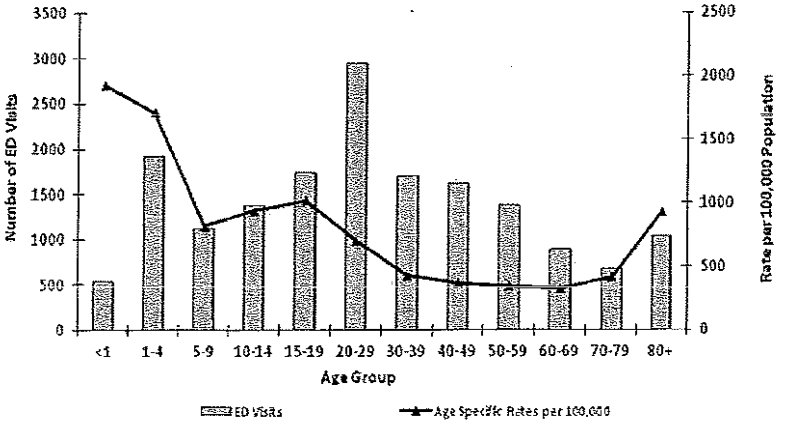


Figure 12: Age-specific concussion emergency department rates and cases by age group, BC Lower Mainland, 2011*
** VCH 2011; FH 2011/12; BCCH 2009*



Note: Age Group was missing for 6 cases

Figure 13: Number of concussion emergency department cases, VCH 2008-2011

No significant trends were found during the period 2008 to 2011 (Figure 13).

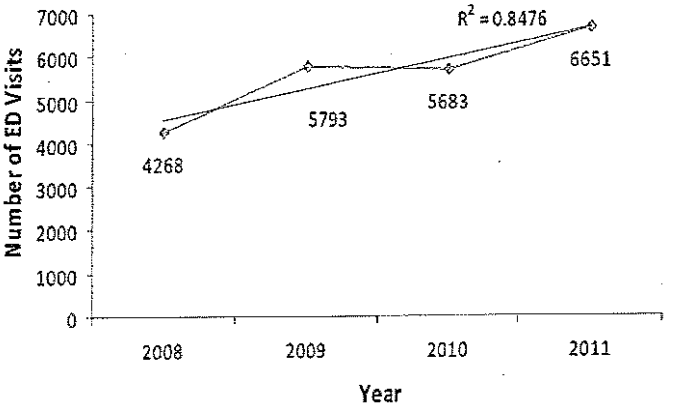


Figure 14: Age-specific child and youth concussion emergency department rates by sex, BC Lower Mainland, 2011*

** VCH 2011: FH 2011/12: BCCH 2009*

Among children and youth, concussion emergency department rates were highest among female infants less than one year of age (1,960.71/100,000) and young males ages 1 to 4 years (1,942.96/100,000) (Figure 14). Rates were lowest among females 10 to 14 years at 541.60 per 100,000.

The mechanism of concussion injury was available for 68.9 percent (10,761) of the total of emergency department cases for VCH and FH. (Please see next section for a detailed look at the cases presenting to BCCH.) The leading cause of concussion was falls, representing 32.5 percent of cases (5,072) in 2011, followed by sports and recreational activities at 15.5 percent (2,426) and struck by or against an object at 9.4 percent (1,474) (Figure 15).

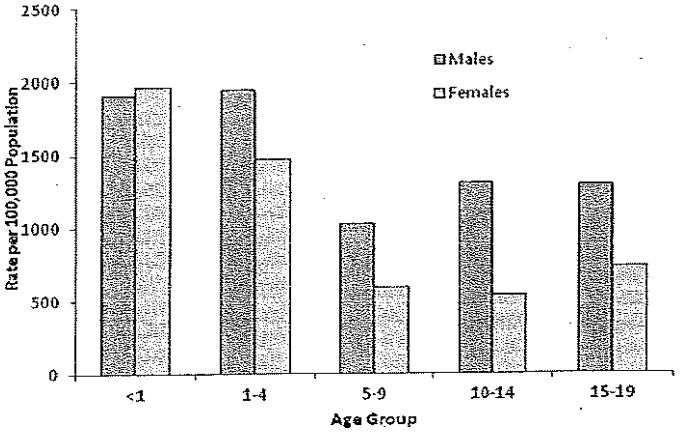
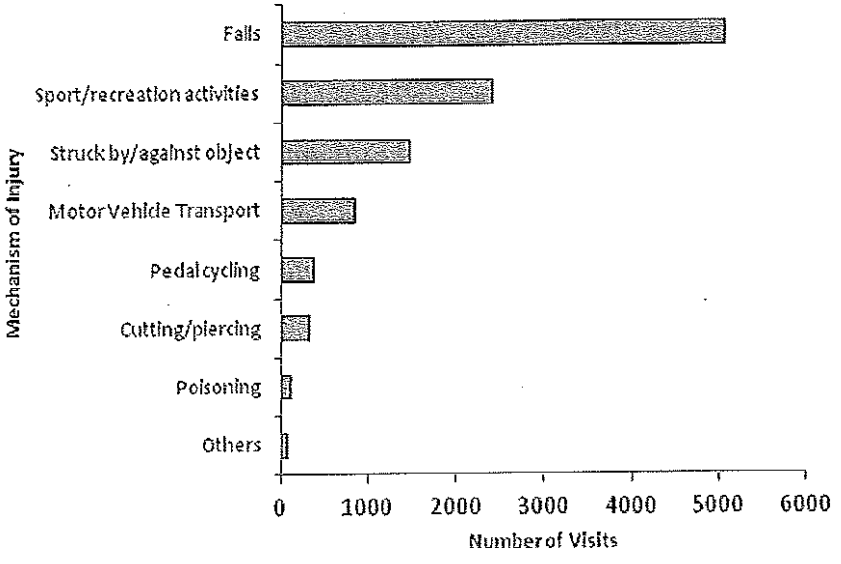


Figure 15: Number of concussion emergency department visits, by Mechanism of Injury, Lower Mainland, 2011* ** VCH 2011 and FH 2011/12*

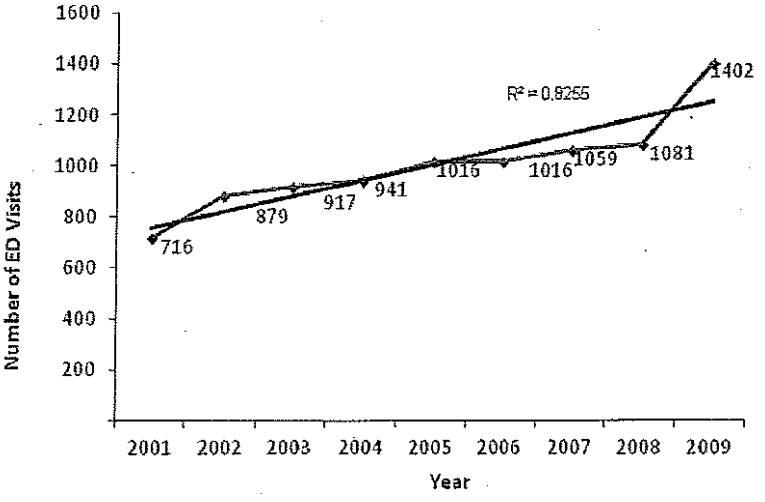


Note: Mechanism of Injury was missing for 4,849 cases

BC CHILDREN'S HOSPITAL EMERGENCY DEPARTMENT VISITS FOR CONCUSSION, 2001-2009

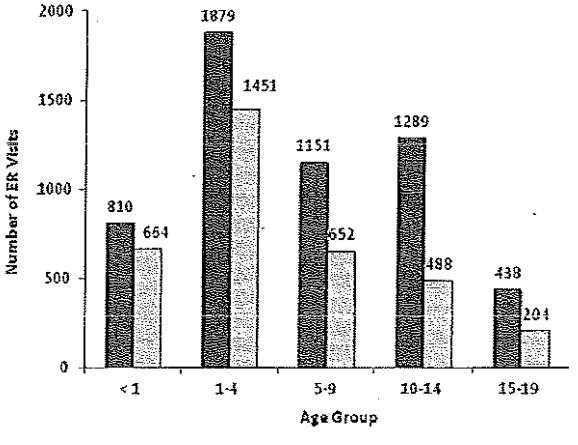
There were 9,027 children and youth ages 0 to 19 years presenting to BCCH with a concussion or minor head injury over the 9-year period from 2001 to 2009, as captured by the Canadian Hospital Injury Reporting and Prevention Program (CHIRPP). The annual number of presentations increased significantly (p= 0.001) from 716 in 2001 to 1,402 in 2009 (Figure 16).

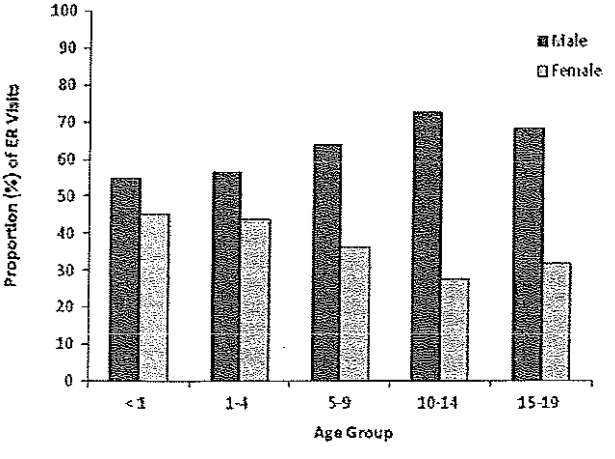
Figure 16: Number of concussion and minor head injury among children and youth 0-19 years by year, BC CHIRPP, 2001-2009



Young children ages 1 to 4 years accounted for 36.9 percent (3,330); 5 to 9 year olds accounted for 20.0 percent (1,803); and 10 to 14 year olds 19.7 percent (1,778) of all concussion and minor head injury cases presenting to BCCH (Figure 17). Males accounted for 61.7 percent (5,567) of all cases. The proportion of males was greatest at 72.5 percent among 10 to 15 year olds to 55.0 percent among infants less than one year of age.

Figure 17: Number and proportions of child and youth concussion and mild head injury by age group and sex, BC CHIRPP, 2001-2009



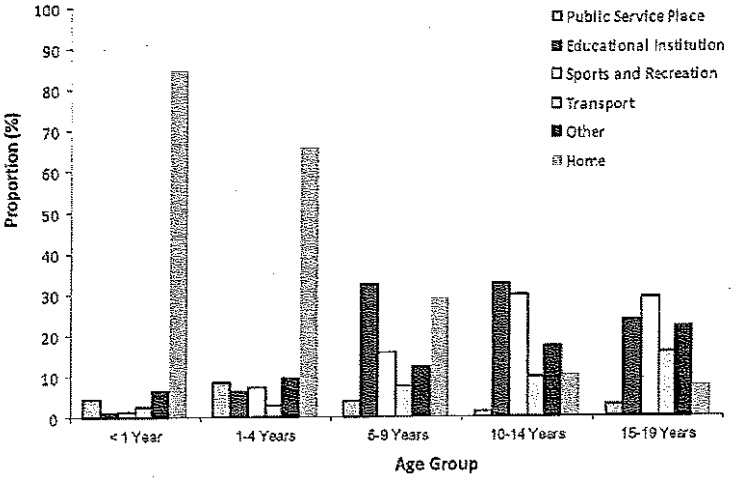


Note: Sex was missing for 1 case

Among infants less than one year of age, 84.3 percent of all concussions and minor head injuries occurred in the home setting (Figure 18). The proportion of concussions and minor head injury occurring at home decreased with age, being 65.3 percent among young children 1 to 4 years of age; 28.8 percent among 5 to 9 year olds; 10.1 percent among 10 to 14 year olds; and 7.5 percent among teens 15 to 19 years old.

These data show that concussion and minor head injury occurrences in educational institutions and places of sport and recreation increase with age.

Figure 18: Proportion of child and youth concussion and minor head injury by age group and location, BC CHIRPP, 2001-2009

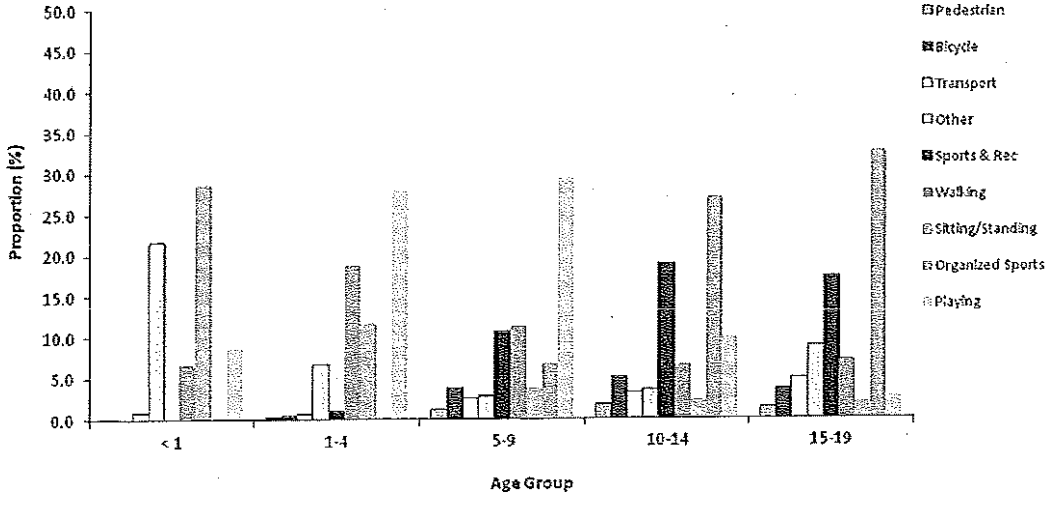


Note: Location was missing for 66 cases

The highest proportion of cases occurring at educational institutions (32.0%) and sport and recreation facilities (29.2%) were both among children 10 to 14 years old. The highest proportion of cases occurring in areas of transport (15.4%) was among teens 15 to 19 years of age.

Context in the CHIRPP data is defined as what the injured person was doing when the injury happened, for example participating in a sport, traveling in a vehicle or playing. Among infants less than one year of age, 28.7 percent of all concussions and minor head injuries occurred while sitting/standing, 8.7 percent while playing, and 6.7 percent while walking (Figure 19). Of those head injuries from sitting/standing, the majority were as a result of a fall (93%) or coded as "other incident" (7%). A further 21.6 percent were classified as "other", which includes being cared for or while sleeping or resting. The proportions of these injuries occurring while the child was playing were highest for 1 to 4 year olds (28.0%) and 5 to 9 year olds (29.5%). The highest proportions for organized sports were among 15 to 19 year olds (32.6%) and 10 to 14 year olds (27.1%). Other sport and recreation activities were more common among 10 to 14 year olds (19.0%) and 15 to 19 year olds (17.3%).

Figure 19: Proportion of child and youth concussion and minor head injury by age group and context, BC CHIRPP, 2001-2009



Note: Context was missing for 2,527 cases

Table 1 provides context and location for children and youth ages 0 to 19 years sustaining concussion and mild head injury. Highest numbers of injuries were sustained in the home while playing (980) walking (655) and sitting (586). Playing accounted for 386 concussions and mild head injuries occurring in educational institutions and 207 occurring at sports and recreation locations. Organized sports accounted for 418 concussions and mild head injuries occurring in sport and recreation locations and 247occurring in educational institutions. Sport and recreation activities accounted for 250 injuries occurring in sport and recreation locations and 196 occurring in educational institutions.

Table 1: Number of child and youth concussion and minor head injury by context and location, 0-19 years of age, BC CHIRPP, 2001-2009

	CONTEXT								
LOCATION	Pedestrian	Bicycle	Transport	Other	Sports & Recreation	Walking	Sitting	Organized Sports	Playing
Public Service Place	0	*	*	52	*	75	135	0	42
Educational Institution	0	15	*	63	196	171	68	247	386
Sports and Recreation	0	40	7	13	250	51	28	418	207
Transport	64	70	110	14	33	45	25	0	14
Other	10	39	45	56	132	91	82	155	147
Home	*	27	5	511	71	655	586	*	980

*Note: * indicates less than 5 cases. There were 2,584 missing cases for context and location.*

Multiple types of safety devices were used in different contexts. Figure 20 shows at least one type of safety equipment use at the time of concussion or mild head injury by context. Use of a safety device was more prevalent during organized sports (54.5%), transportation (52.9%) and bicycle riding (45.3%) (Figure 20).

Concussions and mild head injuries sustained while engaging in sports activities, either organized sports or other sports and recreation, demonstrate a variation in helmet use. Injuries sustained while playing ice hockey had the highest proportion of helmet use (84.3%) among concussion and mild head injury cases, followed by horseback riding (76.5%) and lacrosse (76.2%) (Figure 21). The sport with the lowest proportion of helmet use was baseball (14%).

Note: Safety device information was only available for 2,591 cases.

Figure 20: Proportion of child and youth concussion and mild head injury by context and use of a safety device, ages 0-19 years, BC CHIRPP, 2001-2009

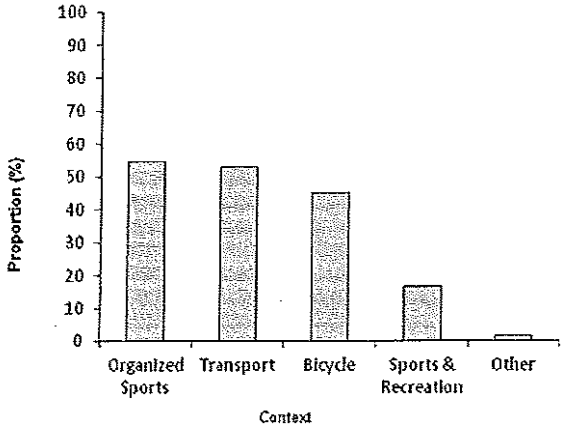
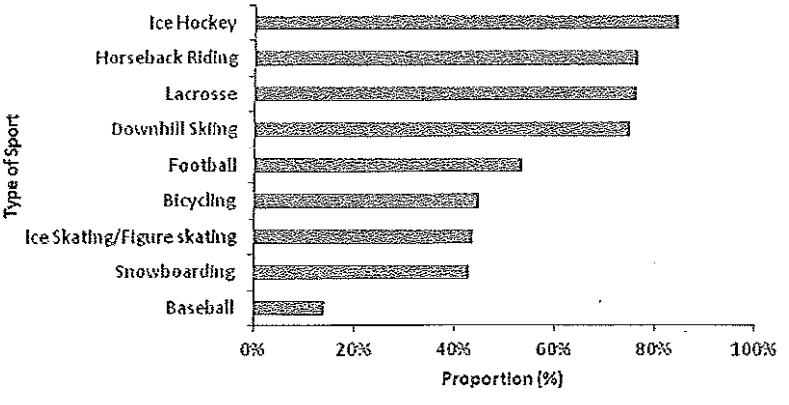


Figure 21: Proportion of child and youth concussion and mild head injury by Type of Sport and Helmet Use, ages 0-19 years, BC CHIRPP, 2001-2009



METHODOLOGY

DATA SOURCES

The five datasets used for this report were:

- BC Vital Statistics
- Discharge Abstract Database
- Vancouver Coastal Health (VCH), Public Health Surveillance Unit, Emergency Department Data
- Fraser Health (FH) Emergency Department Data
- BC Children's Hospital Emergency Department data from the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP)

Mortality: Mortality data were provided by the BC Vital Statistics Agency. This report is based on 2,781 head injury deaths from 2001 to 2010 among known residents of BC. The mortality dataset includes external causes of death classified as injury deaths according to the International Classification of Diseases (ICD-10) [9]. Head injury cases were extracted using ICD-10 codes S00-S09.

Hospital Separations: Source data were obtained from the Discharge Abstract Database, BC Ministry of Health Services. This report is based on 42,766 head injury hospitalizations during the fiscal years 2001/02 to 2010/11 among known residents of BC. Data for this study include external causes of injury classified according to ICD-10. Causes of injury categories were derived according to the same coding scheme as used for mortality data. In addition to head injury hospitalizations, concussion-related hospitalizations were also extracted separately using ICD-10 code S06.

Vancouver Coastal Health: Emergency department visit data for the years 2008 to 2011 were obtained from nine of thirteen acute care hospitals: CareCast System (Richmond Hospital, UBC Hospital, Vancouver General Hospital), Eclipsys System (Mount Saint Joseph Hospital, St. Paul's Hospital) and McKesson System (Lions Gate Hospital, Pemberton Health Centre, Squamish General Hospital, Whistler Health Care Centre). Concussion data were extracted through ICD9 code 800-804, 850-854, 907.0 and 959.01 and keywords "concussion" or "head injury" where indicated in presenting complaints or discharge diagnoses..

Fraser Health: Data for the fiscal year 2011/12 were obtained for head injuries from decision support services in Fraser Health. The twelve participating hospitals included: Abbotsford Regional, Burnaby, Chilliwack General, Delta, Eagle Ridge, Fraser Canyon, Langley Memorial, Mission Memorial, Peace Arch, Royal Columbian, Ridge Meadows, and Surrey Memorial. The raw data included information by facility. Head injury information was captured using the patient chief and stated complaints, as well as description. The patient chief and stated complaint fields did not capture concussions and therefore the data required some cleaning and coding so that concussion information could be captured using both the complaint fields as well as the description field.

BC CHIRPP: Data were extracted from the emergency department of BC Children's Hospital (BCCH) for the period 2001-2009. This report is based on 9,028 injuries captured by BC CHIRPP. This surveillance system collects in-depth information regarding the patient's age and sex; the activity when injured, cause of injury, and factors contributing to the injury; the nature of injury, body area affected by the injury and the outcome of the emergency department visit.

Analysis

Mortality and hospitalization rates were calculated per 100,000 population for age, sex, year, leading cause of injury and Health Authority. Age-specific and crude rates are used throughout the report in order to describe actual burden rather than comparative rates across time and regions (where age-standardized rates would normally be used).

The age-specific rates were calculated by dividing the number of cases in each age group by the population of that specific age group.

As CHIRPP data are not population based, rates can not be calculated based on this database alone. In order to calculate rates, the CHIRPP data for 2009 was extracted by postal code and matched to its corresponding health authority. Cases for the Lower Mainland were then identified. Emergency department visit rates for Lower Mainland were calculated using the total number of cases from CHIRPP 2009 Lower Mainland data for ages 0-19,

2011 VCH data and 2011/12 FHA data. The 2009 CHIRPP data was used as an estimate for the most recent year. Lower Mainland population data for ages 0-19 years was calculated using the average FHA and VCHA population for 2009 and 2011. The remaining age-specific rates were calculated using 2011 population. Population data were obtained from BC Vital Statistics Agency.

Trend analyses were conducted using a linear regression model to test the statistical significance of the association between injuries over time. This test appraises the linear component of the relationship between injury rates and scores allocated to the categories of time (calendar years).

The in-depth analysis of BC CHIRPP data allowed for the examination of several variables describing the pre-injury, injury and post-injury phases [10]. Specifically, patterns of injury among males and females were described by time (year, month, day of the week, and time of day), location of injury (where the injury occurred), activity and nature of injury. This provides additional information that is not captured in the mortality, hospitalization or other emergency department datasets.

Data Limitations

Concussion as a health event is recognized to be under reported and inconsistently coded. Concussion may also be labels a mild traumatic brain injury (mTBI), or sometimes as a head injury (which may include other injuries not involving the brain).

Complete accuracy and consistency of mortality data cannot be assumed because physicians and other health professionals responsible for diagnosing and coding the cause of death differ in their skills and practices. Some variation in death certification and coding practices may exist. None of the mortality head injury cases were coded as concussion; however 49.4 percent were "other/ unspecified head injury".

Hospitalization data can vary over time and between areas for factors not related to health, such as accessibility of treatment, and medical and administrative decisions that may affect the number of hospitalizations and lengths of hospital stay [11, 12].

The CHIRPP emergency department data are not representative of all regions of BC. BC Children's Hospital (BCCH) is the only BC hospital participating in CHIRPP, capturing children from across the Lower Mainland as well as higher severity cases from across BC. As such, this is not considered to be stand-alone population-based data; data are presented as frequencies and proportions only. It is also important to note that CHIRPP forms may not be completed for all injuries seen in the emergency department as it may not be the parent's nor physician's priority at the time of admittance. As a result, there may be missing data for certain variables and cases.

When combining emergency department data from VCH, FH and BCCH, the data are reported as 2011 in order to obtain rates for the lower mainland. For VCH, this represents the 2011 calendar year. For FH this represents the fiscal 2011/12 year. However, for BCCH, the most recent data available are for 2009. These data (i.e. BCCH) have been used as a proxy for the 2011 numbers when added to the VCH and FH emergency department data.

Although external causes of injury are uniformly classified and analyzed according to the ICD-10 for both mortality and hospitalization data, CHIRPP data are not coded using this system. Further, VCH data were coded using ICD-9, while FH data were pulled based on text. Therefore the emergency department data presented are the best representation of concussion available at this time.

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[3] CBC News. Kelly Crow. Q&A Concussion: Q&A with Dr. Charles Tator. Posted Feb 22, 2011

[4] Guskiewicz KM, Weaver NL, Padua DA, Garrett WE Jr. Epidemiology of concussion in collegiate and high school football players. Am J Sports Med 2000;28(5):643-50

[5] Ackery A, Provvidenza C, Tator C. Concussion in hockey: compliance with return to play advice and follow-up status. Can J Neurol Sci 2009; 36:207-12.

[6] Echlin P. Concussion education, identification, and treatment within a prospective study of physician-observed junior ice hockey concussions: social context of this scientific intervention. Neurosurg Focus 2010; 29 (5):E7. 1-13

[7] Zygun DA, Laupland KB, Hader WJ Kortbeek JB, Findlay C, Doig CJ, Hameed SM. Severe traumatic brain injury in a large Canadian health region. Can J Neurol Sci, 2005;32:87-92.

[8] Guskiewicz KM & Valovich McLeod TC. Pediatric sports-related concussion. Am Acad Phys Med Rehab 2011;3:353-364.

[9] World Health Organization. Manual of the International Statistical Classification of Diseases. Tenth Revision), Vol 1. Geneva: World Health Organization, 2005.

[10] Haddon W Jr. Advances in the epidemiology of injuries as a basis for public health policy. Public Health Reports 1980;95:411-21.

[11] Walsh SS & Jarvis SN. Measuring the frequency of "severe" accidental injury in childhood. J Epi Com Health 1992;46:26-32.

[12] Chevalier S, Choiniere, R, Ferland, M, Pageau, M, & Sauvageau, Y. Community Health Indicators: Definitions and Interpretations. Ottawa: Canadian Institute for Health Information, 1995.

2011 Legislative Session: 4th Session, 39th Parliament
FIRST READING

DR. MOIRA STILWELL

BILL M 206 — 2011
CONCUSSIONS IN YOUTH SPORT SAFETY ACT

Explanatory Note

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:

1 In this Act:

"Health Care Professional" means a person licensed to provide health care under one of the following Acts:

(a) a person registered as a member of a college established or continued under the *Health Professions Act*, or

(b) a member of another organization that is designated by regulation of the Lieutenant Governor in Council.

"high risk sport" means a sport in which participants may be subjected to concussion as designated by regulation.

"youth athlete" means a person under the age of 19 who participates in a high risk sport.

"youth sports organization" means an organization providing a high risk sport program participated in by youth athletes.

2 Youth sports organizations must develop and adopt guidelines and other pertinent information and forms to inform and educate coaches, youth athletes, and their parents and/or guardians of the nature and risk of concussion and head injury including continuing to play after concussion or head injury.

3 On a yearly basis, a concussion and head injury information sheet must be signed and returned by a youth athlete and the athlete's parent and/or guardian prior to the youth athlete's initiating practice or competition in a high risk sport.

4 A youth athlete who is suspected of sustaining a concussion or head injury in a practice or game shall be removed from competition at that time.

5 A youth athlete who has been removed from play may not return to play until the athlete is evaluated by a licensed health care professional trained in the evaluation and management of concussion and receives clearance to return to play from that health care professional. The health care professional may be a volunteer. A volunteer who authorizes a youth athlete to return to play is not liable for civil damages resulting from any act or omission in the rendering of such care, other than acts or omissions constituting gross negligence or willful or wanton misconduct.

6 This Act comes into force by regulation of the Lieutenant Governor in Council.

Explanatory Note

The most common brain injury is a concussion. Most concussions occur without loss of consciousness and often are overlooked, with potentially serious consequence. Young athletes are particularly susceptible to concussions; in fact, according to the Canadian Paediatric Society, the majority of sport-related head injuries occur in individuals younger than 20 years old. Young athletes, their parents and coaches need to be aware of the risks that a second concussion can have if a previous concussion has yet to heal, and not feel pressured to hide their injuries or return to

play prematurely. An impact delivered to the head of an athlete who has not yet fully recovered from an initial concussion can be devastating.

This Bill recognizes the importance of three criteria in protecting young brains: removing a child or youth athlete from play if a concussion is suspected; ensuring the child or youth does not return to play until he or she has received medical clearance; and, providing education on sport-related concussions to athletes, coaches and parents.

Pages 27 through 31 redacted for the following reasons:
- -
s. 14

From: Kronick, Ilana HLTH:EX
Sent: Thursday, September 20, 2012 9:07 AM
To: Docs Processing HLTH:EX
Cc: Cowan, Darynn HLTH:EX; Gamble, Christine HLTH:EX
Subject: FW: RUSH BN re: Stillwell meeting/concussion bill sched. Sept 26, due Thurs. Sept. 20 (CLIFF 943999/DPU Log #33)
Attachments: 943999 - Concussion Prevention and Management Update with track.docx; 943999 - Appendix A - Bill M 206 - Concussion in Youth Sport Safety Act.pdf; 943999 - Appendix B - Bill M 206 - Legal counsel.pdf; Concussion in BC Report FINAL Sept _7_2012.pdf

Categories: Purple Category

Hi there,
Arlene approved the attached information. Please note staff have also attached a report: the recently developed Burden of Concussion in BC Report. This has been produced by our BC Injury Research and Prevention Unit with additional funding provided by ChildHealth BC.

Please attach to the routing of the concussion BN as additional contextual information.

Thanks,
Ilana

From: Docs Processing HLTH:EX
Sent: Tuesday, September 18, 2012 9:48 AM
To: Kronick, Ilana HLTH:EX
Cc: Cowan, Darynn HLTH:EX; Gamble, Christine HLTH:EX; Docs Processing HLTH:EX
Subject: RUSH BN re: Stillwell meeting/concussion bill sched. Sept 26, due Thurs. Sept. 20 (CLIFF 943999/DPU Log #33)

Hi Ilana,

The MO is seeking a rush BN re: Minister MacDiarmid's Sept 26 meeting (1:30-2:00) with Minister Stilwell to discuss a bill pertaining to concussions. We are hoping to get this information by Thursday, September 20th. A folder will be ready for pick-up shortly.

Thank you,
Robin Pascoe
Documents Processing
Ministry of Health
Phone: (250) 952-2636
Email: robin.pascoe@gov.bc.ca

From: Normand, Nicole HLTH:EX
Sent: Tuesday, September 18, 2012 9:01 AM
To: Docs Processing HLTH:EX
Cc: Casanova, Tamara HLTH:EX
Subject: BN Request: Meeting with Minister Stillwell

Good morning,

Minister MacDiarmid is meeting with Minister Stillwell on Sep 26, 1:30-2:00pm regarding a bill pertaining to concussions.

Please have a brief backgrounder/BN prepared. DUE in MO Sep 24.

Please let me know if you have any questions.

Thank you.

Nicole Normand, Administrative Coordinator
Office of the Honourable Margaret MacDiarmid
Minister of Health
Phone: (250) 387-1243
Email: Nicole.Normand@gov.bc.ca

Codner, Tamara A HLTH:EX

From: Todoruk, Kyle HLTH:EX
Sent: Friday, September 7, 2012 2:43 PM
To: Herman, Matt HLTH:EX
Subject: Concussion Prevention and Management - Draft Issues Note
Attachments: Concussion Prevention and Management Issues Note - Sept 7 2012.docx

Matt,

Please find the concussion prevention and management issues note attached for your review.

I will notify the sport branch that we are proceeding this way and that we will provide them with a copy once approved.

Thanks again,

Kyle

Kyle Todoruk
Chronic Disease/Injury Prevention & Built Environment Branch | Population & Public Health Division | Ministry of Health | Victoria | (250) 952-2486 | Kyle.Todoruk@gov.bc.ca | http://www.health.gov.bc.ca/prevention/

MINISTRY OF HEALTH
INFORMATION BRIEFING NOTE

Cliff # 942867

PREPARED FOR: Honourable Dr. Margaret MacDiarmid, Minister of Health
– FOR INFORMATION

TITLE: Viral Hepatitis Update

PURPOSE: To inform on the current state of viral hepatitis after the release of the *Healthy Pathways Forward* Progress Report - May 2007-2010.

BACKGROUND:
Viral hepatitis remains a serious health issue in British Columbia. Over 60,000 British Columbians suffer from chronic hepatitis B (hep B) and hepatitis C virus (hep C) infections respectively; without intervention, approximately 15 - 30 percent of these individuals will require a liver transplant, or develop cirrhosis, liver cancer or end-stage liver disease in the next 40 years.[1] In BC, viral hepatitis-related end-stage liver disease is associated with approximately 100 deaths and $100 million in medical costs per year.

The Ministry of Health's (the Ministry) policy framework, *Healthy Pathways Forward: A Strategic Integrated Approach to Viral Hepatitis in BC*, released in 2007, detailed a formal commitment to report on progress towards the framework's four goals:

1. Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease;
2. Enhance program reach and engagement of vulnerable populations in the health, promotion, prevention, care, treatment and support service continuum;
3. Strengthen the system's capacity to respond; and
4. Create seamless service delivery.

Ministry staff collaborated with the BC Centre for Disease Control (BCCDC) and, in December 2011, released a first report summarizing BC's progress between 2007 and 2010 (attached). Since 2007, hepatitis A (hep A), hep B and hep C rates in BC have declined; testing for hep C has increased; and three new drug therapies to prevent those with hep B from progressing to serious liver disease have been added to the PharmaCare formulary. System improvements have focused on increasing capacity through health care provider education; improving surveillance and program evaluation; and increasing the number of sites distributing and recovering safer sex/drug use supplies.

[1] British Columbia Medical Association. (2005, May 1). *Viral Hepatitis Testing.* Retrieved July 11, 2011, from Clinical Practice Guidelines and Protocols in British Columbia: http://www.bcguidelines.ca/pdf/vihep.pdf

DISCUSSION:
Despite these successes, key challenges remain. Linkage of administrative data to inform publicly-funded drug coverage decisions for new viral hepatitis medications remains to be established. Reducing over-reliance on acute/specialist services will require increases in community-based prevention and care capacity, especially for those who use injection drugs, and new immigrants arriving from hep B and hep C endemic countries.

Further enhancement in the safety, tolerability, duration and efficacy of hep C therapy will see curability rates likely exceeding 90 percent in the next 3 to 5 years. The Ministry was approached in early 2012 by Dr. Julio Montaner at the BC Centre for Excellence in HIV/AIDS (BCCfE) and Dr. Mel Krajden at the BCCDC to highlight the current burden of viral hepatitis and the policy opportunities that recent medical advancements provide. In essence, medical advancements create an opportunity for government to revamp its approach to viral hepatitis and make system changes similar to what is occurring through the STOP HIV pilot in order to rapidly curb the burden of viral hepatitis. In May 2012, the Population and Public Health (PPH) Assistant Deputy Minister (ADM) requested a joint background paper from the BCCfE and the BCCDC identifying:

- a description and analysis of the major policy problems and critical clinical issues that must be addressed;
- a description of the proposed approach to deal with the identified problems and issues, including roles and responsibilitiesof key stakeholders;
- a high level business case and budget, and potential implementation timelines for options identified; and
- a description of the benefits and risks associated with identified options.

A preliminary submission from the BCCfE and the BCCDC was received on August 18, 2012, responding to the points outlined above. The submission proposes the creation of a virtual Centre for Excellence in Viral Hepatitis (attached). Having assessed the proposal, Ministry staff are requesting additional information from Drs. Montaner and Krajden regarding:

- how the proposed Centre for Excellence could be governed;
- how the Centre would collaborate with regional health authorities, other prominent medical leaders and community organizations;
- what the anticipated costs to operationalize key aspects of the proposal such as a viral hepatitis drug treatment program would be; and
- identification of health care costs that could be contained or averted through the proposed approach.

SUMMARY:
Viral hepatitis remains a serious health issue for BC with a large number of people living with hep B and/or hep C. Improving drug treatments present an opportunity to initiate a more robust provincial response to viral hepatitis similar to what is occurring with HIV. The BCCfE and BCCDC suggest a virtual Centre for Viral Hepatitis would be the best way to lead a renewed response in BC. Ministry staff are gathering further information required to support a government decision on this approach.

Program ADM/Division:	Arlene Paton, ADM, Population and Public Health Division
Telephone:	250 952-1731
Program Contact (for content):	Warren O'Briain, Executive Director, Communicable Disease Prevention, Harm Reduction and Mental Health Promotion
Drafter:	Haley Miller/Gina McGowan/Ciro Panessa
Date:	September 14, 2012
File Name with Path:	R:\CDAP\CDAP\A1 Admin\Executive 280\20 BNs\20 BBP\BBP 2012\942867 - PO Request for Info on Hepatitis in BC\942867 - Update on viral hep in BC.docx

BC CENTRE FOR EXCELLENCE in VIRAL HEPATITIS
HIGH LEVEL BUSINESS CASE
Prepared by Mel Krajden and Julio Montaner
August 18th, 2012

EXECUTIVE SUMMARY

BACKGROUND

Approximately 3% of British Columbians are chronically infected with hepatitis B (HBV) and C (HCV) (1.5% prevalence for each virus). Hepatitis B (HBV) is vaccine-preventable and because of BC's extensive HBV vaccination programs new local infections in BC are now rare. Immigrants are at highest risk of being chronically infected, as they typically acquire their infection in their high-risk endemic country of origin (i.e.: Asia, SouthEast Asia). Hepatitis C (HCV) is quite different because there is no effective HCV vaccine. HCV infections most frequently relate to injection drug use, and less frequently to remote exposure to unscreened blood products, exposure to unsafe needle practices in high-risk endemic regions, and high-risk sexual practices. New HCV infections in BC are declining because of the adoption of harm reduction strategies and less frequent use of injection drugs. However, it is estimated that approximately 66% of individuals who are now HCV infected were born between 1945 to 1965 (baby boomers) and this population is aging. In contrast, most of those HBV infected acquired their infection at birth prior to coming to British Columbia.

Hepatitis B and/or C infections are typically silent for decades but over time 15% to 25% of those infected will develop cirrhosis, end-stage liver disease, and liver cancer and some will require a liver transplant. HIV co-infected individuals represent an exceptional case as they typically have accelerated progression of their viral hepatitis, and this in turn represents a challenge for the control of their HIV infection. As a result, medical treatment guidelines recommend that dually infected individuals be treated for both conditions earlier than mono-infected individuals. Overall, the affected populations are aging and at increased risk of disease progression to cirrhosis and other serious complications, as well as at increased risk of premature disability and death. All of these lead to increased pressure on health services and hospitalizations and related costs. The risk of disease progression increases with alcohol use, obesity, HIV co-infection, age and male gender, which are highly prevalent in the affected populations.

Hepatitis B can be effectively treated with antiviral medications which are generally the same as those used to treat HIV infection. Again, similar to the case for HIV disease, HBV treatment is not curative but rather suppressive, and therefore needs to be taken on a long-term basis. HBV therapy reduces the risk of progressive liver disease, prevents liver cancer and can markedly reverse liver damage, thereby improving the health of individuals and decreasing costs to the health care system.

In contrast, HCV infection can be cured. However, until recently HCV treatment was generally poorly tolerated. New drugs are rapidly emerging with improved safety and tolerability profiles. It is expected that the spectrum of HCV therapies will continue to expand in the next 3-5 years, with further enhancement in the safety, tolerability and duration of therapy, with concomitant improvement in outcomes, with curability rates likely exceeding 90%.

The populations most frequently affected by HBV and HCV are vulnerable, suffer from health inequities and significant stigma, as a result they are subject to diverse social, political, and economic influences that adversely impact their ability to be diagnosed and to access care. For HCV, most cases are related to current or remote injection drug use. Immigrants, individuals who have been incarcerated and Aboriginal people are also disproportionately affected. For HBV, most chronic infections occur in immigrants, most of whom live in the Lower Mainland. Evidence shows that diagnosis, engagement into care and treatment is associated with improved health outcomes, and reduced overall health system costs.

HIGH LEVEL BUSINESS CASE FOR THE BC CENTRE FOR EXCELLENCE IN VIRAL HEPATITIS

Description and analysis of major policy problems –

The policy framework for viral hepatitis *Healthy Pathways Forward* identifies existing gaps and promotes service integration and partnerships to improve client outcomes with a particular emphasis on chronic HBV and HCV. Initiatives are guided by the four goals of the 2007 MoH policy *Healthy Pathways Forward: A Strategic Integrated Approach to Viral Hepatitis In* BC:

- Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease;
- Engage vulnerable populations in the health promotion, prevention, care, treatment and support services;
- Strengthen the system's capacity to respond; and
- Create seamless service delivery.

Since 2000, the BC Centre for Disease Control (BCCDC) has provided provincial leadership, coordination and implementation of the Ministry of Health's (MoH) viral hepatitis policy. The most recent progress has been documented in the *Healthy Pathways Forward Progress Report May 2007-2010*. However, implementation of the current hepatitis framework is reliant on clients and providers finding ways to work together in their communities and regions, which reflects a passive and reactive approach to system change.

New and emerging HBV and HCV antiviral therapies are poised to dramatically reduce morbidity and mortality related to these chronic infections. As a result, there is an opportunity to shift towards a proactive approach aimed at more rapidly curbing the impact of viral hepatitis in BC. This approach would be designed using the principles of the highly successful "Seek and Treat" model pioneered by the BC Centre for Excellence in HIV/AIDS (BC-CfE). The proposed Viral Hepatitis Strategy will adapt key concepts of this model which includes aggressive and early identification of cases (improving diagnosis among at-risk populations) followed by engagement into care and treatment to prevent disease progression, premature death and transmission in a highly cost-effective manner.

Although many of the principles of the "Seek and Treat" approach are transferable to hepatitis, specific strategies will need to be modified to accommodate differences between HBV, HCV and HIV infected populations, in terms of how disease manifests and progresses, the routes of transmission and the treatment regimes. Despite disease-specific differences, programmatic challenges related to outreach, support, harm reduction, engagement into care and overall management are quite similar, and often overlap. Therefore, harmonizing BC's viral hepatitis and HIV policy frameworks across the prevention and treatment spectrum provides unique opportunities to use proven approaches to improve health outcomes. As HCV infection can be completely cured within a short period of treatment (24 to 48 weeks

and potentially even shorter duration of therapy with newer agents), the impact of HCV therapy on the overall epidemic is expected to be rapid and profound.

The BCCDC and the BC-CfE have distinct and overlapping areas of expertise, which together will be able to expand, and strengthen an integrated response to viral hepatitis aimed to markedly decrease viral hepatitis (HBV and HCV) related morbidity, mortality and transmission in BC by building on the successful "Seek and Treat for Optimal Prevention of HIV and AIDS in BC".

BCCDC initiatives focus on public health prevention; surveillance and population monitoring; training and supporting healthcare providers; developing integrated prevention and care models; providing sexually transmitted infection prevention treatment and support (including, best practices; guidelines, clinical training, education, consultation); clinical outreach; harm reduction; supports community-based organizations and conducts applied public health and program evaluation research. The BCCDC Public Health Microbiology Reference Laboratory (PHMRL) performs the majority of hepatitis C diagnostic and monitoring tests in BC. The Virology laboratory at St Paul's Hospital provides the HBV viral load assay and HBV resistance testing, which are essential components of the HBV therapeutic strategy.

The BC-CfE, using a centralized provincial leadership model, provides state of the art HIV treatment programs and evaluation of outcomes. The BC-CfE uses a continuous quality improvement monitoring and evaluation framework to constantly update guidelines and policies to align with emerging evidence. The CfE Drug Treatment Program ensures a centralized approvals process for antiretroviral prescriptions, provides pharmacovigilance monitoring for adverse events and allows province-wide evaluation of therapeutic outcomes. In addition the BC-CfE fosters extensive research programs. This approach confirmed the public health value of supervised injection and the need to broaden harm reduction practices. More recently the BC-CfE has confirmed that HIV Treatment as Prevention is a key public health prevention strategy for HIV. In the last two decades the province with leadership from the BC-CfE has driven AIDS incidence down by 85%, mortality among HIV-infected people has similarly decreased by 90% and HIV new diagnoses have fallen by 70%. These positive results can be credited, to the BC-CfE contributions to the discovery of Highly Active Antiretroviral Therapy (HAART) in 1996 and more recently their pioneering of HIV Treatment as Prevention in the province. The latter was specifically highlighted by President Bill Clinton in his keynote closing plenary address at the 2012 International AIDS Conference earlier in July. The proposed BC Centre for Excellence in Viral Hepatitis would aim to reproduce these achievements for the HBV and HCV epidemics in BC.

This document proposes the creation of a new virtual BC Centre for Excellence in Viral Hepatitis, building on the leadership and expertise of the BCCDC and the BC-CfE. This will lead to a robust and efficient response to viral hepatitis that in the long term will save lives and money. The proposed centre would formalize the partnership between the two organizations and work to fully integrate the public health and clinical components; improve access and service uptake; promote intersectorial collaboration; coordinate evaluation; and recommend and implement strategies to improve prevention, case finding, and engagement into care and treatment to maximize outcomes.

The proposed centre will support the BC Ministry of Health priorities for service consolidation and integration. A six component service model is proposed which was designed to address the critical issues.

Critical Clinical Issues to be Addressed:

1. New preventable HCV and to lesser extent HBV infections continue to occur.
2. Stigma and discrimination impact access to services and lead to health inequities.
3. There is a large pool of undiagnosed people living with viral hepatitis.
4. There is a large population of chronically infected individuals who are currently either not eligible for or unable to tolerate treatment or for whom treatment was unsuccessful, who are not engaged in care.
5. Client engagement, disease progression monitoring and management are not consistently provided as part of primary care.
6. Clients and providers have a limited knowledge of viral hepatitis; it is difficult to keep up with the rapidly evolving scientific advancements and they need assistance to appraise hepatitis information to make informed decisions.
7. Access to specialty assessment and care is limited.
8. Many of the treatment regimes are poorly tolerated; intensive monitoring and clinical and community-based supports are needed to maximize outcomes.
9. The populations affected, in many cases have complex co-morbid conditions that require collaborative practice models.
10. The current access to hepatitis services is fragmented and it fails to address the public health needs (i.e., it has limited impact on the overall viral hepatitis morbidity, mortality and transmission).
11. There is an absence of systematic outcome and cost-effectiveness indicators at client and program levels.
12. Demand for new emerging antiviral therapies will outpace existing fiscal and human resources.

Recommendation for Action:

Establish a virtual BC Centre for Excellence in Viral Hepatitis under the leadership of the BCCDC and BC-CfE. The BCCDC and BC-CfE will work cooperatively with other key stakeholders, including regional health authorities; health care providers, including HBV and HCV treatment specialists; correctional facilities; community-based organizations and Aboriginal and other affected communities to develop and implement state of the art, cost-effective programs aimed at decreasing morbidity, mortality and transmission of HBV and HCV in BC.

The proposed centre will specifically provide provincial leadership and coordination in the following areas:

1. Implement a robust community engagement strategy that seeks participation from patients, people at-risk of viral hepatitis, health practitioners and other members of the community in the planning, implementation, and evaluation of programs in order to ensure better service coordination and improved health outcomes.
2. Support the development and implementation of innovative prevention initiatives.
3. Develop and regularly up-date evidence-based guidelines and care pathways for disease monitoring and management to support patients, populations and providers.
4. Expand education programs and use technology to reach stakeholders.
5. Develop programs and services that are culturally responsive and counteract stigma and discrimination.
6. Implement evidence-based prevention strategies.

7. Implement population-based testing to identify those infected and undiagnosed e.g. baby boomers for HCV and those likely to be chronically HBV infected.
8. Formalize partnerships and responsibilities among BCCDC, BC-CfE, and other partners such as BC Pharmacare, laboratories, and health authorities to support timely diagnosis, care, and treatment and outcome evaluation.
9. Through partnerships implement models of delivery that integrate interdisciplinary care to support vulnerable populations, those with multiple, complex co-morbidities, and those seeking treatment regardless of where they live.
10. Use technology to connect clients and primary care providers with specialists to maximize community-based care capacity and optimize specialist service use.
11. Establish and manage in collaboration with Pharmacare the provincial viral hepatitis treatment program.
12. Purchase and distribute treatments specific for viral hepatitis.
13. Develop, maintain, and disseminate testing and therapeutic guidelines for viral hepatitis.
14. Establish a pharmaco-vigilance initiative.
15. Monitor safety and efficacy outcomes related to the treatment of viral hepatitis.
16. Forecast the course of the viral hepatitis epidemics.
17. Evaluate the cost-effectiveness of the viral hepatitis strategy.
18. Develop mechanisms to identify and prioritize treatment access.
19. Develop a system for real-time monitoring and evaluation of case finding, engagement into care, disease progression rates, and treatment outcomes.
20. Implement feedback loops that communicate system-wide outcomes to stakeholders.

Proposed Service Model, Goals, Priorities and Budget for the BC Viral Hepatitis Centre for Excellence:

The following is a brief overview of the proposed service model for the BC Centre for Excellence in Viral Hepatitis including the management structure, the major program components, goals, priorities, agency leads and the budget.

Management Structure:

The virtual BC Centre for Excellence in Viral Hepatitis will be co-managed by the BCCDC and BC-CfE through formal agreements and defined roles and responsibilities and will bring together the public health and clinical perspectives to optimally manage these complex chronic infections, with a specific goal of decreasing morbidity, mortality and transmission in a cost-effective manner. This would enable BC to use the lessons learned from the success of the HIV model and the implementation of viral hepatitis policies, which confirm the benefit of engaging clients into treatment, prevention and care at every opportunity, developing strategies to deliver the array of services and treatment needed to improve population level health outcomes. The BC Centre for Excellence in Viral Hepatitis will develop and implement a province wide strategy of "Seek and Treat for Optimal Prevention of Viral Hepatitis in BC" (STOP VH in BC).

The Six Program Components, Goals, Priorities, Lead Agency and Budget:

1. **Surveillance, Quality Assurance and Evaluation**

   Goal: Determine accurate incidence and prevalence rates, monitor system-wide prevention and population health outcomes to support health policy decision-making.

   Priorities:

   1. Develop a centralized data hub.

2. Increase surveillance of health disparities, prevention initiatives, testing patterns, and outcomes.
3. Develop a targeted strategy for HCV infected individuals at high-risk of disease transmission.
4. Use evidence from improved surveillance as the basis of decision-making for program planning, policy implementation and evaluation.
5. Forecast the trajectory of the HBV and HCV disease burden and characterize the resources needed to address it and monitor the cost-effectiveness of the program's initiatives.

Lead agency: BCCDC

BCCDC has the legal framework and legislated authority to collect, integrate and analyze population level surveillance and administrative data. This includes analysis of hepatitis related costs and mortality.

2. **Drug Treatment Program, Health Outcome Evaluation and Quality Assurance**
Goal: To monitor drug treatment program health outcomes, support quality assurance programs, and evaluate cost effectiveness to guide further program development and support health policy decision-making.

Priorities:

1. Develop a centralized drug treatment program for the province.
2. Streamline the anti-viral drug approval process and provide an adjudication mechanism for special cases.
3. Develop programs to monitor treatment response and outcomes:
    a. Develop quality measures of care;
    b. Track treatment outcomes; and
    c. Monitor the impact of hepatitis treatment.

Lead agency: BC-CfE

BC-CfE has developed the HIV Drug Treatment Program as a provincial framework for the procuring and distribution of medications, patient registry and data linkages to support extensive health outcome and treatment evaluation, as well as cost effectiveness analyses. The BC-CfE has fully integrated a quality assurance program within the Drug Treatment Program. Existing Standard Operating Procedures will be easily expanded to support the Viral Hepatitis initiative.

3. **Education**
Goal: Build knowledge, awareness, and capacity of viral hepatitis disease, prevention, risk factors, treatment and medical management.

Priorities:

1. Develop health education resources for populations affected and providers (health promotion and prevention, stigma and discrimination, diagnostic evaluation, natural history and treatment options).

2. Develop and or update hepatitis testing, care, treatment and monitoring guidelines and associated care pathways.
3. Coordinate training of healthcare providers and provide ongoing education.
4. Create structured learning collaboratives.
5. Use multi-media and new technologies to maximize knowledge translation capacity and reach especially to rural and remote areas.

Lead Agency:
BC-CfE to lead training of Medical professionals.

BCCDC to continue to lead education initiatives for nurses, allied health providers, Aboriginal programs, populations affected, and community-based organizations

4. **Health Promotion, Prevention and Harm Reduction**
Goal: Prevent acquisition of viral hepatitis infections and reduce the risks of those infected progressing to serious liver disease.

Priorities:
1. Research, develop and deliver resources that decrease stigma especially in service settings, by employing action oriented research approaches with service providers and those affected to inform knowledge development, exchange and translation.
2. Develop and pilot innovative primary viral hepatitis prevention initiatives, i.e. focus on preventing re-infection in HCV patients who have cleared the virus.
3. Enable patient self-care to prevent progression of liver disease, and improve quality of life.
4. Foster engagement with health and social service providers to promote health, address the social determinants of health and prevent excess disability through targeted strategies for various populations e.g., baby boomers, youth, Aboriginal people, immigrants and IDU.
5. Research, develop and disseminate resources for viral hepatitis prevention and harm reduction, and associated issues such as mental health and addictions.
6. Develop programs to monitor and promote the health of people living with hepatitis infection that includes harm reduction, addiction treatment and social support for HCV infected individuals at high risk of disease transmission.
7. Develop innovative treatment as prevention initiatives and pilot projects.

Lead Agency:
BCCDC to lead primary and secondary prevention initiatives including vaccination (HAV, HBV), chronic illness self-care, peer and community support and provincial harm reduction

BC-CfE to lead urban health research, treatment and treatment as prevention initiatives

5. **Testing and Diagnosis**
Goal: Increase the proportion of people who are aware of their viral hepatitis infection and engage them in appropriate care.

Priorities:

1. Develop a centralized data hub to monitor hepatitis HBV and HCV testing patterns and epidemiological trends that integrates surveillance information to inform the design of innovative testing programs.
2. Expand testing through community, provider and peer partnerships that is culturally responsive and reflects ethnography and epidemiology.
3. Develop innovative testing programs for people living in rural and remote locations and for Aboriginal people.
4. Work in partnership with BC Corrections and Corrections Canada to ensure that testing occurs and results are shared with health authorities.
5. Incorporate hepatitis screening in clinics with a high percentage of at-risk patients or patients presenting with co-morbid conditions.
6. Use surveillance information to develop robust follow up procedures of persons recently infected and target health promotion and prevention supports to sexual and social networks.
7. Examine new laboratory technologies for diagnosis, e.g., point-of-care testing, and use of molecular fingerprinting of HCV to help identify infection incidence and prevalence to monitor disease burden and program effectiveness.
8. Develop standardized diagnostic and baseline evaluation pathways.
9. Develop a standardized system that ensures once diagnosed all people are engaged in appropriate care.
10. Where appropriate support antiviral resistance testing for patients with HCV as well as those co-infected with HIV.

Lead Agency: BCCDC in partnership with PHMRL and St. Paul's Virology

6. **Clinical Care and Treatment Support**

Goal: Provide quality hepatitis care and treatment by building knowledge and awareness, increasing clinical capacity; monitoring safety and efficacy.

Priorities:

1. Implement hepatitis care, treatment and monitoring guidelines.
2. Develop and apply evidence-based triage of persons with chronic infection based on risk for disease progression and participate in the cost-effectiveness evaluation of the triage process.
3. Ensure treatment strategies are culturally responsive.
4. Support practitioners and patients living in rural and remote locations in BC, and correctional facilities.
5. Identify health providers, community partners, and peers who could serve as navigators to assist with expanding access to and integration of treatment services.
6. Establish peer-based support programs through community-led collaboratives for patient support.
7. Develop a hub and spoke model for hepatitis treatment that provides a comprehensive array of interdisciplinary supports including mental health and additions supports in urban, rural and remote settings.
8. Provide consultation and shared management via video.
9. Ensure the treatment of co-morbidities.
10. Develop innovative treatment adherence initiatives and pilot projects.

Lead Agency: BC-CfE

BENEFITS AND RISKS ASSOCIATED WITH CREATION OF THE BC CENTRE FOR EXCELLENCE IN VIRAL HEPATITIS

Benefits of the proposed centre:

1. Decrease morbidity, mortality and transmission of Viral Hepatitis (HCV and HBV) in BC.
2. Increase return on the investment, eventually the strategy becomes cost-averting.
3. Provides national and international leadership.
4. Integrates public health and clinical approaches at the provincial level, improves service delivery and uptake, creates synergies and ultimately assists those affected by viral hepatitis to improve their health and productivity.
5. Treatment is available and mechanisms to prioritize treatment access are put in place.
6. Prevention, care and treatment protocols are standardized and based on current evidence.
7. Outputs from monitoring and evaluation of real-time data are used to inform decisions at all levels of the system to optimize prevention and care services.
8. Technology enabled collaboration and consultation between specialists and primary care maximizes community-based primary care, prevention and treatment and increases primary and specialty care capacity.
9. New technologies and integration improve system efficiency, cost-effectiveness and responsiveness.
10. Integrated approach optimizes individual benefit, and maximizes public health benefit within a cost-effective framework (i.e., the proposed strategy has the potential to virtually eliminate HBV and HCV in BC within a generation).
11. A centralized model provides optimal budget stewardship.

Risks of Not Consolidating and Integrating the Provincial Leadership Structure:

1. BCCDC and BC-CfE do not formalize a partnership and fail to develop the synergies that would improve population level outcomes. Without a centralized provincial structure it is likely that prevention and treatment options remain unequal across the province.
2. Education, guideline up-dating and system integration remain ad hoc.
3. Stigma not addressed and health inequities continue.
4. People will continue to acquire HCV. For example, BC will not be ready to implement HCV treatment as prevention when improved antiviral agents become available.
5. If a proactive approach is not taken, HBV and HCV cases are more likely to be identified and treated late in their disease course which leads to costly hospital care and premature deaths.
6. Affected individuals are not diagnosed or engaged into care and less likely to be triaged in an evidence-based fashion that would identify those who would likely benefit from early treatment – this decreases the cost-effectiveness of treatment.
7. HCV can be a risk factor for acquiring HIV. Without a coordinated system some people with HCV will not be engaged in adequate risk reduction strategies as a way to prevent HIV. A coordinated hepatitis program ensures more optimal engagement of persons at-risk for HIV.
8. Adoption of new therapeutic agents is delayed and antiviral therapeutic efficacy is not evaluated – population level costs and outcomes are not measured.
9. Resource utilization remains inefficient.

NEXT STEPS

1. Complete an agreement in principle between the MoH, BCCDC and BC-CfE
2. Consult with stakeholders to identify other key partners/advisors, and refine the business plan
3. Develop budget based on the agreed framework
4. Set out the time table for the launch of the BC Centre for Excellence in Viral Hepatitis
5. Develop MOUs to establish the roles and responsibilities of the BCCDC, the BC-CfE, and the Health Authorities, these will include:
    a. Expansion of the BCCDC mandate for integrated surveillance and testing for viral hepatitis, quality assurance, education and prevention;
    b. Expansion of the BC-CfE mandate to include viral hepatitis treatment and related monitoring and evaluation, and leadership with regard to therapeutic and management issues;
    c. Expansion of the roles and responsibilities of each Health Authority towards the functioning of the BC Centre for Excellence in Viral Hepatitis; and
    d. Secure privacy-protected nominal data sharing for care
    e. Secure privacy-protected data sharing for program evaluation between the BCCDC and BC-CfE, with expedited access to other relevant databases, similar to that secured for the STOP HIV & AIDS in BC initiative.

BRITISH COLUMBIA | Ministry of Health

Provincial Health Services Authority
Province-wide solutions. Better health.

Healthy Pathways Forward Progress Report

May 2007 - 2010

Prepared by:
Clinical Prevention Services
BC Centre for Disease Control
and
Population and Public Health
Ministry of Health
October 2011

Table of Contents

Executive Summary

In May 2007, the Ministry of Health (MoH) released ***Healthy Pathways Forward: A Strategic Integrated Approach to Viral Hepatitis in BC.*** This progress report summarizes British Columbia's progress towards the four goals originally outlined in ***Healthy Pathways Forward.*** It also highlights new information, and identifies new opportunities for action.

Since 2007, acute hepatitis A (HAV) rates have fallen from 1.7 to 1.0 per 100,000 people; hepatitis B (HBV) rates have fallen from 0.9 to 0.6 per 100,000 people; and hepatitis C (HCV) rates have fallen from 67.3 to 54.9 per 100,000 people. Initiatives in B.C. have contributed to this decline and have increased our ability to measure hepatitis rates. Changes in hepatitis rates are also influenced by international and national trends, such as increases in HBV vaccination rates and elimination of potential risk factors.

Between 2007 and 2010, initiatives in B.C. to decrease the rates of viral hepatitis have focused on four areas:

- Expanding program reach and engaging vulnerable groups through integrated community-based prevention and care;
- Enhancing public health programs;
- Sharing new information with people who have viral hepatitis as well as their care providers; and
- Improving surveillance and the ability to evaluate programs.

Collaboration among the Provincial Health Services Authority's (PHSA) BC Centre for Disease Control (BCCDC), regional health authorities, community organizations and those living with viral hepatitis is an important part of successfully addressing viral hepatitis in B.C. ***Healthy Pathways Forward*** identified ways to help reduce the number of new viral hepatitis infections and lessen the impact of these viruses on individuals living with hepatitis.

The four goals discussed in ***Healthy Pathways Forward***, are outlined below. B.C.'s progress toward meeting those goals is also summarized.

Goal 1: Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease

Since ***Healthy Pathways Forward*** was released in 2007, a number of resources have been invested in HCV prevention. These include harm reduction programs and education for at-risk groups and health care providers:

- Increases in harm reduction supply delivery, including providing sterile needles and condoms to those who use intravenous drugs (IDU);
- Expansion of mental health and substance use services, including methadone maintenance treatment;

- Continued access to supervised injection at Insite and the Dr. Peter Centre;
- Support for trials of prescribed opioids (the North American Opiate Medication Initiative, or NAOMI);
- Three new HBV drug therapies (adefovir, tenofovir and entecavir) were added to the BC PharmaCare formulary; and
- Enhanced epidemic tracking and research on risk behaviours among IDU.

Goal 2: Enhance reach and engage vulnerable populations in the health promotion, prevention, care, treatment and support service continuum

Since 2007, progress has been made towards expanding the reach of viral hepatitis programming and engaging vulnerable populations:

- Vaccination against HAV continues to be available for those who are vulnerable to infection, and HAV infection rates continue to fall;
- As of 2010, 83 per cent of two year olds were fully vaccinated against HBV;
- The number of first time and repeat testers for HCV has increased steadily since 2007. This suggests that access to testing has improved;
- Enhanced outreach programs in Prince George and Kelowna; and
- Community-based prevention and care initiatives suggest that strong effective partnerships are needed to carry out effective health promotion, prevention, care, treatment and support activities.

Goal 3: Strengthen the system's capacity to respond

Since 2007, the following progress has been made towards strengthening the system's capacity to respond to viral hepatitis infections:

- Improved viral hepatitis surveillance tools, improved testing to detect infection, and increased access to viral hepatitis treatment; and
- Better capacity to measure healthcare costs and outcomes for people living with viral hepatitis, including factors such as quality of life and mortality related to HCV infection.

Goal 4: Create seamless service delivery

Since 2007, the following progress has been made towards creating seamless service delivery:

- The health system has expanded reach to vulnerable groups. This expansion has increased access to services for individuals who are living with or at-risk for viral hepatitis, and is supported by effective partnerships and integrated services.

- Ongoing initiatives to improve communication between health care practitioners and those affected by viral hepatitis. This includes the development of culturally appropriate health resources aimed at improving communication and providing information to help individuals navigate the health system.

The ministry and specialized provincial agencies like the BCCDC will continue to provide leadership and work with regional health authorities and other relevant stakeholders to achieve these goals. Improvements in service efficiency and health outcomes for British Columbians will continue to be measured through regular progress reporting. Because viral hepatitis affects vulnerable groups disproportionately, it is crucial that the collaborative integrated programs that reach and engage these groups in health promotion, prevention, harm reduction, care, treatment and support are enhanced.

Introduction and Background

Hepatitis is the general term used to describe liver inflammation. There are many different forms of hepatitis. It is most commonly caused by viruses. In B.C., hepatitis A, B and C are the most common types of hepatitis.

Four Goals of Healthy Pathways Forward

1. Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease
2. Enhance program reach and engagement of vulnerable populations in the health promotion, prevention, care, treatment, and support service continuum
3. Strengthen the system's capacity to respond
4. Create seamless service delivery

Strategic Priorities

1. Creating an integrated, community-based service model
2. Expanding and enhancing partnerships
3. Improving surveillance capacity
4. Integrating learning

In May 2007, the Ministry of Health released ***Healthy Pathways Forward: A Strategic Integrated Approach to Viral Hepatitis.*** This document outlines the provincial strategy to address viral hepatitis in B.C., which involves complementing and supporting community and health authority initiatives. It outlines four main health system goals and strategic priorities for immediate action. These goals and priorities support service integration, health promotion, and the engagement of vulnerable groups and communities. Collectively, these goals are designed to reduce new cases of hepatitis and minimize the impact of these viruses. ***Healthy Pathways Forward*** was developed by MoH, and was the result of collaboration between the BCCDC, regional health authorities, community partners, clinicians, and individuals living with or vulnerable to viral hepatitis.

At the time that ***Healthy Pathways Forward*** was released, HAV and acute HBV were managed effectively through vaccination and education initiatives. This included the

HBV vaccination program and HAV vaccinations targeted at vulnerable populations. Although vaccine programs were very effective for preventing new HBV infections, the number of people with chronic HBV infections continued to grow. This trend was particularly evident in new Canadians who had been infected in their country of birth.

In B.C., rates of newly reported HCV (which is not vaccine preventable) remained much higher than national rates. The majority of people diagnosed with HCV infection reported a history of intravenous drug use, had immigrated from an area where HCV was endemic, or had previously been exposed to contaminated blood products. ***Healthy Pathways Forward*** suggested that chronic HBV infections and the prevention and control of HCV infections be managed through collaborative partnerships and integration of services.

Five regional health authorities and one provincial health authority currently share responsibility for collaborating with community and planning, delivering and evaluating prevention and care services to achieve the goals established in ***Healthy Pathways Forward***. To this end, Clinical Prevention Services at the BCCDC:

- Collaborates with regional health authorities to deliver HAV and HBV vaccination programs;
- Develops and refines best practices through integrated projects in multiple settings;
- Collaborates on education and applied research;
- Analyzes surveillance and other data to help health authorities develop and refine programs such as targeted testing; and
- Assists in evaluating outcomes.

Community-based organizations play an important role in the engagement and support of individuals living with or at risk for viral hepatitis. These organizations connect people with education and prevention services, and advocate for the most marginalized individuals.

Healthy Pathways Forward made a commitment to formal progress reporting. This document supports this commitment by summarizing B.C.'s progress with the four goals outlined in the original document. This progress report recommends future opportunities for increasing the efficiency of services and enhancing outcomes in B.C. It also presents a summary of the indicators that are used to monitor and demonstrate progress towards the four goals and priorities outlined in ***Healthy Pathways Forward***.

Although the document reports on hepatitis related activities between 2007 and 2010, this report is also consistent with evolving Ministry of Health priorities which include provincial and regional health authority and Lower Mainland Consolidation efforts and the restructuring by BCCDC to better integrate services. This integration supports sustainable healthcare aimed at maximizing prevention and treatment. For example, HAV vaccine will be routinely offered to Aboriginal infants. A promising array of new treatments could dramatically improve outcomes for those chronically infected with HBV and potentially cure most cases of HCV within the next decade.

Goal 1: Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease

Progress since May 2007:

The BCCDC is the central surveillance and reporting centre for hepatitis infections. It continues to track newly identified HAV, HBV and HCV infections. The BCCDC and the public health laboratory inform regional health authority staff of new HCV infections and co-infections with other communicable disease such as HIV. The BCCDC aims to inform hepatitis prevention and harm reduction programming, as well as support monitoring and evaluation efforts.

Since 2007, new cases of HCV and incidences of acute and chronic HBV in B.C. have declined.[1] This decrease in hepatitis rates has likely been influenced by multiple factors. This includes increased HBV immunization in countries where hepatitis is endemic and among those who use illegal drugs, and a shift from injection towards other drug delivery methods such as smoking.[2]

Since 2007, new cases of HCV and incidences of both acute and chronic HBV in B.C. have declined. Incidences of HCV among repeat testers have also declined since 2007. Although annual rates of seroconversion in males continue to be higher than in females, this gap is narrowing.

(BC Centre for Disease Control. Communicable Disease Prevention & Control Services)

Improvements to infectious disease surveillance and data analysis have helped identify the common risk factors associated with hepatitis transmission in vulnerable populations. Improvement in surveillance also informs work that addresses some of the major contributors to the transmission of communicable disease. These factors include broader health inequities and social determinants of health. This data confirms the need for continued service integration.

The number of locations in B.C. where harm reduction supplies (including new items such as cookers) are available for IDU has increased. Mental health and substance use services have also expanded, including methadone maintenance therapy. Innovative programs, such as supervised injection sites at Insite and the Dr. Peter Centre, continue to be supported.

With the help of researchers and health providers, the Province has explored innovative approaches to reducing the risks associated with hepatitis. This includes the North American Opiate Medication Initiative (NAOMI), and the proposed Study to Access Long-term Opioid Maintenance Effectiveness (SALOME), which has recently received approval from Health Canada.

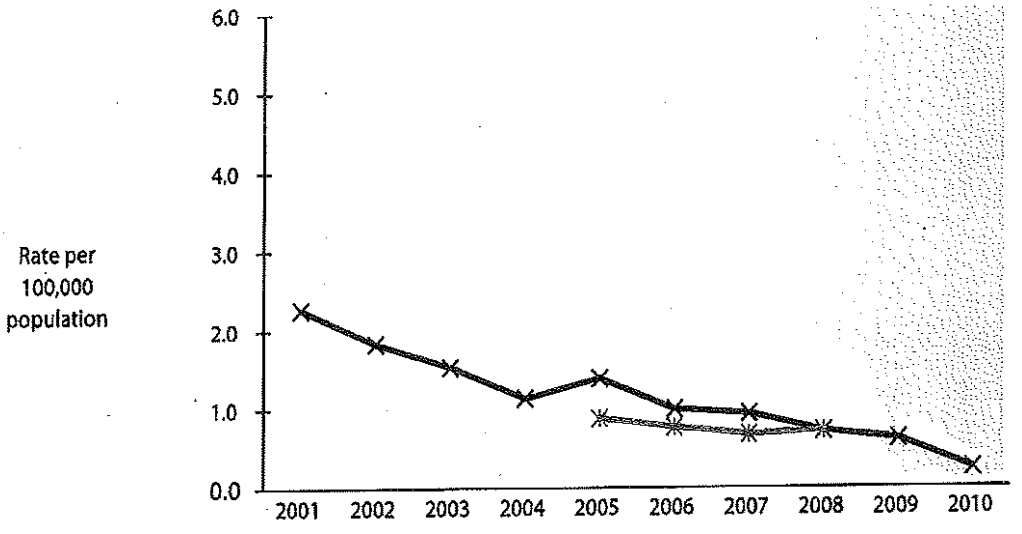
The Harm Reduction Strategies and Services Committee (HRSS) – which oversees B.C.'s publicly funded harm reduction supplies program – has created a Harm Reduction Tool Kit. This is designed for front-line workers and volunteers who distribute safer sex and drug use supplies. The HRSS continues to work with the Province to guarantee equitable and appropriate access to harm reduction supplies and further improve harm reduction services across B.C.

[1] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

[2] Office of the Provincial Health Officer (2011) Decreasing HIV Infections among People Who Use Drugs by Injection in British Columbia: Potential Explanations and Recommendations for Further Action.

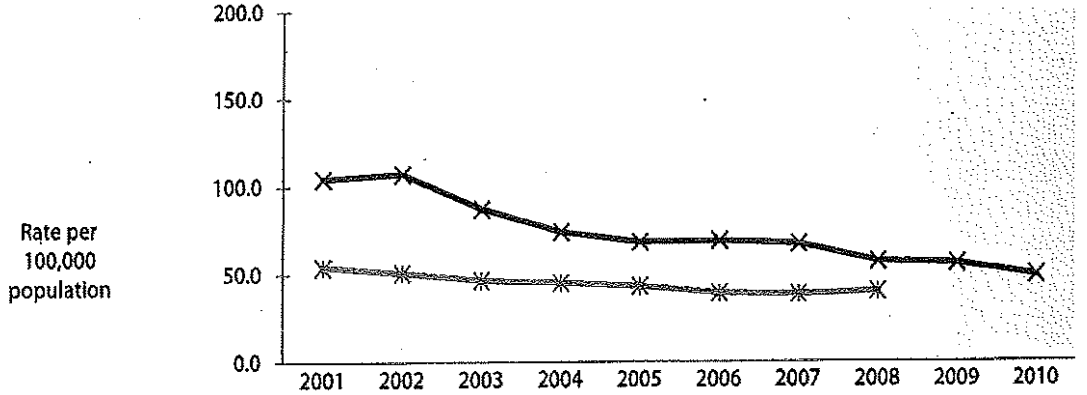
Since 2008, three new HBV drug therapies were added to the BC PharmaCare drug formulary: adefovir (Hepsera®), entecavir (Baraclude®) and tenofovir (Viread®). These drugs help prevent individuals with hepatitis from developing serious liver disease.

Acute hepatitis B cases in B.C., 2000-2010[3]



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BC Hepatitis B: Acute Reports	92	75	63	47	58	42	40	31	27	11
BC Hepatitis B: Acute Rate	2.3	1.8	1.5	1.1	1.4	1.0	0.9	0.7	0.6	0.2
Canadian Acute Hepatitis B Rate					0.9	0.8	0.7	0.7		

Newly identified Hepatitis C cases in B.C., 2000-2010[4]



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BC Hepatitis C Reports	4257	4396	3598	3080	2866	2928	2897	2496	2490	2223
BC Hepatitis C Rate	104.4	107.3	87.3	74.1	68.3	69.0	67.2	56.9	55.9	49.1
Canadian Hepatitis C Rate*	54.1	50.8	46.6	45.0	43.2	39.2	38.5	40.0		

[3] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.
[4] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

Healthcare workers and first responders are the most at risk of occupational exposure to viral hepatitis infection. A vaccine as well as post-exposure immunoprophylaxis is available to prevent HBV. While there is no vaccine for HCV, the risk of infection per exposure is less than two percent, and approximately 25 percent of those who get the infection will clear the virus on their own. Post-exposure protocols can either prevent chronic infection or cure most infections. A review of first responder and healthcare worker claims of occupational exposure to viral hepatitis show relatively few over a 24 year period, with a small number subsequently developing HBV or HCV[5].

Future Actions:

With the help of primary care practitioners, the BCCDC, and other valuable partners, the regional health authorities will implement integrated public health follow-up for acute HCV cases. This includes contact tracing, case finding, disease spread and risk reduction counselling. They will use methods that are similar to those used for HIV infection. Integrated public health follow-up will help encourage at-risk individuals to get tested, and help encourage recently infected individuals to receive early treatment.

In addition, this partnership will use social marketing methods to increase public awareness of viral hepatitis transmission, and correct misperceptions and stereotypes. By doing so, this partnership will facilitate the removal of barriers to hepatitis testing and treatment.

Training on universal precautions and risk when dealing with blood and body fluids to prevent occupational exposures, as well as immediate clinical care in the few cases when exposure cannot be prevented, has been shown to be the best method to prevent new viral hepatitis infections and ensure that infection does not lead to serious liver disease. The BCCDC is working closely with the Justice Institute of B.C. to develop educational modules and occupational health protocols to better inform first responders of the risks of exposure to viral hepatitis in their jobs and how best to prevent transmission.

[5] Dr. Peter Rothfels, WorksafeBC, Personal Communication to Provincial Health Officer, 2011.

Goal 2: Enhance program reach and engagement of vulnerable populations in the health promotion, prevention, care, treatment and support service continuum

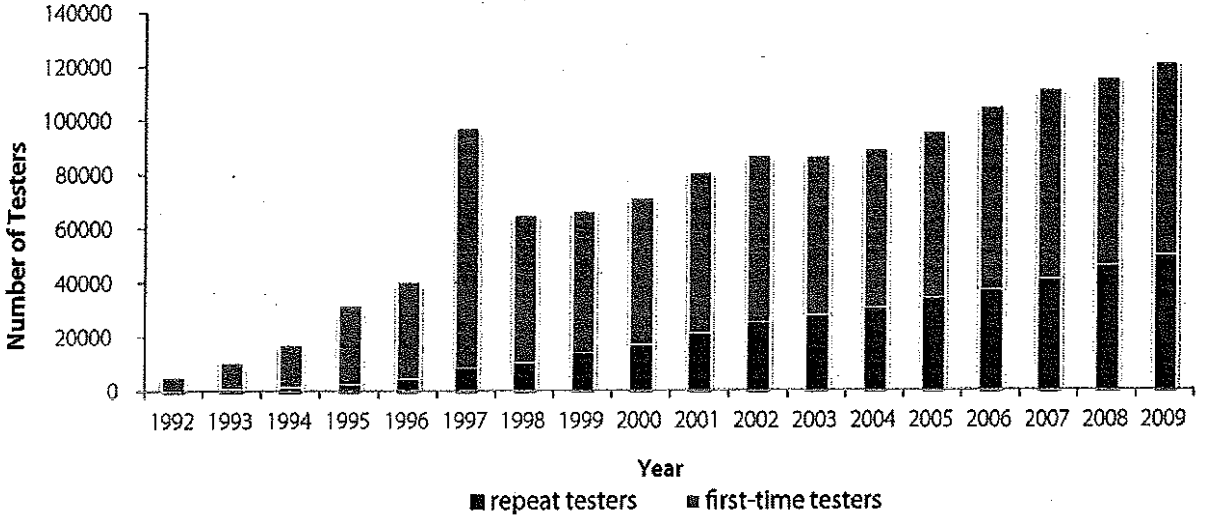
Progress since May 2007:

The Province continues to provide at-risk individuals with better access to HAV vaccinations. Within B.C., rates of reported HAV infection continue to fall. Additionally, aggressive management of HAV outbreaks has prevented widespread transmission. B.C.'s HBV infant immunization program was introduced in 2001. By 2010, 83 per cent of two year olds were fully immunized against HBV.[6]

Surveillance suggests that an increasing number of people are getting tested for HCV. This includes both first time and repeat testers, and suggests that people have better access to HCV testing.[7] However, the number of people receiving HCV treatment has not changed. This may be because some British Columbians are waiting for new treatment options.

Between 2008 and 2010, financial and staff resources have been invested in integrated prevention and care projects in the Vancouver Island, Interior, Fraser, and Northern health authorities. Project collaborators focused on using partnerships to increase access to, as well as capacity for, primary viral hepatitis prevention, specialty clinical assessments, chronic illness management and treatment. These projects included a broad range of areas – including public health, primary care, and mental health and substance use – and supported increased access and program reach. Participants in these projects experienced positive outcomes.[8]

Annual number of first-time and repeat anti-HCV testers, B.C., 1992 – 2009[9]



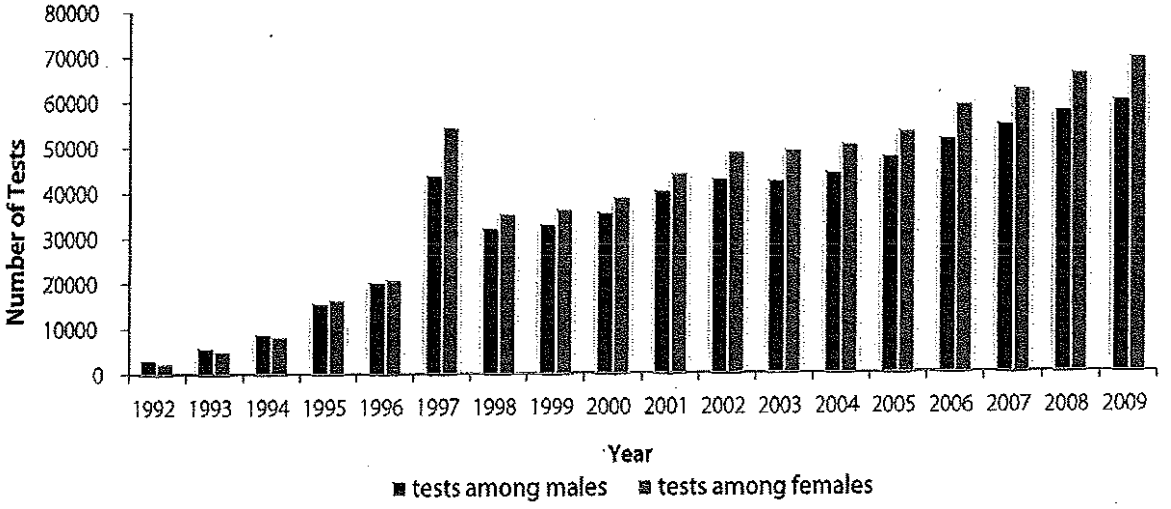
[6] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

[7] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

[8] Butt, G. Partnership and Population Outcome Relationships in Four Nurse-Led Hepatitis C Integrated Prevention and Care Projects 2009. PhD thesis.

[9] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

Annual number of anti-HCV testers, by sex, B.C., 1992 – 2009[10]



The BCCDC helps individuals who contracted HCV through infected blood products access compensation. A 1-800 line dedicated to helping these individuals manoeuvre the process of receiving compensation has now become a general help line for all questions related to viral hepatitis.

The BCCDC website connects people with self-help resources, including links to human rights information, advocacy organizations and educational materials for nurses, patients and other care providers. They continue to develop culturally appropriate educational resources for priority groups, which includes groups with low literacy rates and unstable living conditions.

Community organizations provide essential support and services for individuals in B.C. who are living with or at risk for viral hepatitis. The individuals who work in these organizations are important partners in programs and initiatives designed to prevent viral hepatitis, engage at-risk and hard-to-reach people, and raise awareness among the general public.

Future Actions:

With the support of regional health authorities, the integrated care projects have been transitioned into ongoing community-based prevention and care programs. These programs are designed to integrate primary care services and include mental health and substance use support. BCCDC resources will be redirected to support the transition towards prevention initiatives.

Partners will work collaboratively to develop health resources for populations at risk for blood-borne chronic diseases. They will conduct research to assess and measure barriers to accessing services. This will help determine how and why people decide to access care or treatment, and will support health care practitioners and policy makers to improve how hard-to-reach populations access and engage with services.

[10] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

Partners will also evaluate the effectiveness of various viral hepatitis educational platforms designed for care providers, including face-to-face instruction and online. The BCCDC will support the development of national standards and competencies for Viral Hepatitis Nursing Practice, and re-evaluate the educational needs of front line nurses. A Provincial Community of Practice network will support sharing and implementation of leading practices between health and social service professionals who work in geographically dispersed areas. In addition, effective training and education will help front line workers better engage individuals in health promotion, prevention, care, treatment and support.

Goal 3: Strengthen the system's capacity to respond

Progress since May 2007:

The BCCDC has worked with health system partners to enhance B.C.'s viral hepatitis surveillance capacity. This partnership has achieved the following goals:

- Improved identification of laboratory-diagnosed acute HCV and HBV cases. As a result, physicians and medical health officers are now informed daily of new positive tests;
- Increased use of prenatal testing to track pregnant women who have chronic HBV infections in order to provide the best preventative care for their infants;
- Enhanced HCV and HIV analysis among individuals who are tested repeatedly for viral hepatitis in order to support and evaluate prevention efforts; and
- More accurate monitoring of prenatal communicable disease testing to ensure women are screened appropriately and service gaps are identified.

BCCDC included content on the stereotypes and discrimination associated with HCV in educational programming. They have also completed the first Canadian studies on the stigma associated with HCV. In partnership with regional health authorities, the BCCDC intends to use this new knowledge to increase awareness of the stigma and discrimination experienced by vulnerable populations, helping to break down barriers to care and services.

Anonymous linkages between surveillance and other healthcare datasets have enabled the analysis of multiple outputs and outcomes related to viral hepatitis. This includes:

- Better understanding of the burden associated with HCV. Partnership with university researchers has led to estimates of morbidity and mortality in individuals infected with HCV. This research examined a cohort of individuals who underwent HCV antibody testing between 1992 and 2004. It analysed HCV related health costs, out of pocket costs[11], quality of life[12], and methadone utilization[13];
- Better understanding of the relationship between HCV infection and mental health or substance use problems through data linkage;
- Reduced harm to patients through the timely identification of individuals who do not respond to HCV therapy. This is accomplished through partnership between PharmaCare and the PHSA laboratory; and
- Improved understanding of hepatitis as a chronic illness and the stereotypes or discrimination experienced by persons with HCV.[14,15]

[11] Krajden, M. et al. (2010) Healthcare Costs Associated with Hepatitis C: A Longitudinal Cohort Study. Can J Gastroenterol. 24(12):717-26.

[12] Hsu, PC et al. (2009) Does Cirrhosis Affect Quality of Life in Hepatitis C Virus-Infected Patients? Liver International 29(3):449-58

[13] Buxton, J. et al. (2010) Methadone Use in Relation to Hepatitis C Virus Testing in British Columbia. Can J Public Health. 101(6):491-4

[14] Butt, G. Paterson, B.L., McGuinness, L.K. (2008) Living with the Stigma of Hepatitis C. West J Nurs Res. 30(2): 204-21

[15] Butt, G. (2008) Stigma in the Context of Hepatitis C: Concept Analysis. J Advanced Nursing. 62(6):712-24

Laboratory initiatives have led to better use of resources, including an improvement in standard operating procedures and a reduction in duplicate HCV testing. This helped increase research capacity, knowledge exchange, and multi-sectoral collaboration. For example, collaboration between Vancouver Hospital and Health Sciences Centre's Gastroenterology Division and the BCCDC has supported viral hepatitis education projects for front-line health and social care professionals throughout B.C. This partnership increased system capacity to test and treat viral hepatitis, and expand secondary prevention activities.

The availability of viral hepatitis education for health and social service students and professionals has increased. Educational information on viral hepatitis is available through formal teaching at affiliated universities, Canadian Institute for Health Research-funded national Hepatitis C Research student mentoring, graduate student supervision, presentations, video conferencing, workshops, quarterly newsletters and peer reviewed publications. In addition, the BCCDC worked with the British Columbia Institute of Technology to develop an on-line Interdisciplinary Viral Hepatology course for nurses and social service providers.

Future Actions:

Sustained data linkages will be made that focus on individuals who are undergoing testing for HBV, HIV, and TB. This also includes linkages with key MOH datasets to improve the evaluation of population health and prevention interventions related to viral hepatitis.

New drug treatments that improve chances of curing HCV and suppressing HBV are being developed. Better decision making for public coverage of these new drug therapies will be enhanced through proposed anonymous linkages between surveillance and drug therapy data. In addition, the province will introduce HBV resistance testing across the province to enable better drug treatment choices.

Increased exchange of new information and integrated prevention and care initiatives will allow the right information to be available to individuals who rely on it to care and support those living with viral hepatitis.

Linkages between HIV and HCV testing data have been used to estimate the prevalence of HIV-HCV co-infection, as well as the time between diagnosis of either infection and HCV-HIV co-infection. Approximately 50 per cent of co-infected individuals were initially diagnosed with HCV and subsequently diagnosed with HIV within a median of 3.5 years. (Buxton, J. et al, 2010) This suggests that, in order to prevent subsequent HIV infection, HCV mono-infected individuals should receive intensive prevention programming and support. Effective HIV screening for individuals with HCV within three months of the initial HCV diagnosis is being monitored as an outcome indicator for B.C.'s Seek and Treat to Optimally Prevent HIV/AIDS (STOP HIV) pilot.

Goal 4: Create seamless service delivery

Progress since May 2007:

The health system has improved reach and access to viral hepatitis prevention, care, treatment and support. Public health nurses contact and interview individuals acutely infected with HBV and assist with HCV. This helps to identify current risk factors in those who have been infected recently (incident cases), and provides prevention counselling and harm reduction support to minimize ongoing transmission of viral hepatitis. A partnership with the Public Health Agency of Canada has improved the identification and tracking of risk factors that are related to acute HBV and HCV.

Collaboration between the BCCDC and the PHSA Centres for Chronic Disease Prevention has identified health inequalities for immigrants, refugees, individuals in corrections, and individuals requiring mental health and substance use support.[16] These observations will inform the development of effective support activities.

Health resource materials have been developed and disseminated to improve communication between health care practitioners and individuals affected by viral hepatitis. These materials support effective communication and navigation through the health system, and are available in English and French languages, and are culturally appropriate for Aboriginal audiences.

In order to confirm the ongoing effectiveness of universal HBV and targeted HAV immunization programs, the BCCDC continues to track acute and chronic HBV and HAV infections. In collaboration with regional health authorities, the BCCDC analyzes HCV and HIV testing data to plan and identify issues with service access. The recognition that HCV infection can indicate a risk for HIV infection resulted in a linkage with the STOP HIV initiative[17], which aims to identify those at risk for HIV and potentially reducing incidence of both HIV and HCV. STOP HIV will report on the progress in this area in the next 24 - 26 months.

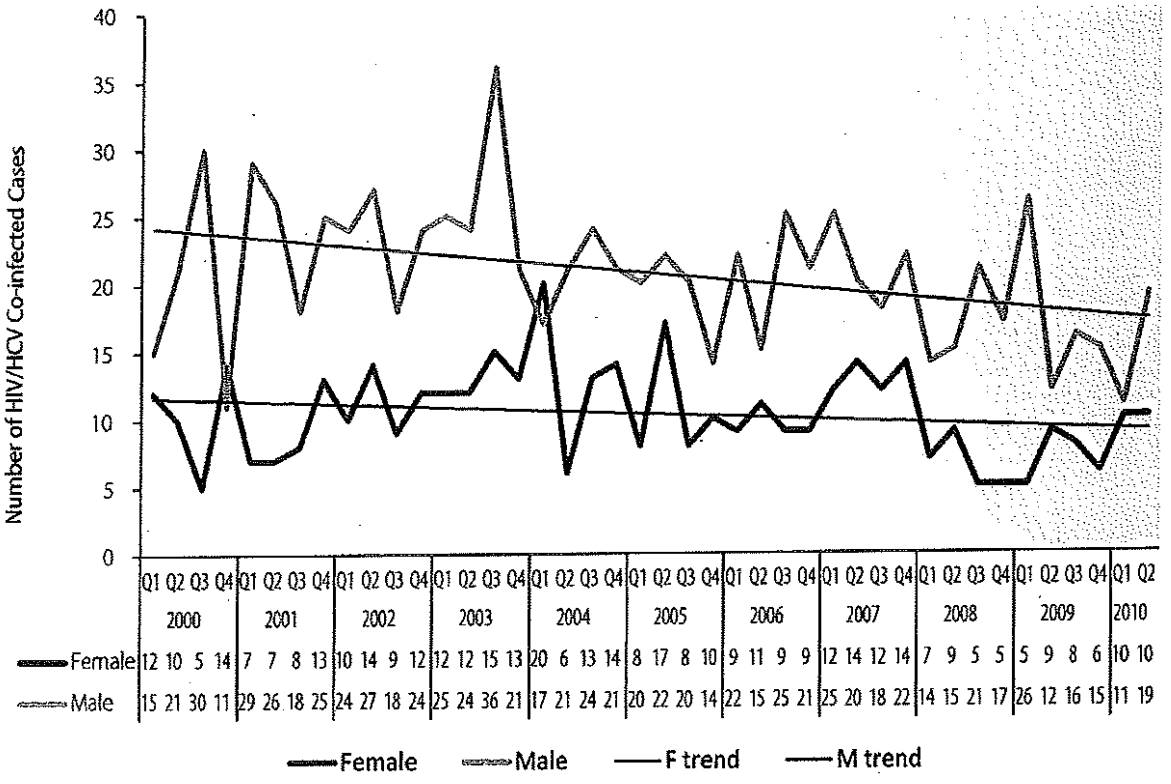
Although service delivery in the province has improved since ***Healthy Pathways Forward*** was released in 2007, there are still opportunities to enhance services. In order to ensure continuity of care, including access to harm reduction, testing and treatment, public health prevention services need better integration with the corrections system. In addition, there are opportunities to streamline the prevention, testing and treatment services for individuals who have recently immigrated to Canada.

To comprehensively engage hard-to-reach groups and meet the needs of those living with viral hepatitis, partnerships have been the key to success in integrated prevention and care demonstration projects in the Fraser, Interior, Northern and Vancouver Island Health Authorities. Evaluation of these partnerships – collaboration among public health, primary care, mental health and substance use and an array of community partners - has demonstrated the enhanced health outcomes and highlighted the value of integrated care.

[16] BC Centre for Disease Control. Communicable Disease Prevention and Control Services.

[17] The Seek and Treat to Optimally Prevent HIV/AIDS (STOP HIV) pilot project is a $48M, four year provincially funded initiative to expand the reach of HIV testing and treatment among at-risk and marginalized people in Vancouver and Prince George not previously engaged in care, or lost to care follow up.

Number of new HCV-HIV co-infection cases, by gender, B.C., 2000-2010[18]



Future Actions:

All partners will work together to develop a standardized response for new acute HCV infections.

The province will work with multiple jurisdictions to provide seamless service delivery to vulnerable populations. This includes individuals who are leaving corrections, new immigrants and refugees. Progress in addressing viral hepatitis among Aboriginal British Columbians will be addressed in a tripartite manner.

Health system partners will explore opportunities to measure HCV treatment uptake and cost-effectiveness. This will ensure more efficient treatment programming for individuals with viral hepatitis. Data linkage with the Vancouver Island Health Authority will result in more comprehensive HCV and HBV testing data, which will help to inform program planning.

The BCCDC will regularly update HBV and HCV guidelines to reflect and include new information. Effective communications strategies will translate evidence into tools, advice and support for those affected, front-line health care professionals, policy makers and community. These strategies will help eliminate gaps in the continuum of care, improve access to care and help people navigate health services.

Summary

Viral hepatitis incidence and prevalence rates in B.C. are decreasing and the Province's capacity to treat and manage chronic infections effectively has improved. Since 2007, regional health authorities, the BCCDC, community organizations and other health and social service system partners have worked to improve the integration of prevention and care services for people affected by and vulnerable to viral hepatitis. Reductions in HCV incidence and prevalence are the result of multifaceted approaches taken by many partners. These approaches incorporate prevention, harm reduction and treatment to reduce the health inequities that vulnerable populations experience.

Research has confirmed that individuals who are infected or at-risk for contracting HCV are also susceptible to a number of acute and chronic conditions. This includes HIV and other sexually transmitted infections, tuberculosis, substance use problems, and mental illness. Given that vulnerable populations experience disproportionate health burdens, there is a critical need to develop programs that support these individuals across a range of health care needs. This includes broad health promotion activities that are linked to prevention interventions carried out at every individual encounter.

Appendix: Indicators

Indicator 1: HCV incidence among repeat testers[18]

Description: A recently-acquired infection is defined as a positive test with a negative test on record within the previous 24 months, indicating that the individual has contracted the infection within the last two years. This method identifies a particular group (repeat testers) as a high-risk population.

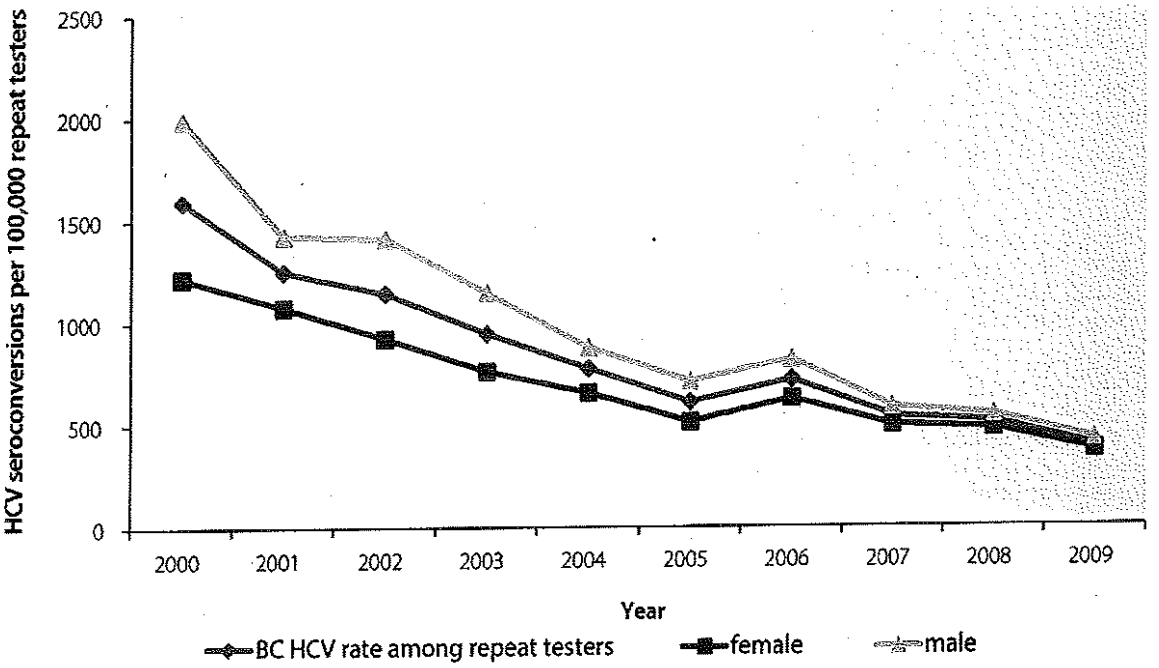
The BCCDC estimates HCV incidence trends by dividing the number of seroconversion cases (those who go from being uninfected to being infected with the virus), which represent the estimated number of recently acquired infections, by the number of repeat testers, which represent the estimated population at risk.

Key Message:

New HCV diagnoses among repeat testers are declining, and while annual rate of seroconversion in males is higher than in females, this gap is narrowing.

[18] BC Centre for Disease Control. Communicable Disease Prevention and Control Services

Annual rate of HCV seroconversion cases (within 24 months) per 100,000 repeat testers, total and by sex, B.C., 2000 – 2009



Indicator 2: Risk Factor Surveillance[19]

Description: The Enhanced Hepatitis Strain and Surveillance System project monitors acute HBV and HCV cases (those whose infection occurred within the previous 12 months). Since 2000, 185 individuals with acute HCV have been interviewed regarding recent and lifetime risk factors.

The 2007 to 2009 acute HCV risk factor interview results for 58 participants are:

- The percentage of individuals reporting injection drug use as a risk factor dropped 10 per cent (from 86 per cent to 76 per cent) when compared to previous years. Those reporting non-injection drug use increased by 13 per cent (from 77 per cent to 90 per cent);
- Time in correctional facilities is associated with acute HCV infection; 15 per cent of individual interviewed had been in correctional facilities, and a number of those who could not be interviewed were in correctional facilities at the time of referral for testing; and
- More than 75 per cent of individuals interviewed report three or more risk factors for HCV.

Key Messages:

A continued focus on youth and young adults with problematic substance use is critical, and there has been a shift from injection to non-injection drug use. There is a need to reach at-risk individuals with harm reduction messages and services related to multiple risk behaviours. To be effective and ensure continuity of services, public health prevention services should be integrated with the corrections system.

[19] BC Centre for Disease Control. Communicable Disease Prevention and Control Services

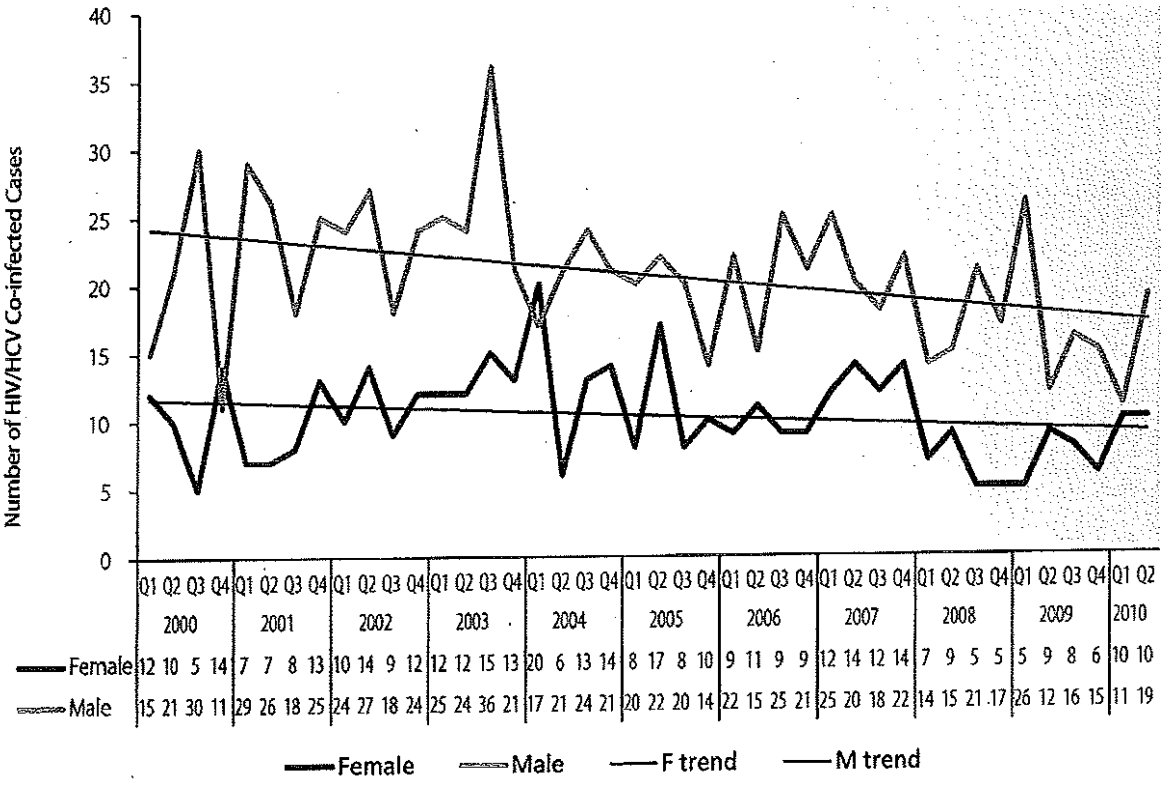
Indicator 3: HCV-HIV co-infection cases[20]

Description: Co-infection of HIV and HCV is an indicator for risk behaviours, typically injection drug use and high-risk sexual activity. The number of new HCV-HIV co-infections is tracked quarterly.

Key Message:

The number of HCV-HIV co-infections is decreasing in both males and females.

Number of new HCV-HIV co-infection cases, by gender, B.C., 2000-2010 (Q2)



Indicator 4: HCV-HIV co-infection timing of diagnosis[21]

Description: In 2009, positive cases of HIV were linked to HCV laboratory testing data. Analysis showed that over half of HIV-infected people who were tested for HCV were HCV positive, and half of these individuals had been diagnosed with HCV first and was diagnosed with HIV a median of three and a half years later.

Key Messages:

HCV diagnosis is a strong risk factor for subsequent infection with HIV. This highlights the importance of public health follow-up and harm reduction services for people identified with HCV to prevent subsequent HIV infection.

[20] Buxton, J. et al. (2010) HCV Co-infection in HIV Positive Population in British Columbia, Canada. BMC Public Health. 10: 225-35.
[21] Buxton, J. et al. (2010) HCV Co-infection in HIV Positive Population in British Columbia, Canada. BMC Public Health. 10: 225-35.

Indicator 5: Acute HBV cases[22]

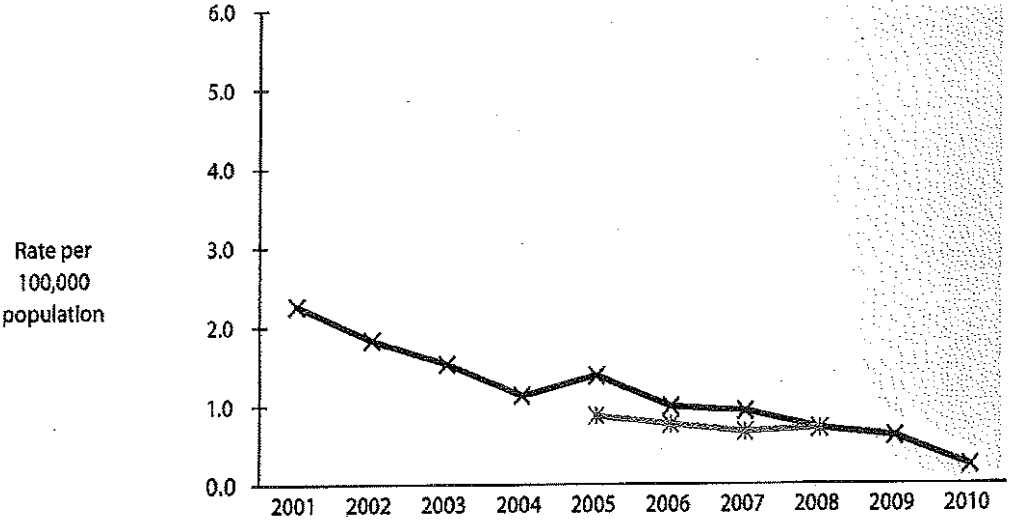
Description: Acute HBV is a reportable infection in B.C. When HBV is newly identified without symptoms of acute infection or a known history of past infection, follow-up testing in six months may be needed to identify it as acute or chronic infection.

Universal HBV vaccine for grade six students became available in B.C. in 1992, and the province-wide infant program was introduced in 2001. The first recipients of the adolescent school-based program were aged 28 years in 2009. The vaccine is also publicly funded for individuals at high risk of infection, including people who use injection drugs and men who have sex with men.

Key Messages:

The annual number of reported acute HBV cases continues to decline. Only three acute HBV cases in 2009 were identified in persons less than 30 years of age.

Acute hepatitis B cases in B.C., 2000-2009



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BC Hepatitis B: Acute Reports	92	75	63	47	58	42	40	31	27	11
BC Hepatitis B: Acute Rate	2.3	1.8	1.5	1.1	1.4	1.0	0.9	0.7	0.6	0.2
Canadian Acute Hepatitis B Rate					0.9	0.8	0.7	0.7		

[22] BC Centre for Disease Control. Communicable Disease Prevention and Control Services

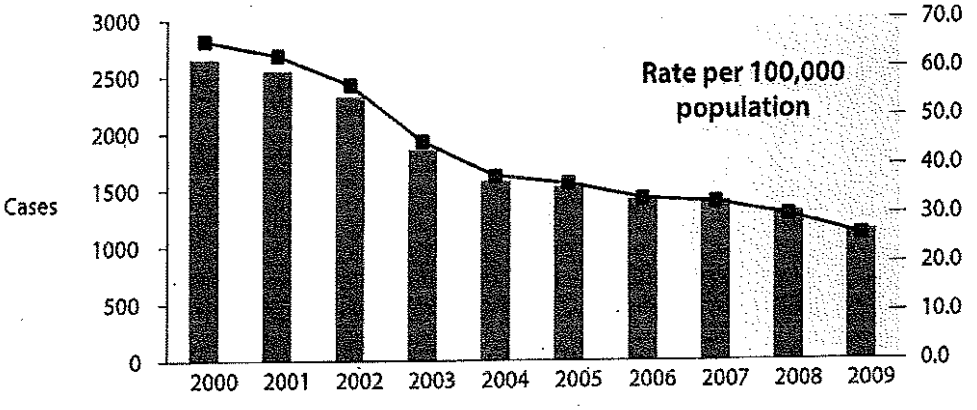
Indicator 6: Hepatitis B chronic carrier rates[23]

Description: Newly-diagnosed cases of chronic HBV in B.C. are largely a result of immigration from HBV-endemic regions of the world.

Key Messages:

B.C.'s newly-identified chronic hepatitis B rates have declined, and the annual increase in overall number of individuals with chronic HBV is slowing. Culturally-appropriate prevention efforts must target immigrant groups to encourage testing, monitoring, and treatment in order to reduce the substantial morbidity and mortality associated with progressive liver disease and liver cancer.

Chronic hepatitis B newly-identified cases and rates by year, B.C., 2000 – 2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BC HBV: Chronic Carriers	2653	2555	2322	1851	1573	1525	1410	1399	1307	1148
BC HBV: Chronic Carrier Rate	65.7	62.7	56.7	44.9	37.9	36.3	33.2	32.5	29.8	25.8

[23] BC Centre for Disease Control. Communicable Disease Prevention and Control Services

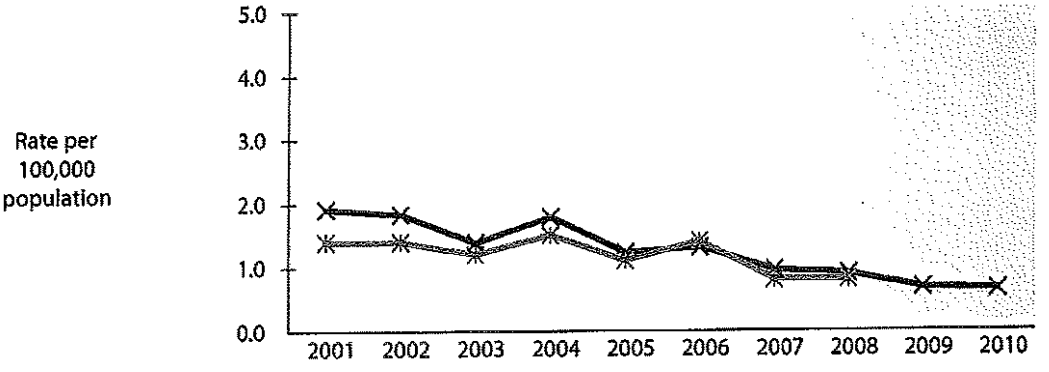
Indicator 7: Acute Hepatitis A cases[24]

Description: Acute HAV is a reportable infection in B.C. A large proportion of HAV cases are identified in persons who have travelled to countries where HAV is endemic. Although HAV vaccines are recommended to travelers, it is not publicly funded for this group.

Key Message:

The declining number of HAV cases can be attributed to the availability of a publicly funded vaccine for high-risk populations, which includes individuals who use injection drugs, men who have sex with men. There is post-exposure prophylaxis for those in contact with people infected with HAV to prevent transmission.

Acute hepatitis A cases in B.C., 2000-2009



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BC Hepatitis A Reports	78	75	57	74	51	55	41	39	30	29
BC Hepatitis A Rate	1.9	1.8	1.4	1.8	1.2	1.3	1.0	0.9	0.7	0.6
Canadian Hepatitis A Rate*	1.4	1.4	1.2	1.5	1.1	1.4	0.8	0.8		

[24] BC Centre for Disease Control. Communicable Disease Prevention and Control Services

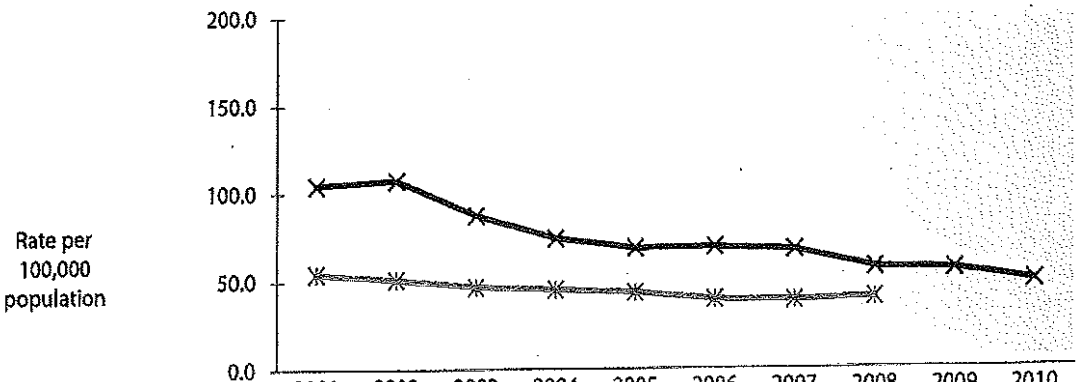
Indicator 8: Newly Identified Hepatitis C cases[25]

Description: HCV is a reportable infection in B.C. Newly identified cases of HCV infection may include persons who have been infected either recently or in the past but who have only been tested recently. Persons may be tested for HCV as a result of ongoing or past risk factors, insurance purposes, or symptoms of liver disease.

Key Message:

The annual number of newly identified HCV cases in B.C. declined modestly between 2008 and 2009. Although this rate remains above the Canadian rate, the diagnosis of HCV depends on availability and accessibility of testing.

Newly identified Hepatitis C cases in B.C., 2000-2009



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BC Hepatitis C Reports	4257	4396	3598	3080	2866	2928	2897	2496	2490	2223
BC Hepatitis C Rate	104.4	107.3	87.3	74.1	68.3	69.0	67.2	56.9	55.9	49.1
Canadian Hepatitis C Rate*	54.1	50.8	46.6	45.0	43.2	39.2	38.5	40.0		

Indicator 9: Healthcare costs associated with HCV infections[26]

Description: Laboratory testing data was linked with data on what health services were used and what drugs were dispensed. This linkage supported an analysis of health services utilization, mortality, mental illness, pharmaceuticals usage, and costs of care. A study of healthcare costs among HCV testers provided baseline costing information to compare over time and with other provinces.

Results:

- The estimated healthcare costs associated with HCV infection among a large group of B.C. HCV testers over a seven-year period are substantial;

[25] BC Centre for Disease Control. Communicable Disease Prevention and Control Services

[26] Krajden, M. et al. (2010) Healthcare Costs Associated with Hepatitis C: A Longitudinal Cohort Study. Can J Gastroenterol. 24(12):717-26

- The incremental HCV-related direct healthcare costs are $1,850 per patient per year during early infection, and $6,000 per patient per year during the later stages of the disease; and
- Provincial spending on HCV-related healthcare is approximately $136 million per year.

Key Messages:

This is the first step in developing real-time health surveillance indicators for B.C.'s vulnerable groups, and is important for evaluating the effectiveness of interventions targeting at-risk groups. Healthcare costs for HCV-infected individuals are driven by age, co-morbidities, mental illness, illegal substance use, and HIV co-infection.

Indicator 10: Evaluation of methadone use among HCV testers[27]

Description: Methadone use under the ***Methadone Maintenance Program*** was examined for a group of individuals who had also been tested for HCV infection. When compared to detoxification or no treatment, methadone maintenance therapy (MMT) significantly reduces opioid and other drug use, criminal activity, infectious disease risk behaviours and transmission, opioid overdose, and all causes of mortality. Methadone maintenance programs have been shown to protect people from acquiring infectious diseases and can also indirectly reduce the risk of infection to individuals who are not on methadone maintenance. When fewer people are infected, even if drug equipment is shared, the risk of transmission is reduced.

Results:

- Between 1992 and 2004, 8 per cent of individuals tested for HCV in B.C. were HCV positive (32,918 out of 404,941 individuals);
- Methadone was dispensed to 1 per cent of negative testers, and 21 per cent of positive testers (or 2.5 per cent (10,314) of all individuals tested for HCV);
- Of the 10,314 individuals who received methadone, 65 per cent (6,732) had a positive HCV test during the study period;
- At the time of MMT initiation, 70 per cent of the 10,314 had a known laboratory HCV status. Of this 70 per cent:
- 2,596 (36 per cent) were HCV negative at the first methadone dispensation.
- 4,638 (64 per cent) were HCV positive at the first methadone dispensation.
- 288 persons became HCV positive after MMT initiation.

Key Messages:

Of the individuals who enter the BC Methadone Maintenance Program, many are already infected with HCV; however, the fact that some participants become HCV positive while on MMT indicates missed prevention opportunities.

[27] Buxton, J. et al. (2010) Methadone Use in Relation to Hepatitis C Virus Testing in British Columbia. Can J Public Health. 101(6):491-4

Indicator 11: Rationalization of harm reduction supplies distribution[28]

Description: The distribution of harm reduction products in B.C. was measured and compared across Health Service Delivery Areas by tracking harm reduction products that are purchased and distributed by the PHSA and regional health authorities. Harm reduction products include needles, syringes, sterile water vials, alcohol swabs, condoms, and lubricant. This accounted for regional population and rates of HCV infection (as an indirect measure of injection drug use prevalence). The provincial supply and demand ratio for needle and syringe units was also estimated.

The key findings from the analysis of harm reduction products distribution data between 2004 and 2006

- This comparison indicates that there is wide variation in distribution by area. It also indicates that while some Health Service Delivery Areas had very high rates of product distribution despite their population and HCV rates, other areas received a relatively low number of products when compared to their population and HCV rates.
- The provincial supply distribution was estimated to meet 21.5 per cent of the total number of units required to cover all injections among those who use injection drugs in B.C.

Key Message:

The ordering and distribution of harm reduction product varies widely between health service delivery areas in B.C., and supply does not correspond with demand.

[28] Harvard, S.S., Hill, W.D.and Buxton, J.A. (2008) Harm Reduction Product Distribution in British Columbia. Can J Public Health 99(6):446-50.

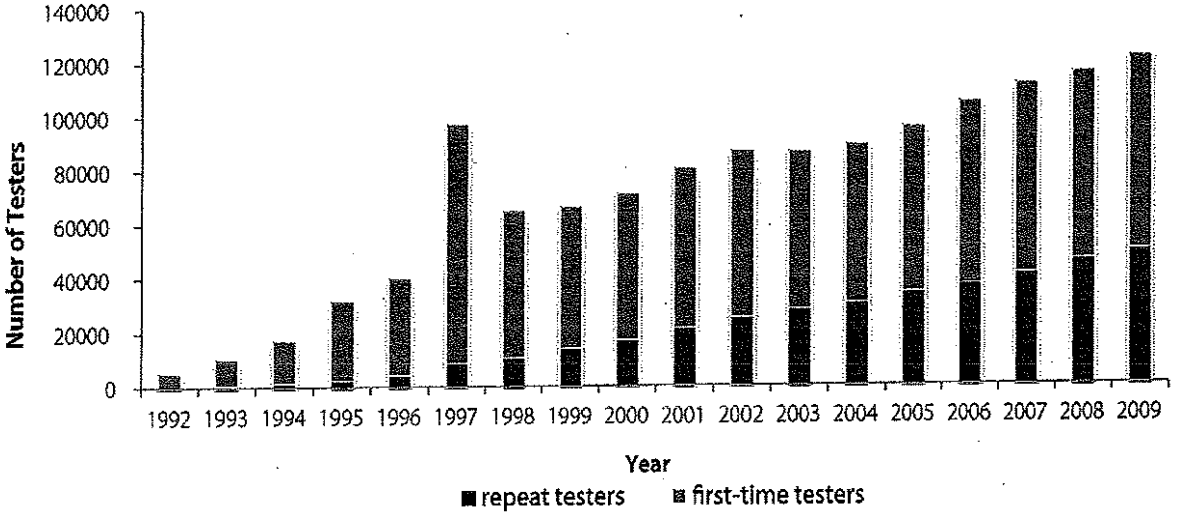
Indicator 12: Access to HCV testing[29]

Description: The number of individuals undergoing either first time or repeat testing provides an estimate of access to HCV testing among individuals at-risk for infection. Increased HCV testing has enhanced the province's ability to detect recently-acquired infections and estimate the number of individuals in B.C. who are living with HCV infection. Additionally, testing behaviour varies between males and females.

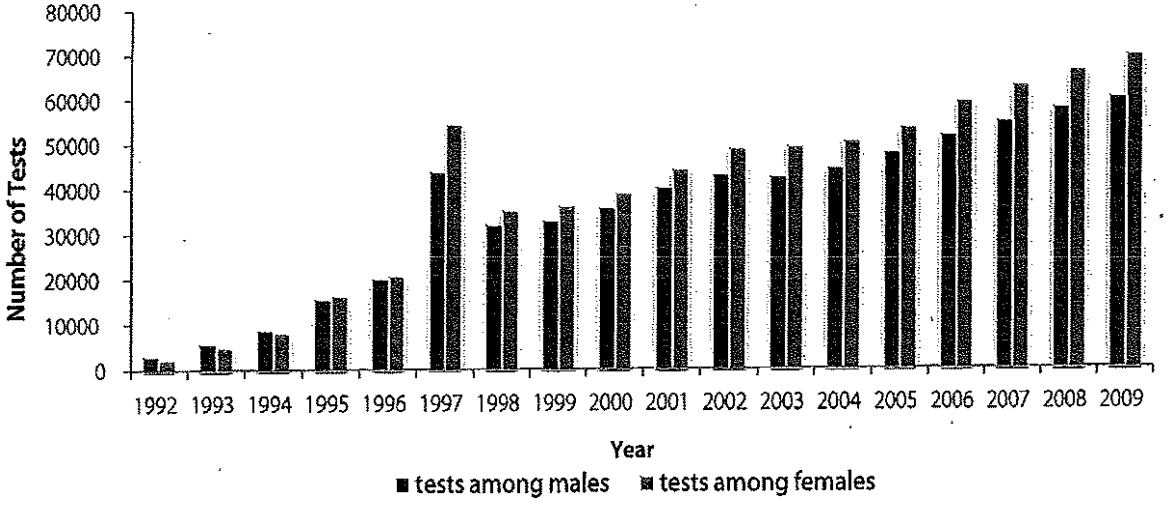
Key Message:

First-time and repeat HCV testing has increased, and females are testing more than males.

Annual number of first-time and repeat anti-HCV testers, B.C., 1992 – 2009



Annual number of anti-HCV testers, by sex, B.C., 1992 – 2009[30]



[29] BC Centre for Disease Control, Communicable Disease Prevention and Control Services

[30] BC Centre for Disease Control, Communicable Disease Prevention & Control Services

Indicator 13: Development of mortality indicators[31]

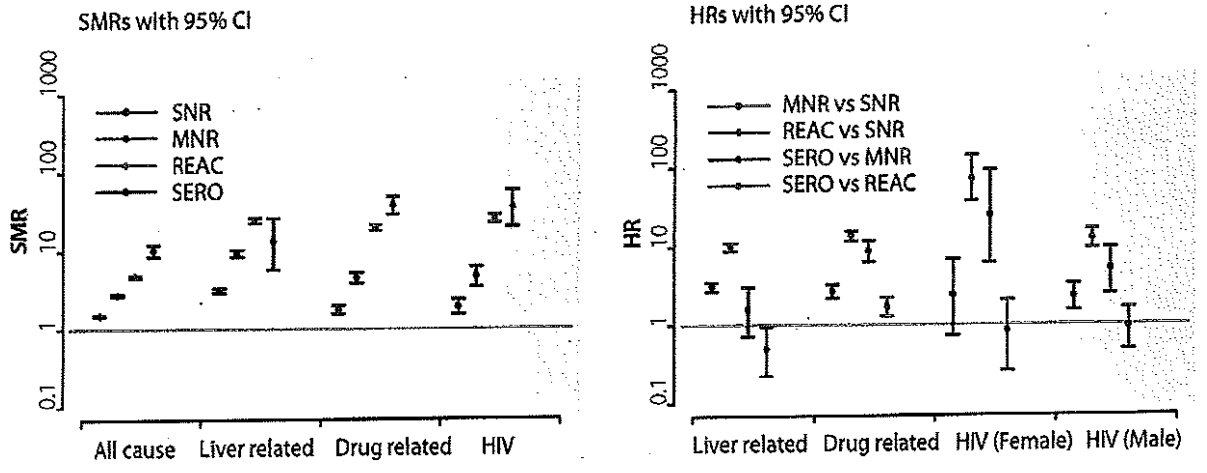
Description: Mortality was investigated among individuals who tested for HCV between 1992 and 2004. Four time-dependent risk groups were identified by their testing patterns and results. This study examined the key causes of death among the testing groups.

Key Messages:

Every category of HCV testers has a higher mortality risk than the general population in B.C. The increased mortality risk of HCV positive testers can be attributed to chronic infection from progressive liver disease and risk behaviours related to HCV acquisition. This includes injection drug use and HIV infection.

These risks will not be reduced by improvements in HCV treatment alone. The reduction of mortality risk in these individuals will require comprehensive prevention and harm reduction programming to reduce the impact of mental illness and problematic substance use behaviours. HCV treatment to prevent progression of chronic liver disease will also be necessary.

Standardized mortality ratios (SMRs) and hazard ratios (HRs) with 95 per cent confidence intervals (CI) among four categories of HCV testers, 1992 – 2004



SNR – single negative testers (one non-reactive anti-HCV test);

MNR - multiple negative testers (serial non-reactive anti-HCV tests);

REAC - first-time positive testers (baseline reactive anti-HCV test); and

SERO - seroconverters (non-reactive anti-HCV test followed by a reactive test), documenting incident infection

[31] BC Centre for Disease Control. Communicable Disease Prevention & Control Services

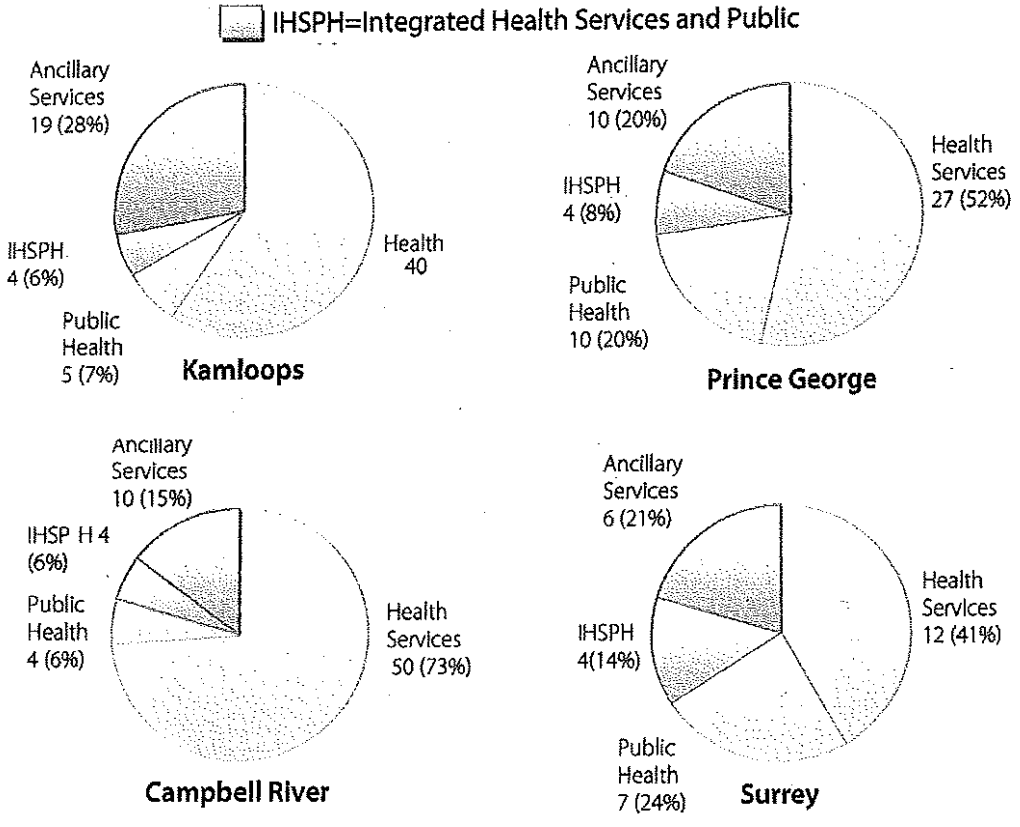
Indicator 14: Partnership structure and functioning[32]

Description: Four nurse-led integrated HCV prevention and care projects in B.C. were evaluated based on program development and composition, partnership structure and functioning, and client and/or population reach.

Key Message:

Partnerships, including a diverse set of service providers, are fundamental to providing comprehensive disease-management and support for individuals living with HCV.

Number and Distribution of Partners in the Demonstration Projects by Partner Category



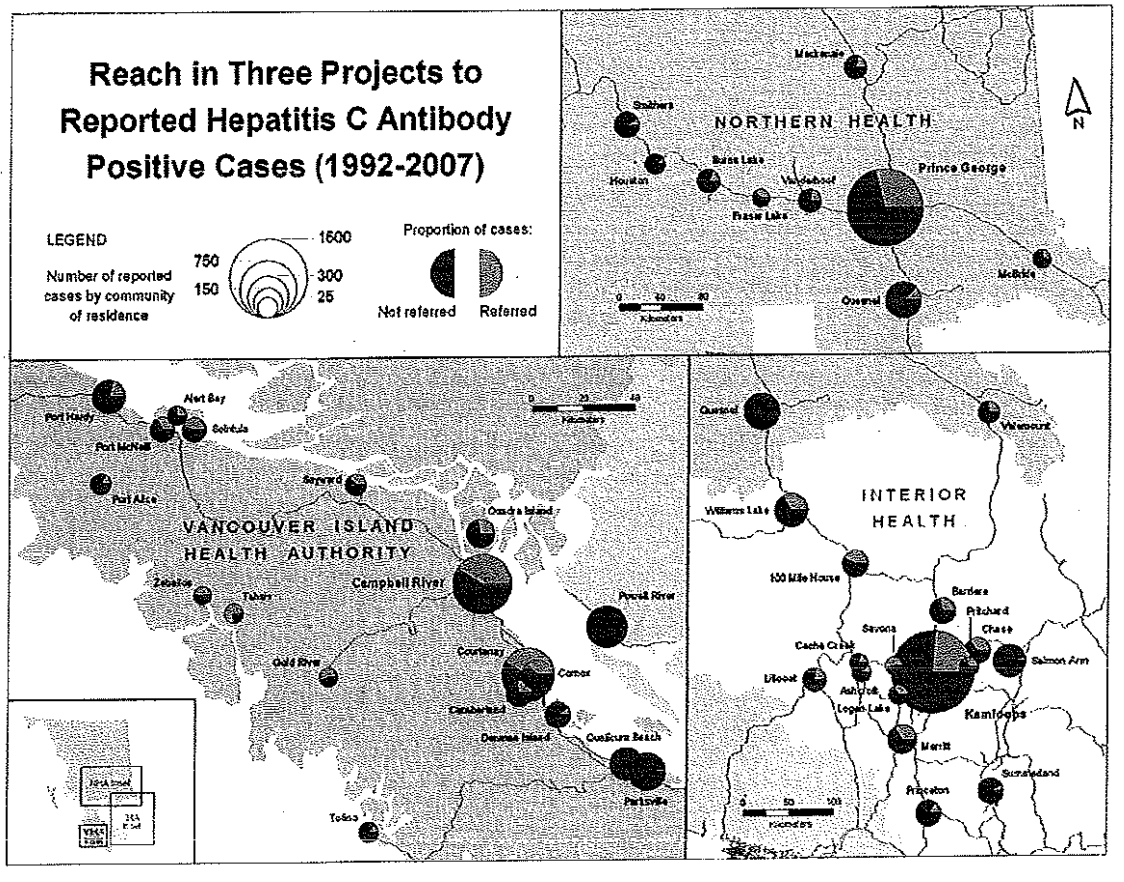
[32] Butt, G. (2009) *Partnership and Population Outcome Relationships in Four Nurse-Led Hepatitis C Integrated Prevention and Care Projects.* Masters thesis.

Indicator 15: Client and population reach[33]

Description: Evaluation of the integrated prevention and care projects showed that, on average, 25 per cent of individuals with HCV had been referred into specialist care since the projects began providing services. Kamloops began providing services in 2001; Prince George and Campbell River began in 2002; and Surrey (not shown) began in 2004. The maps below demonstrate the extent to which the projects covered rural and remote areas, which was one of the projects' main objectives. A review of client referrals from each year of project operation suggests that each project site began operations with a large proportion of its clients residing in the project clinic community. Over time, however, program reach expanded to reach adjacent and remote communities.

Key Messages:

The projects provided people with local access and reached a significant number of individuals in smaller urban, rural and remote areas. Given that the literature suggests that few individuals infected with HCV ever get referred for specialty assessment, these findings are remarkable.



[33] Butt, G. (2009) *Partnership and Population Outcome Relationships in Four Nurse-Led Hepatitis C Integrated Prevention and Care Projects 2009*. Masters thesis.

King, Jessica HLTH:EX

From: Docs Processing HLTH:EX
Sent: Thursday, September 20, 2012 9:26 AM
To: Manning, John HLTH:EX
Cc: Docs Processing HLTH:EX
Subject: RUSH PO Request for Info on Hepatitis in BC (Cliff 942867/DMA Log #8)
Attachments: 942867 - Viral Hepatitis Update.docx

Hi John:

The attached briefing document has been prepared in response to your request below. This info has been approved by Arlene Paton, ADM, Elaine McKnight, CAO, and by Graham Whitmarsh.

Thanks,

Kathy Simonson
Program Coordinator / Documents Processing Unit / Ministry of Health
5-2 1515 Blanshard St, Victoria BC V8W 3C8
Telephone 250 952-1811

kathy.simonson@gov.bc.ca

From: Manning, John HLTH:EX
Sent: Monday, September 10, 2012 1:33 PM
To: Docs Processing HLTH:EX
Subject: Re: RUSH - for PO

That's fine, thanks!

John Manning
Ministerial Assistant
Office of the Hon. Margaret MacDiarmid
Minister of Health
Province of British Columbia

T: 250.953.3547
F: 250.356.9587

From: Docs Processing HLTH:EX
Sent: Monday, September 10, 2012 01:14 PM
To: Manning, John HLTH:EX
Cc: Docs Processing HLTH:EX
Subject: RUSH - for PO

I will try to get the info to you by Friday? Is that deadline ok?

Thanks,

Kathy

From: Manning, John HLTH:EX
Sent: Monday, September 10, 2012 11:37 AM
To: Docs Processing HLTH:EX
Subject: RE: RUSH - for PO

Yup – what do we currently do to combat Hepatitis in BC. What statistics are available as well. Thanks!

John Manning | Ministerial Assistant
Office of the Honourable Margaret MacDiarmid
Minister of Health
Province of British Columbia
T: 250.953.3547 | F: 250.356.9587

From: Docs Processing HLTH:EX
Sent: Monday, September 10, 2012 11:35 AM
To: Manning, John HLTH:EX
Cc: Docs Processing HLTH:EX
Subject: FW: RUSH - for PO

Is there anymore information? Are you are looking for treatment, prevention, immunization?

Thanks,

Kathy Simonson
Program Coordinator / Documents Processing Unit / Ministry of Health
5-2 1515 Blanshard St, Victoria BC V8W 3C8
Telephone 250 952-1811

kathy.simonson@gov.bc.ca

From: Manning, John HLTH:EX
Sent: Monday, September 10, 2012 10:22 AM
To: Docs Processing HLTH:EX
Subject: RE: RUSH - for PO

Also, is there information on the number of people diagnosed with Hepatitis in BC, of the various forms?

John Manning | Ministerial Assistant
Office of the Honourable Margaret MacDiarmid
Minister of Health
Province of British Columbia
T: 250.953.3547 | F: 250.356.9587

From: Manning, John HLTH:EX
Sent: Monday, September 10, 2012 10:20 AM
To: Docs Processing HLTH:EX
Subject: RUSH - for PO

Is there anything that can be provided explaining what programs are currently provided by the Ministry/HA's for hepatitis?

John Manning | Ministerial Assistant
Office of the Honourable Margaret MacDiarmid
Minister of Health
Province of British Columbia
T: 250.953.3547 | F: 250.356.9587

Howard, Leah K HLTH:EX

From: Henry, Effie HLTH:EX
Sent: Thursday, September 6, 2012 6:33 AM
To: John, Rebecca HLTH:EX; Bush, Donna HLTH:EX
Subject: Fwd: BREAST SCREENING DOCUMENTS FOR TRANSMISSION TO THE DEPUTY MINISTER
Attachments: Ltr Re Breast Screening to the DM 8 31 2012.pdf; ATT00001.htm; Current and Proposed Screening Recommendations rev (4)_Chia edits Final.pdf; ATT00002.htm; Breast Cancer Screening Review Comm TOR - revised Feb 8 2012 (3).pdf; ATT00003.htm; British CoBreast Cancer Screening Policy Review Committee PHSA presentation_Summary_082212 (2) (2).ppt; ATT00004.htm

Pl work with Kelly on bnote for approval of this - pl communication plan, etc.

Sent from my iPhone

Begin forwarded message:

> **From:** "Korabek, Barbara HLTH:EX" <Barbara.Korabek@gov.bc.ca>
> **Date:** 5 September, 2012 10:11:35 PM PDT
> **To:** "Henry, Effie HLTH:EX" <Effie.Henry@gov.bc.ca>, "Barnard, Kelly HLTH:EX" <Kelly.Barnard@gov.bc.ca>
> **Subject: Fw: BREAST SCREENING DOCUMENTS FOR TRANSMISSION TO THE DEPUTY MINISTER**

From: Schmidt, Brian [mailto:bschmidt@phsa.ca]
Sent: Wednesday, September 05, 2012 04:10 PM
To: Korabek, Barbara HLTH:EX
Cc: Chia, Stephen <SChia@bccancer.bc.ca>; Post, Robyn <rpost@phsa.ca>
Subject: FW: BREAST SCREENING DOCUMENTS FOR TRANSMISSION TO THE DEPUTY MINISTER

Hi Barb. Further to our recent discussion I am providing you with the materials I am suggesting would form the basis of a written submission and a presentation to the Deputy Minister of Health relating to the PHSA Board's recent decision to recommend to the MoH the approval of BC's revised Breast Health Screening Guidelines (2012).

The documents titled "Letter re Breast Screening to the DM", and "Current and Proposed Screening Recommendations" , and the "Terms of Reference" for the review, are the components of the letter from Lynda to the Deputy, on behalf of the Board, recommending the Guidelines to the Deputy Minister of Health for approval. You could print and transmit the letter and attachments to the Deputy on our behalf, or we could send it directly to him.

The letter to the Deputy states that the PHSA would be pleased to provide a presentation to the Deputy at his convenience. I am happy to let you know

that Dr. Steven Chia, who co-chaired the committee, and is chair of the BCCA Breast Cancer Tumour Group, is available to travel to Victoria to make a presentation to the Deputy. Stephen is available to make a presentation to the Deputy in Victoria on the following dates in September - September 11, 12, 20, 21, 25-28. The presentation he made to the Board is attached for your reference and I would recommend that the same presentation be made to the Deputy. I would suggest that Dr. Chia be accompanied to the presentation by Dr. Christine Wilson, Medical Director of the SMPBC, and Dr. Max Coppes (BCCA President).

As you know, Kelly Barnard and Sylvia Robinson were members of the Committee and could provide further information as required. Kelly and Sylvia have the evidence papers and meeting minutes that formed the basis of the Committee's work.

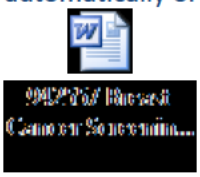
Thanks, and I look forward to hearing from you.

Brian

Howard, Leah K HLTH:EX

From: Robinson, Sylvia HLTH:EX
Sent: Thursday, September 6, 2012 12:40 PM
To: Barnard, Kelly HLTH:EX
Cc: Bush, Donna HLTH:EX
Subject: RE: 942557 Breast Cancer Screening Guidelines BNkb.doc

Looks good, one small suggested edit. I would like to see Nichola and Arlene get a copy of this. Would they automatically or does it need to be signalled somehow? Sylvia



From: Barnard, Kelly HLTH:EX
Sent: Thursday, September 6, 2012 12:35 PM
To: Robinson, Sylvia HLTH:EX
Cc: Bush, Donna HLTH:EX
Subject: 942557 Breast Cancer Screening Guidelines BNkb.doc

<< File: 942557 Breast Cancer Screening Guidelines BNkb.doc >>
Hi Sylvia, Donna has drafted this briefing note that I think captures things very well. I have made a couple of minor changes (attached) Could you please have a look to be sure we have covered our bases? We would like to get the package ready for the DM today. The appendix with the draft response letter is on its way as well.

Thanks ++
Kelly

MINISTRY OF HEALTH
INFORMATION BRIEFING DOCUMENT

Formatted: Left: 1.18", Right: 1.18", Top: 0.75"

Cliff # 942557

PREPARED FOR: Honourable Margaret MacDiarmid, Minister of Health – **FOR INFORMATION**

TITLE: **New Breast Cancer Screening Guidelines developed by the British Columbia Breast Cancer Screening Policy Review Committee**

PURPOSE: To advise Executive that new guidelines related to breast cancer screening have been developed and submitted to the Ministry for approval

BACKGROUND:
The Screening Mammography Program (SMP) is a provincial program established in 1988 that provides breast screening for women ages 40-79 to help ~~provide~~ with early detection of breast cancer. It is run by the BC Cancer Agency (BCCA) and Provincial Health Services Authority (PHSA) and operated in conjunction with clinical guidelines based on medical evidence.

In April 2010, the Provincial Health Services Authority (PHSA) launched its Provincial Breast Health Strategy (PBHS) to improve aspects of the breast cancer system. As part of this improvement, PHSA and the Ministry established a provincial British Columbia Breast Cancer Screening Policy Review Committee (see members list and terms of reference in Appendix A) to conduct a review of the current provincial breast cancer screening guidelines used by the SMP.

At the same time, the Canadian Task Force on Preventive Health Care (Task Force) released in November 2011, updated *Recommendations on Breast Cancer Screening* for women aged 40 to 74 who are at average risk of developing breast cancer. The Task Force is an independent panel of clinicians and methodologists within the Public Health Agency of Canada that make recommendations about clinical interventions aimed at prevention.[1]

Among other recommendations, the Task Force concluded that routine screening for women aged 40-49 leads to minimal decreases in breast cancer mortality, unneccessary diagnostic testing and high false positive rates. It therefore concluded that women in this age group should not be screened regularly.

BCCA's Current Breast Screening Guidelines
BCCA's current breast cancer screening guidelines recommend screening every 12 to 18 months for women aged 40 to 49. For women ages 50 to 79, the guidelines recommend screening every two years. Women outside these age groups may be referred to the SMP by their family physicians.

The current guidelines also recommend that all women over the age of 20 receive an annual physical examination of the breasts by their family physicians as a screening procedure and

[1] Information from http://www.canadiantaskforce.ca/recommendations/2011_01_eng.html Accessed January 24, 2012

as an opportunity to teach breast self-examination. At present, BCCA suggests that a woman may be encouraged to perform breast self-examination as well.

s.13

DISCUSSION:
The proposed changes to BCCA's breast cancer screening guidelines would bring BC more in line with the guidelines proposed by the Taskforce.

s.13

ADVICE:

s.13

See Appendix C for recommended response to PHSA from DM.

Program ADM/Division:	Barbara Korabek, ADM, Health Authorities Division
Telephone:	250-952-1049
Program Contact (for content):	Effie Henry, Executive Director – Hospital and Provincial Services Rebecca John, Director PHSA
Drafter:	Donna Bush, Team Lead PHSA
File Name with Path:	Y:\HAD General\Briefing Notes\2012\HPS\942557 Breast Cancer Screening Guidelines BN.doc

[2] Vancouver Sun (2011) New Canadian guidelines call for less breast cancer screening. Task Force found more than 2,100 women aged 40 to 49 would need to be screened regularly for an 11 year period to prevent one breast cancer death. At the same time, it would cause nearly 700 women to have a false-positive result.

Howard, Leah K HLTH:EX

From: Barnard, Kelly HLTH:EX
Sent: Thursday, September 6, 2012 4:10 PM
To: Bush, Donna HLTH:EX; Robinson, Sylvia HLTH:EX
Subject: 942557 Appendix C.docx

Appendix C

Recommended response to Lynda Cranston's letter from PHSA to Graham Whitmarsh

Dear Lynda:

Thank you very much for forwarding the new draft 2012 Breast Cancer Screening Guidelines for the Ministry's consideration.

As you are aware, there were two members of the Ministry on the BC Breast Cancer Screening Policy Review Committee, Dr. Kelly Barnard from the Health Authorities Division and Sylvia Robinson from Primary Health Care and Specialists Services; they have briefed me fully. The Ministry has an ongoing interest in the development of key communication materials, including items such as a decision aid, to be developed in the near future. Please continue to involve ministry staff in this work and they will keep me advised of the work of the committee as necessary.

Please thank the committee on my behalf for their hard work and dedication to this project. The Ministry will review the proposed recommendations and provide a decision to PHSA in the near future.

Sincerely,

Howard, Leah K HLTH:EX

From: Holland, Janet HLTH:EX
Sent: Friday, September 7, 2012 8:18 AM
To: Bush, Donna HLTH:EX
Subject: RE: 942557 Appendix C.docx

Will do.

From: Bush, Donna HLTH:EX
Sent: Friday, September 7, 2012 8:16 AM
To: Holland, Janet HLTH:EX
Subject: FW: 942557 Appendix C.docx

Hi Janet,
Effie said that she wants this letter from Graham to Lynda cliffed separately from the breast cancer guidelines cliff. Can you please do this up with a new cliff (xref'd) and with the proper letter template?
Thanks very much!
Donna

Donna Bush
Team Lead - PHSA
(250) 952-2176

From: Barnard, Kelly HLTH:EX
Sent: Thursday, September 6, 2012 4:10 PM
To: Bush, Donna HLTH:EX; Robinson, Sylvia HLTH:EX
Subject: 942557 Appendix C.docx

<< File: 942557 Appendix C.docx >>

MINISTRY OF HEALTH
INFORMATION BRIEFING DOCUMENT

Cliff # 942557

PREPARED FOR: Honourable Margaret MacDiarmid, Minister of Health –
FOR INFORMATION

TITLE: **New Breast Cancer Screening Guidelines developed by the British Columbia Breast Cancer Screening Policy Review Committee**

PURPOSE: To advise Executive that new guidelines related to breast cancer screening have been developed and submitted to the Ministry for approval

BACKGROUND:
The Screening Mammography Program (SMP) is a provincial program established in 1988 that provides breast screening for women ages 40-79 to help provide early detection of breast cancer. It is run by the BC Cancer Agency (BCCA) and Provincial Health Services Authority (PHSA) and operated in conjunction with clinical guidelines based on medical evidence.

In April 2010, the Provincial Health Services Authority (PHSA) launched its Provincial Breast Health Strategy (PBHS) to improve aspects of the breast cancer system. As part of this improvement, PHSA and the Ministry established a provincial British Columbia Breast Cancer Screening Policy Review Committee (see members list and terms of reference in Appendix A) to conduct a review of the current provincial breast cancer screening guidelines used by the SMP.

At the same time, the Canadian Task Force on Preventive Health Care (Task Force) released in November 2011, updated *Recommendations on Breast Cancer Screening* for women aged 40 to 74 who are at average risk of developing breast cancer. The Task Force is an independent panel of clinicians and methodologists within the Public Health Agency of Canada that make recommendations about clinical interventions aimed at prevention.[1]

Among other recommendations, the Task Force concluded that routine screening for women aged 40-49 leads to minimal decreases in breast cancer mortality, unneccessary diagnostic testing and high false positive rates. It therefore concluded that women in this age group should not be screened regularly.

BCCA's Current Breast Screening Guidelines
BCCA's current breast cancer screening guidelines recommend screening every 12 to 18 months for women aged 40 to 49. For women ages 50 to 79, the guidelines recommend screening every two years. Women outside these age groups may be referred to the SMP by their family physicians.

[1] Information from http://www.canadiantaskforce.ca/recommendations/2011_01_eng html
Accessed January 24, 2012

The current guidelines also recommend that all women over the age of 20 receive an annual physical examination of the breasts by their family physicians as a screening procedure and as an opportunity to teach breast self-examination. BCCA recommends women perform breast self-examination to identify any abnormalities over time.

Comment [k1]: The current wording is "may be encouraged"

s.13

DISCUSSION:

The proposed changes to BCCA's breast cancer screening guidelines would bring BC more in line with the guidelines proposed by the Taskforce.

s.13

ADVICE:

s.13

See Appendix C for recommended response to PHSA from DM.

Program ADM/Division:	Barbara Korabek, ADM, Health Authorities Division
Telephone:	250-952-1049
Program Contact (for content):	Effie Henry, Executive Director – Hospital and Provincial Services Rebecca John, Director PHSA

[2] Vancouver Sun (2011) New Canadian guidelines call for less breast cancer screening. Task Force found more than 2,100 women aged 40 to 49 would need to be screened regularly for an 11 year period to prevent one breast cancer death. At the same time, it would cause nearly 700 women to have a false-positive result.

Drafter: Donna Bush, Team Lead PHSA
File Name with Path: Y:\HAD General\Briefing Notes\2012\HPS\942557 Breast Cancer Screening Guidelines BN.doc

MINISTRY OF HEALTH
INFORMATION BRIEFING DOCUMENT

Cliff # 942557
PREPARED FOR: Honourable Margaret MacDiarmid, Minister of Health
- **FOR INFORMATION**

TITLE: New Breast Cancer Screening Guidelines developed by the British Columbia Breast Cancer Screening Policy Review Committee

PURPOSE: New guidelines related to breast cancer screening have been developed and submitted to the Ministry of Health (the Ministry) for approval

BACKGROUND:
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In April 2010, the PHSA launched its Provincial Breast Health Strategy to improve aspects of the breast cancer system. As part of this improvement, PHSA and the Ministry established a provincial BC Breast Cancer Screening Policy Review Committee (Appendix A) to conduct a review of the current provincial breast cancer screening guidelines used by the SMP.

At the same time, the Canadian Task Force on Preventive Health Care (Task Force) released in November 2011, updated *Recommendations on Breast Cancer Screening* for women aged 40 to 74 who are at average risk of developing breast cancer. The Task Force is an independent panel of clinicians within the Public Health Agency of Canada that make recommendations about clinical interventions aimed at prevention.[1]
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The current guidelines also recommend that all women over the age of 20 receive an annual physical examination of the breasts by their family physicians as a screening procedure and as an opportunity to teach breast self-examination. At present, BCCA suggests that a woman may be encouraged to perform breast self-examination as well.

[1] Information from http://www.canadiantaskforce.ca/recommendations/2011_01_eng html
Accessed January 24, 2012

s.13

DISCUSSION:

The proposed changes to BCCA's breast cancer screening guidelines would bring BC more in line with the guidelines proposed by the Task Force. s.13

s.13

Program ADM/Division:	Barbara Korabek, ADM, Health Authorities Division
Telephone:	250-952-1049
Program Contact (for content):	Effie Henry, Executive Director – Hospital and Provincial Services: Kelly Barnard, Senior Medical Consultant, HAD
Date:	September 11, 2012
Drafter:	Donna Bush, Team Lead PHSA
File Name with Path:	Y:\MCU\DOCS PROCESSING\Briefing Documents\2012\Approved\HAD\942557 Breast Cancer Screening Guidelines BN.doc

[2] Vancouver Sun (2011) New Canadian guidelines call for less breast cancer screening. Task Force found more than 2,100 women aged 40 to 49 would need to be screened regularly for an 11 year period to prevent one breast cancer death. At the same time, it would cause nearly 700 women to have a false-positive result.

Howard, Leah K HLTH:EX

From: Christians, Angela
Sent: Monday, September 17, 2012 4:18 PM
To: John, Rebecca HLTH:EX
Cc: Henry, Effie HLTH:EX; Bush, Donna HLTH:EX; Stevens, Valerie HLTH:EX
Subject: RE: FOR REBECCA: Priority 3 -- routine -- IN breast cancer screening reccs

Hi Rebecca,

Cindy has let us know that next Monday (September 24th) would be fine if that is a more suitable deadline?

As for approvals, our team will go to Kelly to get her approval but as Sylvia is in a different division GCPE would be contacting her separately so we will advise them she needs to review as well.

Angela Prinz
Manager, Health Authority Relations
Patient Safety & Care Quality Branch
Health Authorities Division | BC Ministry of Health
Telephone 250 952-1817 | Cell s. 17
Email | Angela.Prinz@gov.bc.ca

From: John, Rebecca HLTH:EX
Sent: Monday, September 17, 2012 3:58 PM
To: Prinz, Angela HLTH:EX
Cc: Henry, Effie HLTH:EX; Bush, Donna HLTH:EX
Subject: FW: FOR REBECCA: Priority 3 -- routine -- IN breast cancer screening reccs

Hi Angela – as discussed, I don't really want to "approve" anything on a final basis just yet. We are waiting for Minister response to the BN...once that happens, I presume we'll seek ADM, DM and GCPE advice on timing decision and we'll have to talk to BCCA. The timing needs to consider that there is a BCCA breast cancer forum on October 27th and they'll want to talk about the guidelines there if possible.

This will need review by me/Donna and by the 2 MoH reps on the expert committee...who are Sylvia Robinson and Kelly Barnard. Kelly is away until next week so they should not be considered final/approved until she sees them, unless we were to get sudden direction for a quick announcement in which case we'd expedite this note.

We'll look at in the next day or so.
Will you ensure the note gets routed to Kelly and Sylvia after we've looked at it or do you want us to share it round and get one set of comments?

Rebecca

From: Prinz, Angela HLTH:EX

Sent: Monday, September 17, 2012 3:34 PM
To: John, Rebecca HLTH:EX
Subject: FOR REBECCA: Priority 3 -- routine -- IN breast cancer screening reccs

Hey Rebecca,

Another one for your review please. If you could have any feedback back to me by **tomorrow at 2:00pm** that would be great!

Also, GCPE is looking for the timeline on going public?

Thanks!

Angela Prinz
Manager, Health Authority Relations
Patient Safety & Care Quality Branch
Health Authorities Division| BC Ministry of Health
Telephone 250 952-1817 | Cell s. 17
Email | Angela.Prinz@gov.bc.ca

From: MacDougall, Cindy GCPE:EX
Sent: Monday, September 17, 2012 3:30 PM
To: Prinz, Angela HLTH:EX; Stevens, Valerie HLTH:EX
Cc: May, Stephen GCPE:EX; Anderson, Kristy GCPE:EX; Jabs, Ryan GCPE:EX
Subject: Priority 3 -- routine -- IN breast cancer screening reccs

For fact-check and approval please. Also, what's the timeline on going public on these? Thanks.

<< File: IN_breast cancer screening reccs_sept 13 2012_DRAFT.docx >>

BC Breast Cancer Screening Policy Review Committee
Terms of Reference

Purpose

To review the BC Cancer Agency Breast Cancer Screening Policy and develop recommendations to the BCCA President & Executive Committee regarding screening for average risk women.

Policy Areas

- Age for screening mammography initiation and cessation, and screening interval
- Role of clinical breast exam (CBE) in screening
- Role of breast self-exam (BSE) in screening

Deliverables

- Written recommendations on the BC breast cancer screening policy
- Presentation to the BCCA President/Executive Committee & subsequent approval bodies as requested

1 RESPONSIBILITIES

Actions:	Target Date:
1. Review the Canadian Task Force on Preventative Health Care (CTFPHC) recommendations, the BC Evidence Paper (H. Krueger) and other evidence on breast cancer screening.	March 15, 2012
2. Review the current breast cancer screening policy and practice in BC and compare it to other provinces to ensure the committee understands "current state".	March 5, 2012
3. Invite Dr. Marcello Tonelli, Chair of the CTFPHC, to present to the Screening Review Committee on the national recommendations.	March 31, 2012
4. Invite other experts (as required) to present to the Screening Review Committee.	March 31, 2012
5. Develop written recommendations on the BC breast cancer screening policy.	April 5, 2012
6. Convene a forum to present the preliminary screening policy recommendations to the BCCA Breast Cancer Tumour Group and seek their feedback. The national recommendations will also be presented at the forum.	April 20, 2012
7. Prepare and present the final written recommendations to the BCCA President and Executive Committee.	May 11, 2012

2 MEMBERSHIP

CO-CHAIRS: Brian Schmidt – Interim President of BC Cancer Agency
Dr. Stephen Chia – Chair, BCCA Breast Tumour Group

MEMBERS: 6 members selected from the original PBHS Screening Policy Review Sub-Committee
6 members selected from the BCCA Breast Tumour Group

Members

- S. Chia (co-chair)
- B. Schmidt (co-chair)
- K. Barnard (MOH)
- J. Christilaw
- A. Coldman
- P. Gordon
- S. Robinson (MOH)
- L. Turner
- E. Wai
- C. Wilson

Mandate of the Committee

- Review the current policy for ages for screening mammography and frequency of screening intervals (within the context of current SMPBC performance parameters)
- Review the role/recommendation for routine clinical breast examination for primary screening
- Review the role/recommendation for routine self breast examination for primary screening

Cancer survival in Australia, Canada, Denmark, Norway, Sweden, and the UK, 1995–2007 (the International Cancer Benchmarking Partnership): an analysis of population-based cancer registry data

*M P Coleman, D Forman, H Bryant, J Butler, B Rachet, C Maringe, U Nur, E Tracey, M Coory, J Hatcher, C E McGahan, D Turner, L Marrett, M L Gjerstorff, T B Johannesen, J Adolfsson, M Lambe, G Lawrence, D Meechan, E J Morris, R Middleton, J Steward, M A Richards, and the ICBP Module 1 Working Group**

Summary

Background Cancer survival is a key measure of the effectiveness of health-care systems. Persistent regional and international differences in survival represent many avoidable deaths. Differences in survival have prompted or guided cancer control strategies. This is the first study in a programme to investigate international survival disparities, with the aim of informing health policy to raise standards and reduce inequalities in survival.

Methods Data from population-based cancer registries in 12 jurisdictions in six countries were provided for 2·4 million adults diagnosed with primary colorectal, lung, breast (women), or ovarian cancer during 1995–2007, with follow-up to Dec 31, 2007. Data quality control and analyses were done centrally with a common protocol, overseen by external experts. We estimated 1-year and 5-year relative survival, constructing 252 complete life tables to control for background mortality by age, sex, and calendar year. We report age-specific and age-standardised relative survival at 1 and 5 years, and 5-year survival conditional on survival to the first anniversary of diagnosis. We also examined incidence and mortality trends during 1985–2005.

Findings Relative survival improved during 1995–2007 for all four cancers in all jurisdictions. Survival was persistently higher in Australia, Canada, and Sweden, intermediate in Norway, and lower in Denmark, England, Northern Ireland, and Wales, particularly in the first year after diagnosis and for patients aged 65 years and older. International differences narrowed at all ages for breast cancer, from about 9% to 5% at 1 year and from about 14% to 8% at 5 years, but less or not at all for the other cancers. For colorectal cancer, the international range narrowed only for patients aged 65 years and older, by 2–6% at 1 year and by 2–3% at 5 years.

Interpretation Up-to-date survival trends show increases but persistent differences between countries. Trends in cancer incidence and mortality are broadly consistent with these trends in survival. Data quality and changes in classification are not likely explanations. The patterns are consistent with later diagnosis or differences in treatment, particularly in Denmark and the UK, and in patients aged 65 years and older.

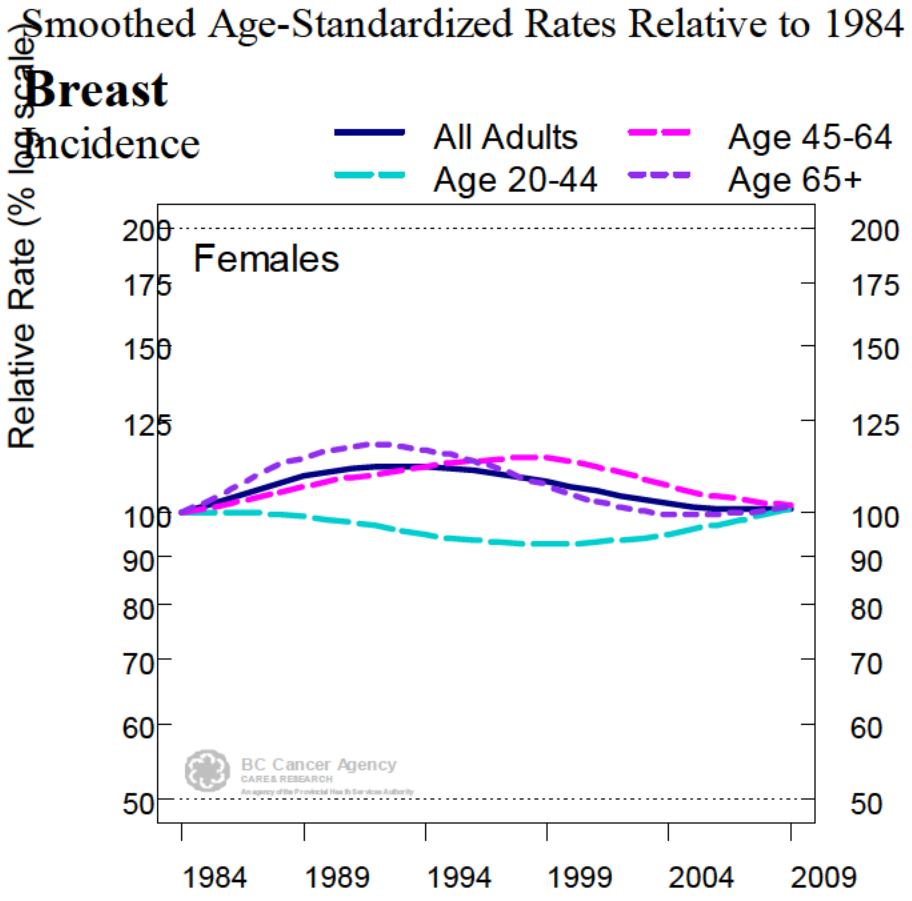
Funding Department of Health, England; and Cancer Research UK.

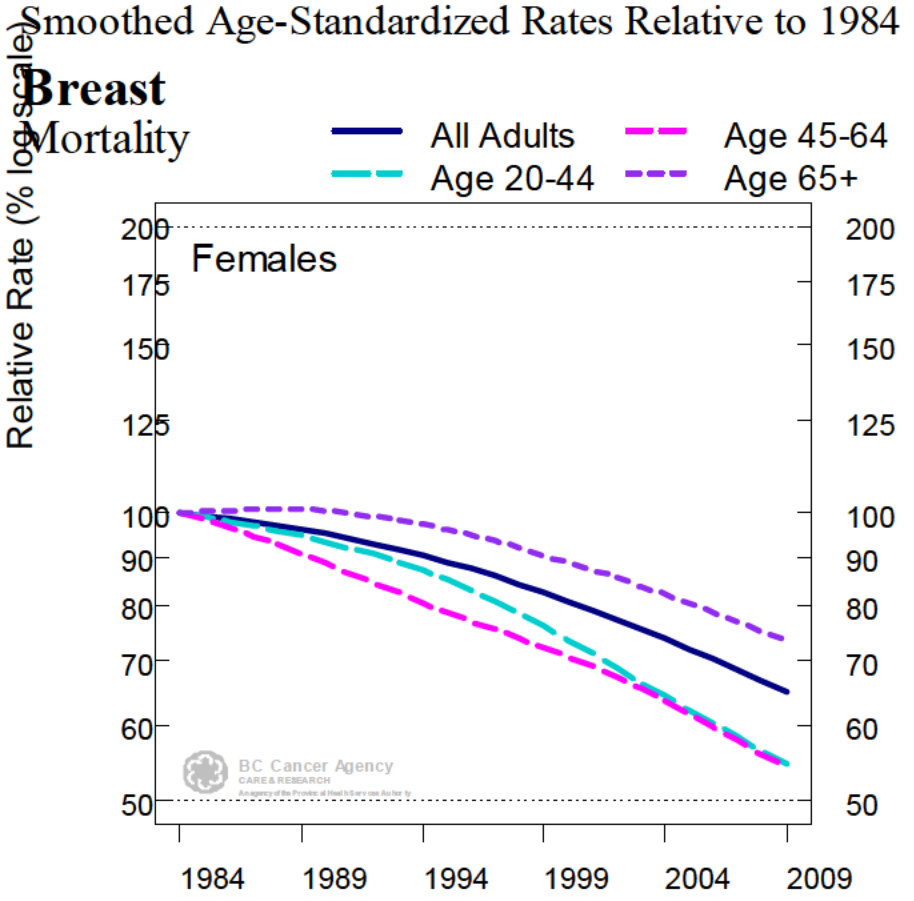
Published Online December 22, 2010 DOI:10.1016/S0140-6736(10)62231-3

*Members listed at end of Article

Cancer Research UK Cancer Survival Group, London School of Hygiene and Tropical Medicine, London, UK (Prof M P Coleman BM BCh, B Rachet PhD, C Maringe MSc, U Nur PhD); **Section of Cancer Information, International Agency for Research on Cancer, Lyon, France** (D Forman PhD); **Canadian Partnership Against Cancer, Toronto, ON, Canada** (Prof H Bryant MD); **Department of Health, London, UK** (J Butler MRCOG); **Cancer Institute New South Wales, Sydney, NSW, Australia** (E Tracey MPH); **Cancer Council Victoria, Melbourne, VIC, Australia** (M Coory PhD); **Alberta Health Services, Edmonton, AB, Canada** (J Hatcher PhD); **British Columbia Cancer Agency, Vancouver, BC, Canada** (C E McGahan MSc); **CancerCare Manitoba, Winnipeg, MB,**

Breast Cancer Incidence and Mortality Trends in BC





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Courtesy of Norm Phillips and Andy Coldman

Improving Survival Due to Screening and Adjuvant Treatment

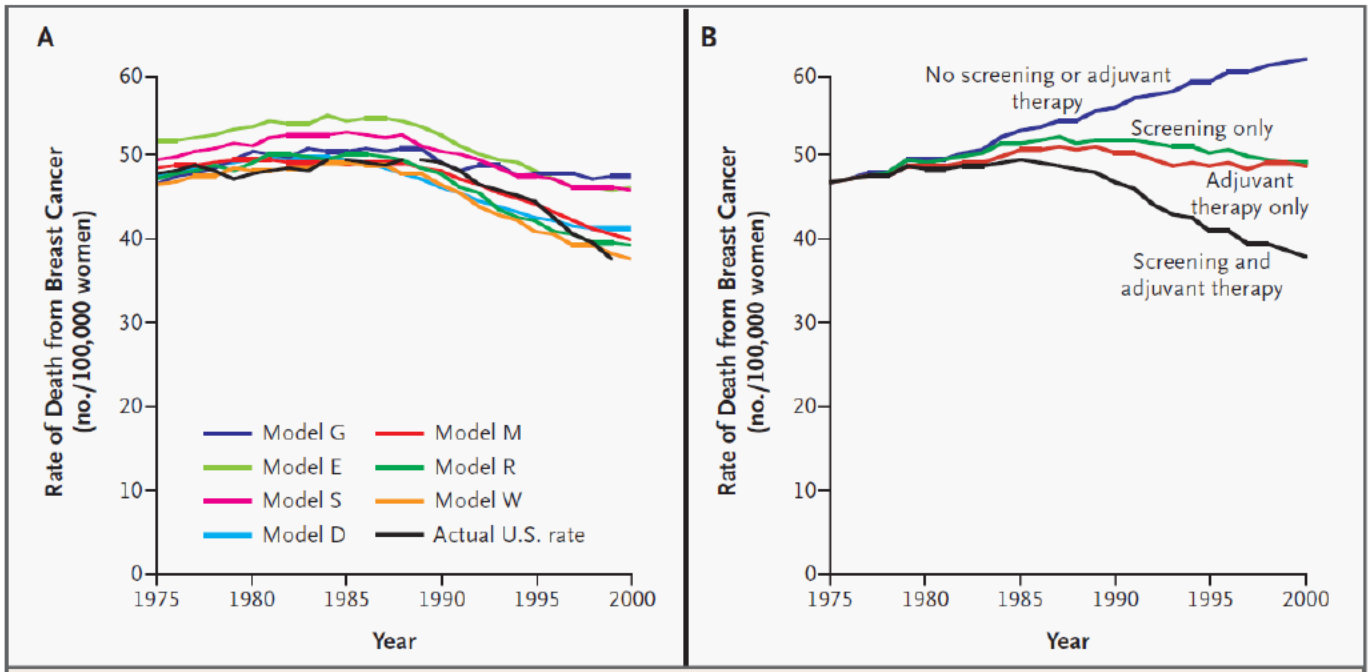

Figure 2. Estimated and Actual Rates of Death from Breast Cancer among Women 30 to 79 Years of Age from 1975 to 2000 (Panel A) and under Hypothetical Assumptions about the Use of Screening Mammography and Adjuvant Treatment (Panel B).

Panel A, which compares the model-based results with the actual rates in the United States from 1975 to 2000, shows the variability across the model estimates. Some of the models were calibrated according to the observed rate of death from breast cancer in the United States, and some were not. Panel B shows the results from model W (the University of Wisconsin–Madison) of estimated mortality trends for the four scenarios considered: no screening and no adjuvant treatment; base-case screening, but no adjuvant treatment; no screening, but base-case adjuvant treatment; base-case screening and adjuvant treatment. Rates in both panels are age-adjusted to the 2000 U.S. standard.

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CARE & RESEARCH

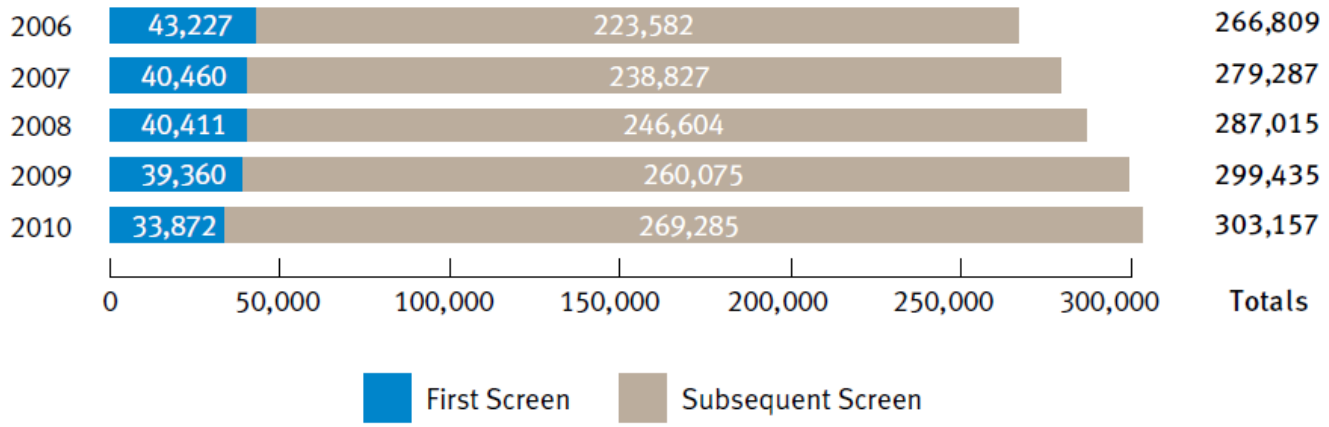
Berry DA, et al. N Engl J Med 2005;353:1984-92

SMPBC

- 1st organized breast cancer screening program in Canada
- 38 fixed screening centres and 3 mobile units
- Was implemented to be cost effective relative to screening through diagnostic centres
- Has quality assurance programs integrated
- Collection of data as part of the program
- Move to digital mammography throughout the province

SMPBC Screening Volumes

FIGURE 9.1: SMP ANNUAL SCREENING VOLUME YEARS: 2006 – 2010



NOTE: SMP data extraction date: August 2, 2011

SMP Outcome Indicators by 10-Year Age Groups: 2009

Outcome Indicators	Age at Exam					All
	40-49	50-59	60-69	70-79	80+	
Number of Exams	99,284	95,366	69,396	33,694	1,364	299,435
% first screens	25.4%	9.9%	4.8%	2.9%	6.9%	13.1%
Number of Cancers	217	377	429	251	19	1,293
% on first screens	34.6%	17.8%	10.3%	5.6%	10.5%	15.6%
Abnormal Call Rate	8.9%	7.2%	5.8%	5.7%	5.9%	7.3%
· on first screens	14.9%	16.7%	15.1%	13.7%	11.7%	15.3%
· on subsequent screens	6.8%	6.1%	5.3%	5.4%	5.5%	6.0%
Overall Cancer Detection Rate (per 1,000)	2.2	4.0	6.2	7.5	13.9	4.3
· on first screens	3.0	7.1	13.3	14.4	21.3	5.1
· on subsequent screens	1.9	3.6	5.8	7.2	13.4	4.2
DCIS Detection Rate (per 1,000)	0.7	1.0	1.2	1.5	1.5	1.0
· on first screens	0.6	1.4	4.2	5.1	0.0	1.2
· on subsequent screens	0.7	0 9	1.1	1.3	1.6	0.9
Positive Predictive Value of Screening Mammography	2.5%	5.5%	10.7%	13.3%	23.5%	6.0%
· on first screens	2.0%	4.3%	8.9%	10.9%	18.2%	3.4%
· on subsequent screens	2.8%	5.9%	10.9%	13.5%	24.3%	7.0%
Core Biopsy Yield Ratio	18.2%	33.6%	50.8%	57.2%	75.0%	36.0%
· on first screens	13.9%	23.4%	37.5%	55.0%	50.0%	20.4%
· on subsequent screens	22.7%	37.0%	52.8%	57.3%	80.0%	42.0%
Open Biopsy Yield Ratio	19.2%	23.3%	45.7%	49.2%	33.3%	30.3%
· on first screens	11.9%	19.6%	46.9%	42.9%	0.0%	19.5%
· on subsequent screens	24.0%	24.5%	45.6%	49.6%	33.3%	33.8%
Interval Cancer Rate (per 1,000)						
· 0-12 months	0.67	0.43	0.69	0.95	<0.01	0.62
after first screens	0.32	0.32	1.21	2.06	<0.01	0.43
after subsequent screens	0.78	0.44	0.67	0.92	<0.01	0.65
· 13-24 months	---	---	---	---	---	---
Sensitivity (i.e. 1 - false negative rate)	---	---	---	---	---	---
Specificity (i.e. 1 - false positive rate)	91.4%	93.2%	94.8%	95.1%	95.4%	93.2%

CTFPHC Breast Cancer Screening Recommendations

Box 2: Summary of recommendations for clinicians and policy-makers

Recommendations are presented for the use of mammography, magnetic resonance imaging (MRI), breast self-examination and clinical breast examination to screen for breast cancer (see Box 1). These recommendations apply only to women at average risk of breast cancer aged 40 –74 years. They do not apply to women at higher risk because of personal history of breast cancer, history of breast cancer in first-degree relatives, known mutations of the *BRCA1*/*BRCA2* genes or previous exposure of the chest wall to radiation. No recommendations are made for women aged 75 years and older, given the lack of data available for this group.

Mammography

- For women aged 40–49 years, we recommend not routinely screening with mammography. *(Weak recommendation; moderate-quality evidence)*
- For women aged 50–69 years, we recommend routinely screening with mammography every two to three years. *(Weak recommendation; moderate-quality evidence)*
- For women aged 70–74 years, we recommend routinely screening with mammography every two to three years. *(Weak recommendation; low-quality evidence)*

Magnetic resonance imaging

- We recommend not routinely screening with MRI scans. *(Weak recommendation; no evidence)*

Clinical breast examination

- We recommend not routinely performing clinical breast examinations alone or in conjunction with mammography to screen for breast cancer. *(Weak recommendation; low-quality evidence)*

Breast self-examination

- We recommend not advising women to routinely practice breast self-examination. *(Weak recommendation; moderate-quality evidence)*

CMAJ 2011;183(17):1991-2001

CTFPHC Breast Cancer Screening Review

Table 1: Summary of evidence of the benefits associated with using mammography to screen for breast cancer

	Quality assessment						Summary of findings: Deaths from breast cancer		Summary of findings: Effect			
No. of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Screening, no. (%)	Control, no. (%)	RR (95% CI)	Absolute (95% CI)	GRADE quality of evidence	Importance
Breast cancer mortality for ages 40–49 yr*												
8	Randomized trials†	Serious‡	No serious inconsistency§	No serious indirectness¶	No serious imprecision**	None††	*n = 152 300* 448 (0.29)	*n = 195 919* 625 (0.32)	0.85 (0.75–0.96)	474 fewer per 1 000 000 (from 115 to 792 fewer), NNS 2108	Moderate	Critical
Breast cancer mortality for ages 50–69 yr												
7	Randomized trials	Serious‡‡	No serious inconsistency§§	No serious indirectness¶	No serious imprecision**	None††	*n = 135 068* 639 (0.47)	*n = 115 206* 743 (0.64)	0.79 (0.68–0.90)	1 387 fewer per 1 000 000 (from 622 to 2 050 fewer), NNS 721	Moderate	Critical
Breast cancer mortality for ages 70–74 yr												
2	Randomized trials¶¶	Serious***	No serious inconsistency†††	No serious indirectness¶	Serious‡‡‡	None††	*n = 10 339* 49 (0.47)	*n = 7 307* 50 (0.68)	0.68 (0.45–1.01)	2 218 fewer per 1 000 000 (from 3 734 fewer to 39 more), NNS 451	Low	Critical

CMAJ 2011;183(17):1991-2001

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[Intervention Review]

Regular self-examination or clinical examination for early detection of breast cancer

Jan Peter Kösters[1], Peter C Gøtzsche[2]

[1]Nordic Cochrane Centre, Rigshospitalet, Dept. 7112, Copenhagen Ø, Denmark. [2]The Nordic Cochrane Centre, Rigshospitalet, Dept. 3343, Copenhagen Ø, Denmark

Contact address: Jan Peter Kösters, Nordic Cochrane Centre, Rigshospitalet, Dept. 7112, Blegdamsvej 9, Copenhagen Ø, 2100, Denmark. jpk@cochrane.dk.

Editorial group: Cochrane Breast Cancer Group.
Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 4, 2008.
Review content assessed as up-to-date: 8 October 2007.

Citation: Kösters JP, Gøtzsche PC. Regular self-examination or clinical examination for early detection of breast cancer. *Cochrane Database of Systematic Reviews* 2003, Issue 2. Art. No.: CD003373. DOI: 10.1002/14651858.CD003373.

ABSTRACT

Background

Breast self-examination and clinical breast examination have been promoted for many years as general screening methods to diagnose breast cancer at an early stage in order to decrease morbidity and mortality. The possible benefits and harms remain unclear.

Objectives

To determine whether screening for breast cancer by regular self-examination or clinical breast examination reduces breast cancer mortality and morbidity.

Search strategy

For this update, the Cochrane Breast Cancer Group Specialised Register, *The Cochrane Library* and PubMed were searched (October 2007).

Selection criteria

Randomised clinical trials, including cluster randomised trials.

Data collection and analysis

Decisions on which trials to include were taken independently by the authors based on the methods of a trial. Disagreements were resolved by discussion. Intention-to-treat analyses were conducted using a fixed-effect model with 95% confidence intervals.

Main results

Two large population-based studies (388,535 women) from Russia and Shanghai that compared breast self-examination with no intervention were included. There was no statistically significant difference in breast cancer mortality between the groups (relative risk 1.05, 95% confidence interval (CI) 0.90 to 1.24; 587 deaths in total). In Russia, more cancers were found in the breast self-examination group than in the control group (relative risk 1.24, 95% CI 1.09 to 1.41) while this was not the case in Shanghai (relative risk 0.97, 95% CI 0.88 to 1.06). Almost twice as many biopsies (3406) with benign results were performed in the screening groups compared to the control groups (1856) (relative risk 1.88, 95% CI 1.77 to 1.99). One large population-based trial of clinical breast examination combined with breast self-examination was also included. The intervention was discontinued because of poor compliance with follow up and no conclusions could be drawn.

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Risk Discussion Based on SMPBC Data

Table 2: Estimated number of women with adverse outcomes following screening mammography[12]

Adverse outcome	Women affected by age range, no.		
	40–49 yr	50–69 yr	70–74 yr
Per 1000 women screened			
False-positive result on mammogram	327	282	212
Unnecessary biopsy	36	37	26
Per single death prevented			
Number needed to screen	2108	721	451
False-positive result on mammogram	690	204	96
Unnecessary biopsy*	75	26	11

Note: Results are expressed per thousand women screened for a median of 11 yr (estimated as a total of 4 screening mammograms per woman assuming a screening interval of 2–3 yr). The period of 11 yr was chosen because it was the approximate median duration of follow-up during the randomized trials included in the systematic review. Data assume that rescreening rates stay constant over time.
*Percutaneous or surgical biopsies of the breast that were subsequently found not to have cancer.

SMPBC Data			
False positive result on mammogram	**260**	**280**	**160**
Unnecessary biopsy	**21**	**28**	**17**

Next Steps

- Meet with SMPBC in terms of operationalizing the recommendations
- Work with the SMPBC in the decision tool (aid) for health care professionals and patients
- Breast Tumour Group meeting – June 15, 2012
- BCCA Executive – July - Aug 2012
- PHSA Executive – July - Aug 2012
- PHSA Board – August 2012
- MOH presentation
- SMPBC Forum – October 27, 2012
- BCMJ publication

Next Steps

- Working group of SMPBC and BTG members to consider additional higher than average risk groups that may benefit from annual screening (timeline to be defined)
- Working group to develop education materials for primary health care providers and patients

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An agency of the Provincial Health Services Authority

Current and proposed Breast Cancer Screening Recommendations 2012

Preamble

The Canadian Task Force on Preventive Health Care (CTFPHC) presented its recommendations for breast cancer screening in average risk women aged 40-74 years in 2011. An expert advisory group was constituted to review these in the context of the current screening program in BC. This committee included leading representatives from the BC Cancer Agency, Women's Hospital, Ministry of Health and the British Columbia Breast Tumor Group with representation as well from the sub-specialties of Radiology, Surgical Oncology, Radiation Oncology and Medical Oncology. Our review was based on the premise of accepting the evidence review performed and published by the CTFPHC and not include lower level evidence (such as observations studies) in terms of efficacy. We however would consider the performance of the Screening Mammography Program of BC (SMPBC) in terms of adverse outcomes (e.g. false positive mammogram, unnecessary biopsy) s.13

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Current and Proposed Screening Recommendations

August 23, 2012

(subject to approval of the Ministry of Health)

Current	Canadian Task Force	Proposed
High Risk Groups in Women Under Age Forty A woman with two or more first-degree relatives with premenopausal or bilateral breast cancer is at particularly high risk and should be referred for genetic counseling and assessment for hereditary cancer. The Hereditary Cancer Program is a joint activity of the B.C. Cancer Agency and the Provincial Medical Genetics Program. Some families, accounting for perhaps up to 10% of breast cancers, may be carriers of specific genetic mutations. Testing is available for families at risk of mutations in BRCA1 or BRCA2. These women are candidates for programs of special surveillance. Women at high risk should be referred to the Hereditary Cancer Program. A woman with a sister or mother with bilateral breast cancer would be at four-fold risk of breast cancer, if the case were postmenopausal or nine-fold if the case were premenopausal. This person would be at even higher risk if, in addition to the family history, she had a family history of ovarian cancer or male breast cancer, or was of Ashkenazi Jewish heritage.	**High Risk Groups in Women Under Age Forty** **Not covered in CTFPHC review or recommendations**	s.13

Breast Self-examination Women may be encouraged to do regular breast self-examination (BSE). For premenopausal women this is best done in the week following the menstrual period. For postmenopausal women a specific day of the month should be chosen. The examination should include inspection of the breast and palpation of the breast and axilla. To perform adequate BSE the patient needs instruction in the technique and the manner in which she is carrying this out. This should be checked at subsequent examinations by her family physician. There is no evidence that BSE improves survival, but regular self-examination does allow a woman to know her own body and therefore she may recognize changes early.	**Breast self-examination** • We recommend not advising women to routinely practice breast self examination. *(Weak recommendation; moderate-quality evidence)*	**Breast Self-Examination** s.13
Family Physician The combination of physical examination by a physician and mammographic screening has been shown to reduce mortality from breast cancer. The relative importance of the physical examination relative and separate from the mammogram remains unclear. It is recommended that all women over the age of 20 years receive an annual physical examination of the breasts by their family physician both as a screening procedure and as an opportunity to teach breast self-examination. Ten percent of breast cancers will not show up on a mammogram in older women, but as many as 25-30% of breast cancers are not seen on screening mammograms in women age 40 to 49.	**Clinical breast examination** We recommend not routinely performing clinical breast examinations alone or in conjunction with mammography to screen for breast cancer. *(Weak recommendation; low-quality evidence)*	

Age<40 Family physicians may wish to refer women age <40 with a strong family history of breast cancer (*i.e. two or more family members*), to be screened at the SMPBC. These women may also benefit from discussion of breast cancer risks including genetic counseling and testing. Screening mammography is only one component of care for these higher risk families. The SMPBC asks that **each** screening exam for women age <40 be arranged by family physicians with a radiologist at the SMPBC centre of choice.	***Age<40***	***Age<40***
Age 40-49 Women ages 40 -49 are eligible for screening. There has been discussion about the risks and benefits, including the decreased sensitivity of mammography in women this age with dense breasts but the recommendations from the Breast Tumour Group and the SMPBC is that there are benefits to screening. Although the ***sojourn*** time *(the time during which a breast cancer is potentially detectable),* may be shorter in women between 40 – 49, there is not clear evidence at this time for annual screening, so women are encouraged to attend at least every 24 months.	***Age 40-49*** For women aged 40–49 years, we recommend not routinely screening with mammography. *(Weak recommendation; moderate-quality evidence)*	s.13
Age 50-79 Research studies show that 25-40% fewer breast cancer deaths can be expected in women if they have **regular** screening mammograms over the age of 50. To achieve this, at least 70% of eligible women in this age group must have **regular** screening mammography. The SMPBC recommends that women age 50-79 have a screening mammogram at least every 24 months and will actively re-invite women to attend.	***Age 50-79*** For women aged 50–69 years, we recommend routinely screening with mammography every two to three years. *(Weak recommendation; moderate-quality evidence)*	

Age 80+ Family physicians may wish to refer women age 80+ in good general health for screening at the SMPBC. The possible benefits of screening mammography in light of other potential health concerns at this age should be discussed with the women. Therefore, the SMPBC asks that **each** screening exam for women age 80+ be referred by family physicians to the SMPBC centre of choice.	***Age 70 - 74*** For women aged 70–74 years, we recommend routinely screening with mammography every two to three years. *(Weak recommendation; low quality evidence)* ***Age 75 +*** No recommendations are made for women aged 75 years and older, given the lack of data available for this group.	**Mammography age 75+ years old**
Other High Risk Groups There is evidence that women with dense breasts have a higher risk of breast cancer and it is not clear if annual mammography is warranted in this group. The SMPBC is proposing a provincial system for rating density according to the BIRADS system, with the intention of identifying and recalling women with dense breasts who may be at increased risk for annual screens. Similarly, it is not clear if women on hormone replacement therapy or women with a family history of breast cancer should have more frequent screens and this is being assessed, but some of these women, particularly if they also have dense breasts, may benefit from annual screening. For women who had radiation for Hodgkin's disease or other childhood cancers, screening may be indicated earlier due to the high risk of breast cancer, particularly if the radiation occured in teens or early 20s (annual mammography for women beginning 10 years after diagnosis of Hodgkin's lymphoma	***Other High Risk Groups*** Recommendations are presented for the use of mammography, magnetic resonance imaging (MRI), breast self-examination and clinical breast examination to screen for breast cancer (see Box 1). These recommendations apply only to women at average risk of breast cancer aged 40 –74 years. They do not apply to women at higher risk because of personal history of breast cancer, history of breast cancer in first-degree relatives, known mutations of the	s.13

or at age 40 years, whichever comes first).	*BRCA1/BRCA2* genes or previous exposure of the chest wall to radiation.	
Other Methods There has been considerable interest in methods of detection of non-palpable abnormalities in the breast that do not use ionizing radiation. Such methods include thermography, U/S (ultrasound) and diaphanography, but in the screening of asymptomatic women none of these techniques approach the sensitivity or the specificity of mammography and cannot be recommended at the present time as the sole screening method. Ultrasound may be very useful, in conjunction with mammogram, for diagnosis of (to assess) breast lesions, and in that situation is part of the workup of a mass. However, in the absence of any abnormality on physical examination or mammogram, U/S is not required, is not a validated screening method, and is not funded by MSP. MRI (magnetic resonance imaging) is being studied in high-risk women with identified genetic mutations to see if it can add to their screening. At this time there are no studies showing a survival benefit using MRI screening, but there are studies suggesting its value in women with identified mutations as an additional study.See clinical guidelines for MRI.	We recommend not routinely screening with MRI scans. *(Weak recommendation; no evidence)*	s.13

Provincial Health Services Authority
Province-wide solutions. Better health.

August 31, 2012

Graham Whitmarsh
Deputy Minister of Health
Ministry of Health
5-3, 1515 Blanshard Street
Victoria, BC V8W 3C8

Dear Graham,

Re. 2012 Breast Cancer Screening Guidelines Review for British Columbia

Background

The Canadian Task Force on Preventative Health Care (CTFPHC) recently reviewed the evidence on breast cancer screening and developed recommendations to primary care physicians for screening mammography. In November 2011, they released their recommended guidelines and they were published in the Canadian Medical Association Journal (CMAJ).

The Task Force reviewed the evidence of the benefit of the screening tests; Clinical Breast examination (performed by a health professional), breast self examination (performed by the woman), mammography and magnetic resonance imaging. The task force concluded that there was evidence that mammography reduced deaths from breast cancer in women age 40 – 74 and that MRI was supported in high risk women (evidence of genetic predisposition) but that sufficient evidence was lacking for the other tests.

Consequently the Task Force recommendations for average risk women aged 50 – 74 years were that routine screening be provided every 2 to 3 years. They recommended screening not be provided "routinely" to average risk women aged 40-49 years but that if women elected to receive it then it should be provided every 2 – 3 years. In addition, they recommended against routinely screening with MRI scans, performing clinical breast examinations (CBE) and breast self-examination (BSE) alone or in conjunction with mammography to screen for breast cancer.

BC's Breast Cancer Screening Review Process and Recommendations

In the fall of 2010, a review of the BCCA's Breast Cancer Screening Policy was undertaken as part of the Provincial Breast Health Strategy (PBHS). However, given that the Canadian Task Force (CTFPHC) recommendations were yet to be released it was decided by the MoH and BCCA to reconvene a Screening Policy Review Committee to review and update BC's current policy and practice once the Task Force guidelines were received. The last major change in British Columbia's Breast Cancer Screening Guidelines had been in 1996/7. The Provincial Review was undertaken to ensure that British Columbia's current guidelines continue to be evidence based and to take advantage of new knowledge and recommendations coming from the Canadian Task

Force. A BC committee was formed and its first meeting was held on February 27, 2012. The membership of the committee was comprised of membership from the original 2010 PBHS review committee and 6 members from the BCCA Breast Tumour Group. Two representatives from the Ministry of Health were on the committee.

The Terms of Reference of the Breast Cancer Screening Review Committee, including membership, are attached to this letter. The deliverables outlined in the Terms of Reference have been substantially met.

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Howard, Leah K HLTH:EX

From: John, Rebecca HLTH:EX
Sent: Thursday, September 20, 2012 8:22 AM
To: Bush, Donna HLTH:EX; Barnard, Kelly HLTH:EX; Robinson, Sylvia HLTH:EX
Subject: FW: Breast cancer BN 942557

Latest...

From: Henry, Effie HLTH:EX
Sent: Wednesday, September 19, 2012 6:33 PM
To: Hagerman, Shannon GCPE:EX
Cc: John, Rebecca HLTH:EX
Subject: Fwd: Breast cancer BN 942557

Looks like we are good to go on this. The release/ announcement should come from PHSA (since they are clinical guidelines) with comment/ support from us. Can you work with them on the communications and see what DMO/MO prefers around timing? Oct may not be ideal as we discussed last nite.

Sent from my iPhone

Begin forwarded message:

> **From:** "Fisher, Kiersten D HLTH:EX" <Kiersten.Fisher@gov.bc.ca>
> **Date:** 19 September, 2012 5:34:17 PM PDT
> **To:** "Henry, Effie HLTH:EX" <Effie.Henry@gov.bc.ca>
> **Cc:** "Stevens, Valerie HLTH:EX" <valerie.stevens@gov.bc.ca>, "John, Rebecca HLTH:EX" <Rebecca.John@gov.bc.ca>
> **Subject: Fw: Breast cancer BN 942557**
>
> FYI - looks like we're good to go on this
>
> ---
>
> **From**: Foran, Grace E HLTH:EX
> **Sent**: Wednesday, September 19, 2012 05:16 PM
> **To**: Fisher, Kiersten D HLTH:EX
> **Subject**: RE: Breast cancer BN 942557
>
> The BN went over for the Minister's information – so it's unlikely unless we specifically followed up with the MO that we'd get any feedback from the Minister on the same. You can rest assured that GCPE will be consulting with Minister MacDiarmid as part of any communications work that they plan on this matter.
>
> ---
>
> **From:** Fisher, Kiersten D HLTH:EX
> **Sent:** Wednesday, September 19, 2012 3:57 PM
> **To:** Foran, Grace E HLTH:EX
> **Subject:** FW: Breast cancer BN 942557
>
> Grace, need a little clarification on this. GCPE wants to move on planning release of the new guidelines. BN was prepared for Minister, but cliff log indicates DM approved, BN has been returned for filing and it

has been emailed to the MO... do we need to wait for MO direction or can GCPE take DM's approval and run with it?

Thanks,
Kiersten

From: Hardy, Doreen M HLTH:EX
Sent: Wednesday, September 19, 2012 8:44 AM
To: Fisher, Kiersten D HLTH:EX
Subject: RE: Breast cancer BN 942557

Hi Kiersten,

The log is closed and this is the final entry in Cliff from Kathy:

2012/09/14T09:41 ksimonso (Docs Processing)DM approved. Emailed to MO. Fldr returned to HAD for filing.

Doreen Hardy
Correspondence Consultant / Patient Safety & Care Quality
Health Authorities Division / Ministry of Health
5th Floor, 1515 Blanshard St / 250 952-3134

From: Fisher, Kiersten D HLTH:EX
Sent: Wednesday, September 19, 2012 8:24 AM
To: Hardy, Doreen M HLTH:EX
Subject: FW: Breast cancer BN 942557

Sorry to be a pain, but can you check on this again for me? GCPE is anxious for approval and I may need to ask the DMO to follow-up with the MO.

Thanks,
Kiersten

From: Hardy, Doreen M HLTH:EX
Sent: Thursday, September 13, 2012 2:26 PM
To: Fisher, Kiersten D HLTH:EX
Subject: RE: Breast cancer BN 942557

Hi Kiersten,

The BN and letter are both still on the DM's sharepoint site.

Doreen Hardy
Correspondence Consultant / Patient Safety & Care Quality
Health Authorities Division / Ministry of Health
5th Floor, 1515 Blanshard St / 250 952-3134

From: Fisher, Kiersten D HLTH:EX
Sent: Thursday, September 13, 2012 2:14 PM
To: Hardy, Doreen M HLTH:EX
Subject: FW: Breast cancer

Any word on this one?

Thanks,
Kiersten

From: Korabek, Barbara HLTH:EX
Sent: Thursday, September 13, 2012 12:49 PM
To: Fisher, Kiersten D HLTH:EX
Subject: Fw: Breast cancer

Can you flag graham office where this is

From: Jabs, Ryan GCPE:EX
Sent: Thursday, September 13, 2012 12:47 PM
To: Hagerman, Shannon GCPE:EX; Henry, Effie HLTH:EX
Cc: Korabek, Barbara HLTH:EX; Porter, Rodney GCPE:EX
Subject: RE: Breast cancer

I just forwarded it to Shannon.

Ryan Jabs
Manager, Media Relations and Issues Management
Ministry of Health Communications
Government Communications and Public Engagement
(250) 952-3387
Cell: (250) s. 17
Ryan.Jabs@gov.bc.ca

From: Hagerman, Shannon GCPE:EX
Sent: Thursday, September 13, 2012 12:43 PM
To: Henry, Effie HLTH:EX
Cc: Korabek, Barbara HLTH:EX; Porter, Rodney GCPE:EX; Jabs, Ryan GCPE:EX
Subject: Breast cancer

Can you re-send me the BN on the breast cancer screening guidelines, and what stage this is in? October is breast cancer awareness month. We should discuss timing of this.

Shannon Hagerman
Director of Communications, Ministry of Health
Government Communications & Public Engagement
Government of British Columbia | 1515 Blanshard St.
T: 250-952-1889I C: s. 17 **I E: shannon.hagerman@gov.bc.ca**

Not responsive

From: Bedford, Sue HLTH:EX
Sent: Wednesday, September 12, 2012 3:41 PM
To: Williams, Dawn HLTH:EX
Cc: Brown, Julie L HLTH:EX
Subject: draft teleconference notes posting of complaints

To share with the committee when you get back

Sue Bedford
Director, Community Care Facility Licensing
Health Authorities Division, Ministry of Health
6-2, 1515 Blanshard Street, Victoria BC V8W 3C8

TEAMWORK CURIOSITY PASSION SERVICE COURAGE ACCOUNTABILITY

Phone: (250) 952-1442
Fax: (250) 952-1282
sue.bedford@gov.bc.ca

DRAFT TELECONFERENCE NOTES
CCFL Complaint Postings
Hospital Act Inspection Complaints Posting

Members Present:

VIHA – Natalie
VCHA - no attendee
FHA – Tim and Dee
IHA – Gretchen
NHA – Val

Updates:

VIHA

- collecting complaint information
- No investigations have been completed since Sept 1st
- Will post information when complaints are completed

FHA

- final testing of website is underway
- Should go live by middle of September
- Working with webmaster to create better links
- Database being built for Hospital Act side
- FHA privacy officer does not view project as needing a PIA

IHA

- Started doing substantiated complaints in June
- Beginning to do Hospital Act process
- Website mock-up is being worked on
- Should be live by end of month

NHA

- Plan to go live on Sept 24th
- Connected with NHA privacy officer
- Val will confirm details with NHA privacy officer

Ministry of Health

- Project is part of September deliverables for Seniors Action Plan
- Will be reported out as having met deliverables.

Next teleconference date: to be determined
\\Herder\s15008\HAD General\Programs\Licensing\Complaints\DRAFT TELECONFERENCE NOTES - Sept 12, 2012.docx