



# Annual Report 2021-2022

*Reducing the societal and economic burden of injury in British Columbia*

## ACKNOWLEDGEMENTS

We gratefully acknowledge the province-wide partnership between the Provincial Health Services Authority (PHSA), Evidence to Innovation Research Theme at the BC Children's Hospital Research Institute, and the Department of Pediatrics, University of British Columbia (UBC) for their integral participation and contribution to the BC Injury Research and Prevention Unit (BCIRPU). Their ongoing involvement and support allows BCIRPU to continue to be a leader in the development of evidence-based prevention initiatives that build capacity in health authorities and that contributes to the improved health, well-being, and safety of British Columbians.

The BCIRPU offices are located on the traditional and unceded land of the Coast Salish peoples, including the Skwxwú7mesh (Squamish), Stó:lō, Səlílwətaʔ/Selilwitulh (Tseil-Waututh), and xʷməθkʷəy̓əm (Musqueam) Nations.



THE UNIVERSITY OF BRITISH COLUMBIA

Cover Page: AJ\_Watt/iStock  
Page 4: Ian Pike - Geoff Lister Photography; Shelina Babul - YWCA

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## MESSAGE FROM THE DIRECTORS

**Dr. Ian Pike & Dr. Shelina Babul**

While COVID-19 has been with us since March 2020, we have adapted to meet the challenges, and are delighted to report that the BCIRPU team has continued to be successful and productive during the 2021-2022 reporting period. We are grateful to have confirmed a 5-year agreement and funding renewal of BCIRPU with the BC Government, PHSA, and BCCDC. We are delighted for this recognition and support for our mission to reduce the social and economic burden of injury in BC.

Working with our colleagues at BCCDC, we supported the recruitment of five injury prevention lead positions—one in each of the regional health authorities. The resources and support for these positions is unprecedented in BC and unmatched in other provinces, demonstrating BC's leadership and commitment to reducing serious injury, disability, and death. We look forward to strengthening our relationships and more seamless communications with each of the regional health authorities through these new positions.

We recognize that COVID-19 is here to stay, and that it has changed society and the way we work for the foreseeable future. We have adapted a hybrid model of working between home and the office, which has not resulted in disruptions to our injury surveillance and research work. As with the rest of the world, we were able to return to some in-person meetings and to travel to conferences, allowing for the opportunity to share knowledge and information face-to-face with our colleagues.

COVID-19 also gave us the opportunity to pursue specific research projects related to the effects of the pandemic on injury. Dr. Ian Pike received two CIHR grants to examine the consequences of COVID-19 and related policies on unintentional injuries and violence-related injuries. In addition, BCIRPU members are collaborating on CIHR-

supported COVID-19 studies in road safety. Together, these projects will provide greater understanding of how the pandemic and particular policies impacted society with regard to injury.

A highlight of 2021-2022 was the funding of 37 road safety projects throughout BC through the inaugural Vision Zero in Road Safety Grant Program. BCIRPU, in partnership with the health authorities and government, provided management for the program, which was funded by the Ministries of Health and Transportation and Infrastructure. This program is a demonstration of yet another considerable investment by the BC Government in reducing the burden of injury in the province through local projects to improve road safety for vulnerable road users at the community level.

As we prepare to host the Canadian Injury Prevention Conference in November 2022, considerable time and attention is being devoted to communications with presenting partners and sponsors, conference agenda planning, and abstract submissions review. This conference will be the first Canadian Injury Prevention Conference presented in almost ten years, and BCIRPU is proud to host and to provide the venue for injury prevention researchers and professionals to gather to confer on the latest evidence and research findings.

We continued our efforts to improve knowledge and changes in attitudes and behaviours in order to reduce disability and death from

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COVID-19 also gave us the opportunity to pursue specific research projects related to the effects of the pandemic on injury.

preventable injuries. BCIRPU uses traditional digital tools and media to convey injury prevention information to the public. This is achieved through BCIRPU's strategic alliance with The Community Against Preventable Injuries (Preventable) in the delivery of the Preventable injury prevention campaign, as well as platforms that include public education materials, including the Concussion Awareness Training Tool (CATT), Active and Safe Central, Prevent Shaken Baby Syndrome BC, Finding Balance BC, and Outsideplay.ca.

The Preventable social marketing campaign continued to shift attitudes, beliefs, and behaviours in BC, by an average of 5-15% among those who have seen the campaign, compared to those who have not. The campaign is associated with a 11% reduction in injury related deaths among BC citizens aged 25-54 years and 30% among BC children and youth aged 1-24 years. The campaign received 3 Gold and 1 Silver awards at the 2021 International Safety Media Awards for its work in video, print, ambient, online, and overall campaign categories. Preventable was also recognized by the Canadian Safe Boating Council with the 2022 Best Media Contribution to Boating Safety Award.

Sports and recreation is a key area of research for the BCIRPU. Dr. Shelina Babul's Concussion Awareness Training Tool (CATT) continued its knowledge translation efforts this fiscal year with the addition of CATT for High Performance athletes at the university level. In partnership with USPORTS, this module has been mandated by 28 universities and colleges across the country. Other notable efforts included teaching concussion education in East Africa and the inclusion of a concussion lecture and mandating CATT for Medical Professionals training at UBC Medical School. In September we led a province-wide campaign for Concussion Awareness Week. We continue our role as site leads for the BC chapter of the national SHRed Concussions study. Finally, we began an extensive evidence review and update of Active & Safe Central.

Dr. Mariana Brussoni's research program continued to be successful in 2021-22, receiving \$1 million in new funding for outdoor risky play-related research. In August 2021, Dr. Brussoni became the Director of the UBC Human Early Learning Partnership, a research and knowledge mobilization centre on early childhood health and well-being. Congratulations, Mariana!

Our work would not be possible without the staff and students of the BCIRPU team. Their hard work and tenacity during these challenging times is exemplary and we are grateful for their positive, can-do approach, and their continuing commitment to excellence in all that they do. We would also like to sincerely thank our collaborators from the Health Authorities, BC Government, and our colleagues in the broader injury research community. Thank you all for your continuing commitment, support, and collaboration.

Acknowledgement and thanks is extended to Dr. Allison Eddy and the Department of Pediatrics, University of British Columbia, and to Drs. Wyeth Wasserman and Quayn Doan, and the BCCHR team for providing the research environment and supporting our investigative efforts. And of course, we would like to thank the various injury prevention communities, research institutes, and NGOs for their collaboration and support as we continue our efforts in injury prevention.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ian Pike'.

Dr. Ian Pike, Director

A handwritten signature in black ink, appearing to read 'Shelina Babul'.

Dr. Shelina Babul, Associate Director





# MESSAGE FROM THE PROVINCIAL HEALTH SERVICES AUTHORITY (PHSA)

**Dr. Réka Gustafson**

Congratulations to the BC Injury Research and Prevention Unit (BCIRPU) for a year filled with success in injury prevention research, surveillance, leadership, collaboration, and innovation in BC. The Unit's support has been instrumental to the BC Government, the BC Centre for Disease Control (BCCDC), the First Nations Health Authority and the Regional Health Authorities to advance injury prevention, policy and practice.

I am grateful for the support of the BCIRPU for continuing, in collaboration with Megan Oakey, the Provincial Manager for Injury Prevention, to make progress on the three provincial injury priorities. This was achieved under the challenging conditions created by the pandemic. The BCIRPU and Megan Oakey provided the necessary foundational support to develop and hire five new regional injury prevention leads; one for each regional health authority. Collectively, they will advance the injury prevention agenda in BC.

This annual report represents outstanding achievements by the BCIRPU throughout the 2021-2022 year. I commend the success they have had in injury surveillance, research, knowledge translation, and public information. The BCCDC is pleased to be a partner with BCIRPU in our collective mission to reduce the societal and economic burden of injury in BC, and we look forward to continued collaboration for action on injury prevention in the years ahead.

Sincerely,

Dr. Réka Gustafson, MD FRCPC  
Vice President, Public Health and Wellness, PHSA  
Deputy Provincial Health Officer



ONEINCHPUNCH | SHUTTERSTOCK

# BCIRPU AT A GLANCE

## Our Vision

To be a leader in the production and transfer of injury prevention knowledge and the integration of evidence-based injury prevention practices in 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.

## Our Mission

To reduce the societal and economic burden of injury among all age groups in British Columbia through research, surveillance, education and knowledge transfer, public information and the support of evidence-based, effective prevention measures.

## Background

BCIRPU is located at BC Children's Hospital and is a core research program within the Evidence to Innovation theme at the BC Children's Hospital Research Institute. To reduce the social and economic burden of injury in BC, the Unit was established as a strategic entity, supporting the development of policies and programs through research, surveillance, and the translation of evidence and knowledge to researchers, policy makers, practitioners, and the public. BCIRPU leaders are members of the faculty at the University of British Columbia, and train and mentor future health care professionals, researchers, policy makers, and injury prevention practitioners.

## Our Role

To serve as a provincial "hub" to provide research-based leadership and coordination to stakeholders in order to reduce the societal and economic burden of injury among all age groups in British Columbia.

Key objectives include:

- Reducing the social and economic burden of injury in BC
- Leading research and knowledge development
- Improving surveillance
- Guiding evidence-based prevention
- Supporting professionals and practitioners
- Providing awareness, education, and public information

## Strategic Pillars

- Surveillance
- Research
- Knowledge Synthesis and Translation
- Public Information

## Funding & Support

BCIRPU operates as a province-wide partnership between the BC Centre for Disease Control at Provincial Health Services Authority (PHSA), Evidence to Innovation Research theme at BC Children's Hospital Research Institute, and the Department of Pediatrics, University of British Columbia. BCIRPU is supported by core funding from PHSA, and competes for peer-reviewed research grants and contracts.

# STRATEGIC AREAS OF FOCUS

## Surveillance

Understanding trends and patterns is an important first step in reducing the burden of injury. Injury surveillance is the ongoing collection, analysis, interpretation, and timely dissemination of injury data. Government, health authorities, and other stakeholders require data to inform their decisions to develop and implement effective injury prevention initiatives. The BCIRPU maintains a comprehensive, up-to-date, and standardized surveillance system through its Injury Data Online Tool (iDOT) to support these efforts.

## Research

High-quality research is crucial for the development of evidence-based injury prevention policy and programming. With expertise in injury prevention, epidemiology, health promotion and education, psychology, kinesiology, preventive medicine, and public health, BCIRPU provides applied injury research and knowledge development leadership and support to government, health authorities, PHSA Population & Public Health, researchers, and other stakeholders. Our collaborations with provincial, national, and international researchers and stakeholders support injury prevention research across age groups, mechanisms of injury, socioeconomic status, and among Indigenous communities.

## Knowledge Synthesis & Translation

BCIRPU monitors the best injury research and prevention practices in BC, Canada, and around the world. The Unit completes in-depth analyses of current interventions in order to identify those with proven success. This knowledge is compiled and communicated to government, health authorities, PHSA, and other stakeholders. Examples include research evidence reviews, evaluations, syntheses of injury indicators—both general and specific to the provincial injury prevention priorities—and health authority-specific reports.



FATCAMERA | ISTOCK

## Public Information

Improving knowledge and changing attitudes and behaviours can lead to the reduction of disability and death from preventable injuries. BCIRPU currently utilizes traditional digital tools and media to convey injury prevention information to the general public. This is achieved through the Unit's strategic alliance with The Community Against Preventable Injuries in the delivery of a province-wide injury prevention social marketing program, as well as core programs including the Concussion Awareness Training Tool, Prevent Shaken Baby Syndrome BC, Finding Balance BC, and Outsideplay.ca.





## TOP STORIES OF 2021–2022

Here's what we were talking about this past year.

### BC Vision Zero Grant Program

The Vision Zero Grant Program was established with the goal of generating immediate and long-term injury reduction benefits for vulnerable road users in underserved communities, Indigenous communities, and small and remote communities. Local and Indigenous governments can apply for funding to implement innovative, technology-driven, proven, and low-cost road safety crash countermeasures.

This year, 37 projects were approved, with projects in every regional health authority. Of these, 16 are from and in Indigenous communities. Projects include improvements such as crosswalk infrastructure, closed streets, traffic calming, speed limit reduction pilots, walk signals that give a head start to pedestrians, speed reader boards, mixed use paths, better lighting and signage, and road safety planning.

Learn more at <https://www.injuryresearch.bc.ca/37-projects-funded-in-this-years-vision-zero-grant-program/>.

### Data sharing and partnership with the First Nations Health Authority

In 2021-2022, BCIRPU signed a data sharing agreement with the First Nations Health Authority (FNHA). This partnership is the first step in the creation of a First Nations Injury Surveillance system in the province, which, with the collaboration of Trauma Services BC, will link First Nations data with available injury datasets. This agreement is the first of its kind in BC and will allow for greater understanding of the trends and patterns of injuries among First Nations people that can inform policy and practice; address any disparities in the burden and rate of injuries, and reduce the burden of injuries among First Nations people in BC. The agreement also includes the goal to co-develop capacity and expertise to strengthen injury prevention activities in the province.

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The primary benefit of a First Nations injury surveillance system in BC is that it will enable FNHA to develop an Injury Surveillance and Prevention Strategy to prevent injury-related morbidity and mortality among First Nations people.



## TOP STORIES OF 2021–2022

Here's what we were talking about this past year.

### Older Adult Serious Injury Indicator

With financial support from the Public Health Agency of Canada, BCIRPU will be developing key indicators for serious unintentional injury among adults and older adults in Canada.

This national project, being undertaken in collaboration with York University, will identify ICD-10 codes (the coding system used to code death, hospitalization, and some emergency department data) associated with severe injuries among adults (20-64 years) and older adults (65+ years). These codes will be used to create standardized indicators of severity that can be used to evaluate trends in serious injuries. The project follows previous work to develop a pediatric serious injury indicator, now part of the population health indicators suite in BC.

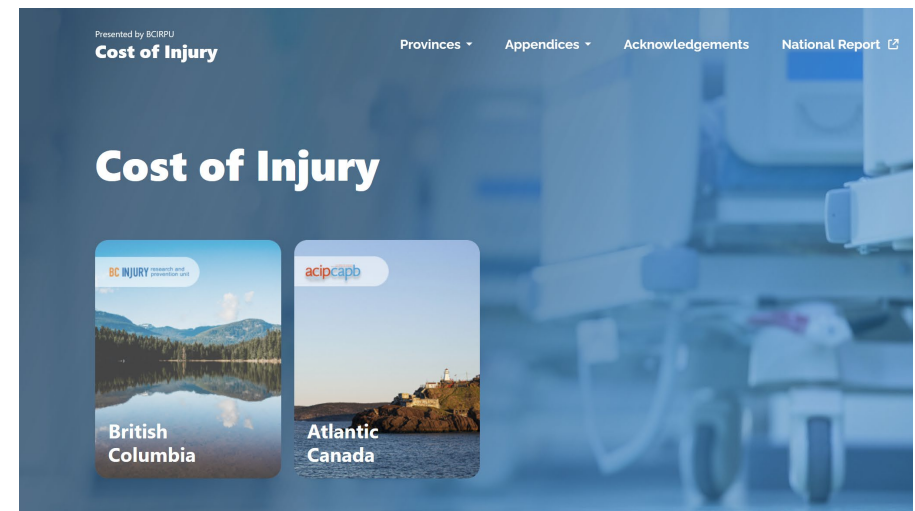
Ultimately, indicators like these will advance the quality of injury care and inform efforts to prevent these incidents from occurring in the first place. Currently the project team is cleaning and analysing the dataset.

### Cost of Injury Canada/BC Report

The BCIRPU has created an interactive tool to help people understand the human and economic cost of preventable injuries.

The website, [costofinjury.ca](https://costofinjury.ca), has data detailing the human cost of injury, including deaths, hospitalizations, and emergency department visits, as well as the economic costs of injury on the health care system and society. Interactive charts and graphs illustrate just how severe this problem is in BC.

The tool is modelled on the [Cost of Injury in Canada interactive report](#) published by Parachute, the national injury prevention organization, in collaboration with the BCIRPU. Data currently exists for British Columbia and Atlantic Canada, with the potential for more provinces to be added in the future.



OUR NEW COST OF INJURY WEBSITE.



## TOP STORIES OF 2021–2022

Here's what we were talking about this past year.

### Dr. Shelina Babul Promoted to Clinical Professor

Congratulations to BCIRPU Associate Director and Sports Injury Specialist Dr. Shelina Babul, who was promoted by the Department of Pediatrics, UBC Faculty of Medicine, to Clinical Professor!

This promotion is in recognition of Dr. Babul's ongoing program of research, and in particular, her leadership of the Concussion Awareness Training Tool (CATT). Shelina's impact on raising concussion awareness and informing concussion recognition, diagnosis, treatment, and management has been supported by her involvement in national and international initiatives. Well done, Shelina!

### Dr. Mariana Brussoni new director of child development centre at UBC

In August 2021, Dr. Mariana Brussoni was appointed Director of the Human Early Learning Partnership (HELP), a UBC research and knowledge mobilization centre on early childhood health and well-being.

Dr. Brussoni's program of research is focused on outdoor risky play in children, making her appointment to HELP an excellent opportunity to explore closer collaborations with the Unit. BCIRPU is looking forward to working with Dr. Brussoni and HELP to further research on child development and injury prevention.

Dr. Brussoni was successful in receiving \$1 million in funding for outdoor risky play-related research. Learn more about Dr. Brussoni's work on page 27.





## MEDIA HIGHLIGHTS

Here's what we were talking about this past year.

BCIRPU had 42 stories in the media in 2021-2022. Here are some highlights from the past year.

### The elements that make a perfect playground

Improving motor skills, resolving conflict, social development, and even learning the physics of our world can all happen on the playground. However, many of these spaces don't provide a good environment for facilitating meaningful play.

Dr. Mariana Brussoni [spoke to](#) Popular Science about the components of the ideal playground.

### Metro Vancouver's most dangerous intersections for pedestrians

Dr. Ian Pike was featured in a [news article](#) by the Vancouver Sun on pedestrian safety in Metro Vancouver. He spoke about the Vision Zero Grant Program, a program administered by the BCIRPU, which provides funding to local and Indigenous governments to implement low-cost road safety improvements, such as flashing beacons or improved signage, aimed at protecting pedestrians and other vulnerable road users.

### WorkSafeBC posting COVID-19 safety plan resources online

Dr. Ian Pike [spoke to](#) Canadian Occupational Safety on safely returning to work during COVID-19.

*"It relies upon the will of people to do it; of people to behave, and of policy makers and leaders to make it very easy to behave in that way."*

### B.C. team recruiting youth athletes for study on youth concussions

Dr. Shelina Babul and the SHRed Concussions Study were featured in a [news article](#) by Global News and [video](#) by CityNews.

*"Concussions have come a long way in the last 10 years, we've learned so much, we're recognizing it's a brain injury and it's not just having your bell rung, but we have a long way to go to really understand why no two concussions are alike and why everybody responds very differently to an impact to the head and ultimately to the brain."*



# 42

## Media stories





## SUPPORT SERVICES

### Supporting injury prevention professionals

#### A Provincial Hub

BCIRPU serves as a hub, providing leadership and coordination for injury prevention initiatives throughout BC. The Unit is directly aligned to support the needs of the BC Ministry of Health Service Plan, the BC Guiding Framework for Public Health, the Provincial Injury Prevention priorities, as well as the needs of the Regional Health Authorities, First Nations Health Authority, BCCDC, and other stakeholders. BCIRPU provides ongoing support to the health authorities, BC Injury Prevention Committee (BCIPC), and members of the BC Injury Prevention Alliance (BCIPA). This support enables cost-effective, evidence-based, and targeted injury prevention policies, strategies, and interventions.

#### Provincial Injury Prevention Priorities

During the 2021/22 operating period, BCIRPU supported the BC Health Authorities through the work of the BC Injury Prevention Committee (BCIPC) and is represented on the Health Authority Injury Prevention Working Group. BCIRPU plays a central role in coordinating communication between injury prevention leads in BC, facilitating opportunities for networking.

The BCIPC is co-chaired by Ms. Megan Oakey (Provincial Manager for Injury Prevention at the BCCDC) and Dr. Emily Newhouse (Fraser Health Authority). In 2021/2022, the BCIPC continued their work on the provincial priorities for injury prevention. Work resumed on the priorities—seniors' falls; transport-related injury; and the prevention of youth suicide and self-harm—as COVID-19 redeployments came to an end.

The BCIPC focused on establishing the new BCCDC/regional Injury Prevention Lead positions, providing input into the Ministry of Health Injury Prevention Framework (the first Policy Framework and Action Plan for Injury), contributing to the update of the BC Road Safety Strategy, and supporting the first province-wide Vision Zero grant competition. Other work included the coordination of the social media campaigns for the province-wide Concussion Awareness Week and Seniors' Fall Prevention Week activities.

#### Seniors' Fall Prevention

Work to develop a provincial falls prevention brand and communications strategy based on the knowledge, attitudes, and beliefs of older British Columbians began and will continue into the 2022/23 fiscal. In anticipation of new regional Injury Prevention Lead positions, the province-wide Seniors' Falls Prevention work plan was also updated.

Ms. Megan Oakey and Ms. Kelly Wilson continued their roles as co-chairs of



## SUPPORT SERVICES

the BC Falls Community of Practice, whose mandate is to foster collaboration, reduce the duplication of effort, and work toward the standardization of provincial fall prevention resources. The group continued to expand across the entire province and welcomed many new members. The group also stewarded falls prevention awareness month in November that included social media content, a provincial proclamation, and regional promotion.

### Road Safety

Similar to the Seniors' Falls Prevention work plan, the provincial Road Safety work plan was also updated in anticipation of new capacity. The BCIRPU, the Ministry of Health, and the Health Authorities supported the implementation of the new BC Vision Zero in Road Safety for Vulnerable Road Users Grant Program that funds local governments, Indigenous community governments, and

non-government organizations to advance evidence-informed road safety improvements. Development of a Vision Zero online platform for program management and to showcase successful projects was initiated by BCIRPU, to be fully developed in 2022/23.

### Youth Suicide and Self-Harm

The BCIPC Youth Suicide and Self-Harm working group reconvened and will continue their work through late 2022, supported by the BCIRPU. The working group will develop provincial recommendations for actions for public health using a rigorous consensus-building process. The working group will also develop indicators for youth suicide and self-harm using a similar process that was used to determine the BC Injury Indicators for seniors' falls and road safety.



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ANTONIO GUILLEM | SHUTTERSTOCK



BCIRPU assists BC's health authorities and other stakeholders with:

- Injury prevention program planning, development, implementation, and evaluation
- Coordination and facilitation of injury surveillance
- Identification of key trends, issues, and evidence-based best practices
- Expert training in injury and falls prevention
- Research design, methods, and analysis
- Research literature searches and synthesis
- Grant application development and review

### BC Injury Indicators

BCIRPU and members of the BCIPC underwent an indicator development process. An environmental scan of existing indicators was conducted, as well as a survey was initiated, to obtain input from experts and decision-makers. Final indicators were selected for BC, and these indicators were specified. An article was published in November 2021, where the suite of indicators were identified and defined. For more information, please refer to [Development of Policy-Relevant Indicators for Injury Prevention in British Columbia by the Key Decision-Makers](#).

### Injury Data Mart

Injury surveillance is a priority for the use of these indicators. Injury surveillance using linked data has been identified as a critical requirement by the BC Observatory for Population & Public Health partnership, including regional epidemiology leads, Medical Health Officers, and endorsed by the Public Health Executive Committee. The injury data mart, which will provide the secure facility for data linkage, has been identified as a critical need for the population and public health injury prevention work plan.



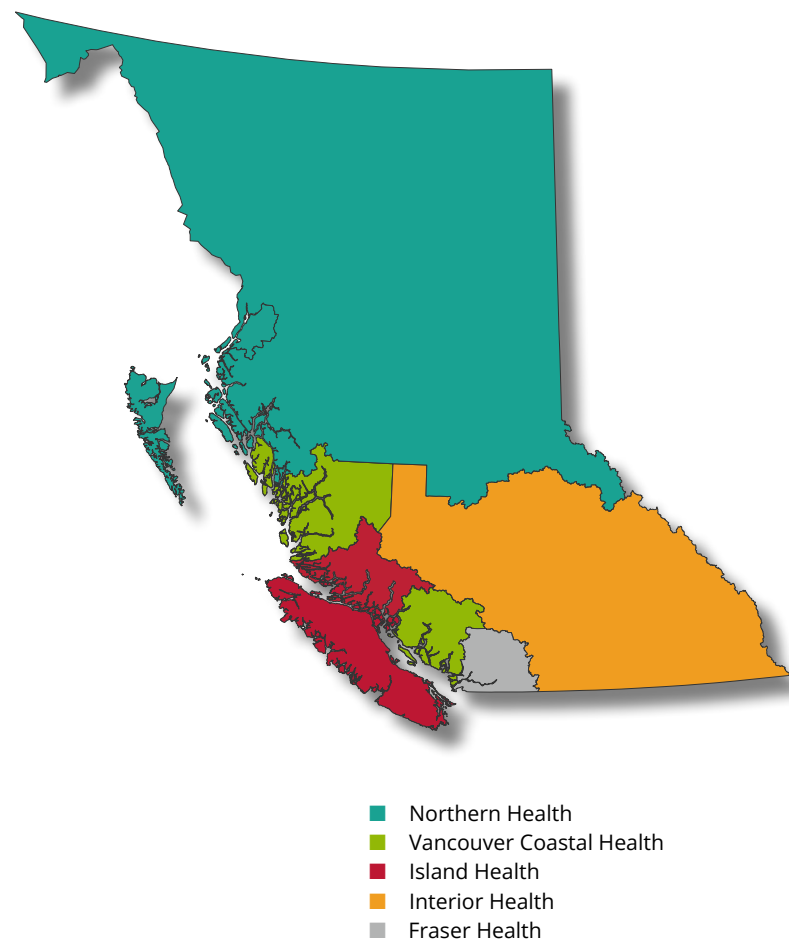
### BCCDC/Regional Injury Prevention Leads

These positions were approved in principle going into 2021/22. Providing a dedicated position in each regional health authority will provide the local and regional leadership required for strategic planning, work plan development, and program implementation and evaluation. Initial work revolved around developing the program with input and support from all participating and supporting entities, including the BCCDC and regional Health Authority leadership.

The reporting structure, management structure, roles and responsibilities, how the new positions will work in partnership and with whom, supports to be provided (by the BCIRPU, BCCDC, Trauma Services BC, and others), approaches to Indigenous health, and how progress will be measured were outlined. Job descriptions were developed for review by Human Resources, with duties including:

- Translates provincial priorities and work plans to the regional and local context
- Works to facilitate uptake of evidence-based injury prevention initiatives and best practices with internal stakeholders, indigenous partners, community partners, and other levels of government
- Plans and conducts related quantitative and qualitative research with support from the BCIRPU
- Collaborates with national, provincial, and regional partners in establishing key messages and common approaches to injury prevention campaigns and initiatives

Four of the five positions were filled going into 2022/23.







### Partnership with the First Nations Health Authority (FNHA)

Building upon explorations in injury prevention with the First Nations Health Authority (FNHA) in 2018-2019, a collaboration has been formed between FNHA, BCIRPU, and Trauma Services BC to develop First Nations Injury Surveillance in BC. The first step in establishing this surveillance system is to gain access to the First Nations Client File (FNCF) in order to enable linkages with available datasets. During 2021-2022, a FNCF Data Access Request Form was finalized and sent for signatures.

### Injury Surveillance Methods Working Group

BCIRPU have collaborated with analysts and epidemiologists in all health authorities via the Injury Surveillance Methods Working Group to establish consistent methods for defining and reporting injuries in BC, and continued the collaboration with BC Trauma Services (BCTS) to develop a secure linked Injury Data Mart.

The main focus for this group in 2021-2022 was to discuss emergency department (ED) surveillance in BC and how to develop a provincial system, acknowledging that the current ED surveillance in BC, which is the National Ambulatory Care Reporting System (NACRS), does not capture mechanism of injury and not all hospitals report to NACRS. Currently, Vancouver Coastal Health (VCH) and Fraser Health (FH) have their own ED surveillance units. During group discussions and data explorations, it was identified by the group that the algorithms used in VC and FH to capture mechanism of injury would not work as the ED information systems vary among hospitals. Moving forward, the group is exploring the option of including level 3 in NACRS or expanding the existing diagnosis shortlist in EDs so as to collect information on external cause of injury.



### Child Death Review Unit

The Child Death Review Unit (CDRU) of the BC Coroners Service reviews the deaths of all children age 18 and under in BC. The purpose of these reviews is to better understand how and why children die, and to use those findings to prevent other deaths and improve the health, safety, and well-being of all BC children. Through the review of all child deaths, the CDRU gathers data that can show trends in child deaths.

Dr. Ian Pike represents the BCIRPU as a member of the CDRU. There were no meetings in 2021-2022.



## Other Injury Prevention Resources

### Injury Insights

BCIRPU produces [Injury Insight](#), a periodic injury prevention factsheet/newsletter focused on injury issues of interest in BC. Five *Injury Insights* were developed and released during 2021-22:

- ATV Safety
- Outdoor Schools
- Material Wealth, Social Connectedness, and Injury
- Snowmobiling Safety
- Alcohol Poisoning

The series of *Injury Insights* focused on injury data is in development and scheduled to be released in 2022-23.

Access all current and past *Injury Insights* [on our website](#).

### Active & Safe Central

This resource contains injury prevention information for over 50 sports and recreational activities. Visit [activesafe.ca](#).

### Concussion Awareness Training Tool

The Concussion Awareness Training Tool (CATT) is a series of online educational modules and resources with the goal of standardizing concussion recognition, diagnosis, treatment, and management. CATT provides medical professionals, coaches, parents, teachers, athletes, and working adults with the latest evidence-based information on concussion. Visit [cattonline.com](#).

### Outsideplay.ca

This online risk reframing tool was created to help parents and early childhood educators learn the importance of outdoor risky play and develop strategies for promoting healthy outdoor risky play for children. Visit [outsideplay.ca](#).

### HealthLinkBC

A new collaboration between BCIRPU, the Ministry of Health, and HealthLinkBC has been initiated to develop a plan for updating or adding HealthLinkBC Features or Files relating to injury and injury prevention.

### Conference

Planning is in progress for the Canadian Injury Prevention Conference, scheduled to be held in Vancouver November 2-4 2022, at the Coast Coal Harbour Hotel. BCIRPU is a conference host, along with Parachute and the BC Centre for Disease Control.



# SURVEILLANCE

## Understanding injury trends and patterns

### Improving Injury Surveillance

BCIRPU's surveillance system currently includes data on injury hospitalizations including sports-related injuries (2001/02-2019/20), deaths (2001-2020), road crash information (TAS data) (deaths: 2002-2020), ED visits to BC Children's Hospital (CHIRPP data) (2007-2018), and work-related injury claims (WorkSafe) (2001-2020). New databases are incorporated as they become available and new data sharing agreements are secured, with ongoing cleaning and maintenance as required.

### Injury Data Tools

Ongoing efforts include:

- Operating the BC Injury Reporting System, providing injury statistics and information to the BC Ministry of Health, PHSA/BCCDC, members of the BC Injury Prevention Committee, members of the BC Injury Prevention Alliance, and the health authorities.
- Conducting ongoing collection, analysis, interpretation, and dissemination of high-quality injury statistics and information related to emerging trends, identified gaps in evidence, best practices, and best buys.
- Maintaining data sharing agreements with various agencies and organizations, to ensure a comprehensive view of injury in BC.
- Managing the interactive Injury Data Online Tool (iDOT®), a direct interface with the surveillance data for users to produce customized tables, charts, and maps.
- Support, partnership and collaboration towards the development of an Injury Data Mart, which will provide a secure facility for surveillance data and data linkage.
- Support the development of an injury surveillance system using data that identifies First Nations Status, working in collaboration with the First Nations Health Authority to identify surveillance needs, data sources, outputs, and products.

### Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP)

BCIRPU operates the BCCH component of the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP)—an injury surveillance system funded by the Public Health Agency of Canada and in use in 11 pediatric and 9 general hospitals across Canada. The program continues to amass extensive data and information on child and youth injury, which is used to inform injury prevention policy and programs.



## Injury Data Online Tool (iDOT)

Available via the BCIRPU website, the Injury Data Online Tool (iDOT) provides up-to date surveillance data and information. Users select from multiple pull-down menus to choose parameters and create a customized view of the injury mortality and injury hospitalization data according to their needs. Numbers, rates, and age-adjusted rates can be presented. Longitudinal and cross-sectional comparative data are available and can be further broken down by multiple specific parameters such as age, sex, region, and injury type. The iDOT also provides information on the number of hospital stays and the costs related to hospital treatment. Included in the iDOT are road injury data from the Traffic Accident Statistics (TAS) database provided by the Insurance Corporation of BC (ICBC); the inclusion of sports-related data using the Discharge Abstract Database, CHIRPP BC Emergency Department data, and work-related injury death and injury claims from WorkSafeBC. Data have been updated to the most recent years available.

Visit our website to access the [iDOT](#).

### Google Analytics\* for the iDOT© pages and data visualizations (April 1, 2021–March 31, 2022)

iDOT Landing Page: 793 pageviews

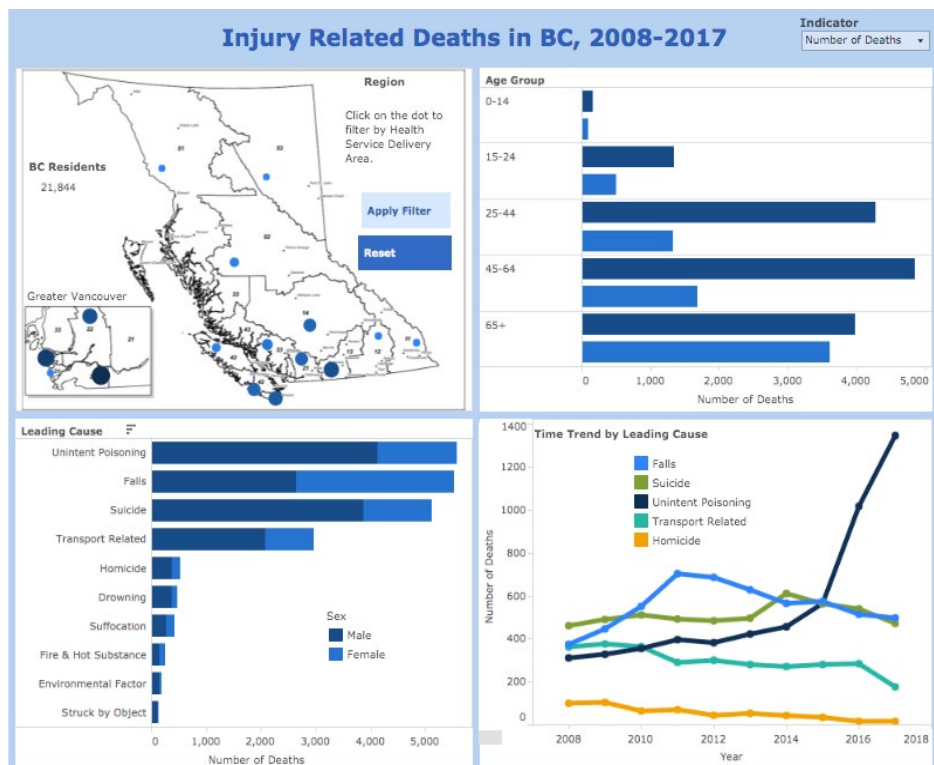
Data Visualizations: 303 pageviews

*\*Note: Google Analytics only exists for September 2021 onward due to launch of new website*

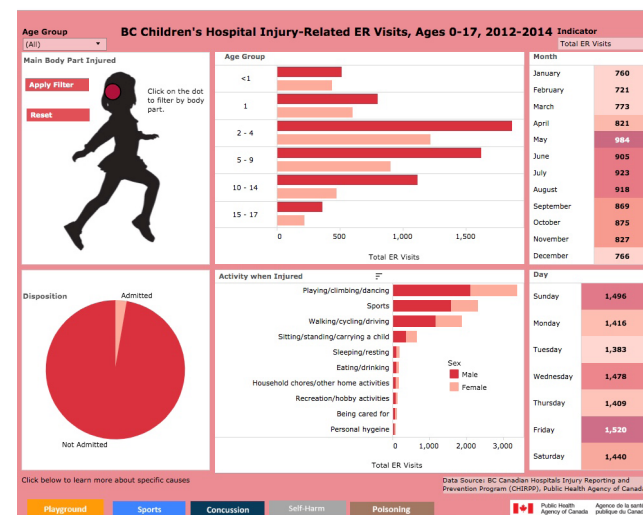
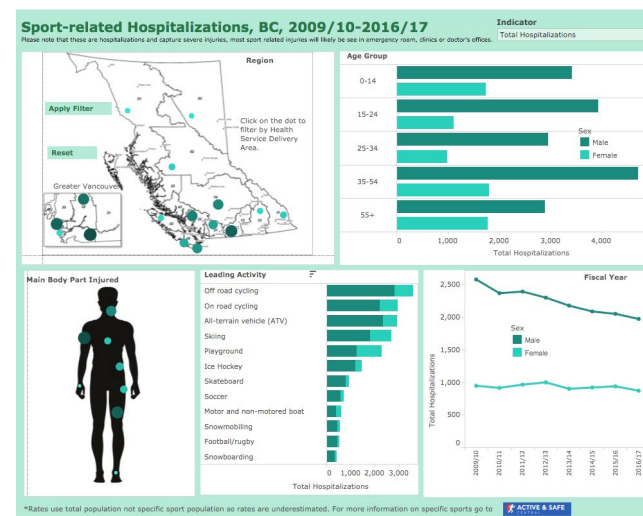




## Injury Data Visualizations



Data visualizations for injury-related deaths (left), sport-related hospitalizations (top right), and ED visits to BC Children's Hospital (bottom right) are available on our website.





## RESEARCH

### Guiding evidence-based prevention

#### Research and Knowledge Development

BCIRPU contributes to the injury prevention evidence base by pursuing research opportunities through peer-reviewed grants and contracts. Projects aligning with the Unit's core deliverables are undertaken with provincial, national, and international research partners, collaborators, and other stakeholders.

 **Articles Published: 19**

 **Presentations & Workshops: 14**

**Collaborative Grants Awarded: \$2,894,607**



#### Surveillance in High School to Reduce Concussions and Consequences of Concussions in Canadian Youth (funded by National Football League)

The SHRed Concussions program will provide a national platform for concussion surveillance in high schools that will have a significant impact in reducing the risk of sport-related concussions and their consequences in youth. The project is led by Dr. Carolyn Emery, University of Calgary, and involves investigators from universities across Canada, including UBC and UBCO. In Vancouver, SHRed will be conducted at BC Children's Hospital (BCCH), and UBC, and is being led by Dr. Shelina Babul and Dr. Ian Pike.

As part of the three-year program, investigators will evaluate 6,000 high school athletes across Canada. The student athletes are between the ages of 13-17, and participate in one or more of the following sports: basketball, football, ice hockey, ringette, lacrosse, rugby, soccer, volleyball, cheerleading, wrestling or sledge hockey at the interscholastic, community, or club level. Funding will assist in establishing and validating injury surveillance in high schools, integrating a variety of tools to detect concussion, predict recovery, and inform best practice and policy in the prevention and management of concussions in a variety of youth sports. Funding for this project, from the National Football League, was announced in November 2018.

For more information, visit the [study webpage](#).

#### VOICES of Our Children and Youth: Akwesasne

The Voices of Children and Youth (VOICES) is a CIHR-supported project to determine the efficacy of child and youth voices to inform community injury prevention policy and practice improvements. Youth are challenged through visual storytelling, combining photography, video and narratives, to identify



safe and unsafe places in their community, to develop solutions to improve the situation, and to make recommendations to community leaders who can make a difference.

The VOICES method has been applied in two communities, resulting in changes to infrastructure and knowledge transfer products designed and produced by the youth, such as YouTube videos.

## VOICES Akwesasne

In 2020-2021, investigators gave a wrap-up presentation to the Mohawk Council. The final report will be submitted to CIHR in April 2022. A summary booklet of the project is being prepared for the community at Akwesasne. The booklet will provide an overview of the project, key findings, and learnings.

## VOICES Vancouver

The BC site of the VOICES project is taking place in Vancouver with the Thriving Kids Care Society and their day camp community. This project is being conducted in partnership with the Society for Children & Youth of BC, and is led by Dr. Michelle Bauer, post-doctoral fellow with the BCIRPU.

In 2021-2022, data collection was completed. The first manuscript, titled “Finding the broken playgrounds: What children’s perspectives on dangerous and safe play can tell us about their injuries, social development, and risk-seeking” is currently under review by the journal *Qualitative Research in Sports, Exercise & Health*. Two manuscripts are being drafted for submission in 2023.





## Fire and Firefighter Safety

### Examining Cancer and Injury Among Female Firefighters

The purpose of this survey-based study is to describe the incidence and circumstances of both work-related injuries and cancer among female firefighters. Data on work-related injury experiences was provided by approximately 65%, and data on cancer experiences by approximately 20% of participants. The manuscript *Female Firefighter Work-Related Injuries in the United States and Canada: An Overview of Survey Responses* has been submitted to *Frontiers in Public Health* for publication. The cancer experience manuscript will be submitted for publication in 2022-23. Findings of this study will provide support for developing and evaluating health and wellness policies, designating resources, and designing screening, surveillance, and prevention strategies specific to female firefighters. This study is being conducted by Dr. Ian Pike, Retired City of Surrey Fire Chief Len Garis, City of Surrey Fire Chief Larry Thomas, and medical oncologist Dr. Kenneth Kunz.

### Fire severity outcome comparison of apartment buildings constructed from combustible and noncombustible construction

Wood is commonly used in construction, but often perceived as less safe than structures made from non-combustible materials. With the advancement of wood products and treatments, construction techniques, and protective systems, this may not be the case any longer. Using retrospective data from fire departments across Canada, this study aimed to determine whether the type of construction material (combustible or non-combustible) affected the severity of an apartment building fire, after accounting for protective systems (smoke alarms and sprinklers).

The study found that, after adjusting for the presence of smoke



Research  
Awards:

4



Conference  
Proceedings:

15

alarms and sprinklers, structures constructed from noncombustible materials did not perform any better in terms of injuries, requiring extinguishment by fire department, or the fire spreading beyond the room of origin. The presence of working smoke alarms and sprinklers played a much greater role in reducing the severity of a fire. Smoke alarms and sprinklers reduced requiring extinguishment by fire department, as well as reduced fire spreading beyond the room of origin. Sprinklers also reduced the injury rate. Overall, this study highlighted the importance of safety systems, as opposed to construction material, in reducing the severity of a fire.

This manuscript was published in [Fire Technology](#) on March 26, 2022.





## From injury to illegal drug overdose: A retrospective cohort study

Declared a public health emergency in April 2016, the opioid overdose crisis is an ongoing issue in British Columbia driven mainly by the introduction of fentanyl into the illegal drug supply, dependence on opioids as a pain management medication, and opioid use disorder (OUD). Some people experience pain after an injury and are prescribed opioids as a pain management medication. These individuals may develop a dependence on opioids and OUD, which may lead them to turn to illegal drugs in an effort to manage their dependence, placing them at a much higher risk of overdose.

This study used a linked administrative dataset to characterize the relationship between injury, pain management medication, and potential illegal drug overdose, while adjusting for other potential risk factors, such as age, sex, employment, and income. It included working age Fraser Health residents who had sustained an injury serious enough to require an emergency department visit.

The study found that those who were prescribed opioid agonist therapy (OAT) medication following their injury, a sign of OUD, had the highest risk of illegal drug overdose. Other risk factors included having an opioid prescription, being male, being younger, and living in a lower socioeconomic neighborhood. These risk factors for overdose were also the same as the risk of developing OUD. Overall, this study highlighted the OUD cohort as an intervention group that would need sustained support and that additional caution is needed when prescribing opioids to individuals identified with additional risk factors, namely men, those who are younger, and who may be of lower socioeconomic status.

A manuscript is being prepared for a peer-reviewed publication.

## Economic Burden of Injury

The overall goal of the economic burden of injury studies is to inform decisions regarding investment in injury prevention with the ability to estimate return on investment (ROI). The purpose of these studies is to quantify the total cost of injuries, highlighting the costs of health care, indirect societal costs (e.g., lost productivity), costs associated with additional services (e.g., the criminal justice system), and prevention programming.

The Parachute interactive *Cost of Injury in Canada* report, produced by BCIRPU, was released in July 2021. Work on corresponding regional cost of injury reports for BC and for Atlantic Canada was initiated during 2021-2022 and will launch on July 5, 2022. These online, interactive platforms enhance usability of the data and information provided.

## Cost of Poisoning in BC

Poisoning is the leading cause of injury-related death and the second leading cause for injury-related hospitalization in BC. This study examined the health and economic costs of poisoning in BC for 2016 using a societal perspective, to support public health policies aimed at minimizing losses to society.

Poisonings in B.C. totaled \$812.5 million in 2016: \$108.9 million in direct health care costs and \$703.6 million in indirect costs. Unintentional poisoning injuries accounted for 84% of total costs, 46% of direct costs and 89% of indirect costs. Males accounted for higher proportions of direct costs for all patient dispositions except hospitalizations. Costs among those ages 25-64 accounted for higher proportions of direct costs except for calls to BC DPIC, where proportions were highest for children <15 years.

A manuscript has been accepted in the journal *CMAJ Open* and will be published in 2022-2023.





## Cost of Firearm-Related Injuries in BC

This study aimed to show the total cost of violent firearm-related offences in BC from 2012 to 2016. BCIRPU researchers estimated the direct costs to the health care system and indirect costs to society for violent firearm injuries and deaths; and estimated criminal justice system costs pertaining to firearm incidents. This study demonstrates the significant cost of violent firearm injury in British Columbia and the impacts on the health care system, criminal justice system, and to society at large, particularly within the criminal justice system where the costs were significantly higher than health care.

A manuscript has been accepted for publication and will be published in 2023.

## Cost of Poisoning in Canada

In fall 2021, BCIRPU and Parachute began a project to investigate the average societal costs of poisoning in Canada. Data from poisonings that have been seen and treated in the health care system will be used. The study objectives are twofold: to identify methods and obtain costs pertaining to health-related costs (direct costs) and productivity loss (indirect costs) as a result of poisoning, and to calculate the cost savings of poison control centres in Canada.

A methods report was completed at the end of 2021-2022, and a report will be finalized in 2023.

## Visualization of the Child and Youth Serious Injury Hospitalization Indicator

A draft visualization of the Child and Youth Serious Injury Hospitalization Indicator was created and is currently being finalized. Data were provided by the Public Health Agency of Canada and Trauma Services BC. The visualization will be added to the BCIRPU website in 2022-2023.

## Serious Injury Hospitalization Indicators

Serious injury hospitalization indicators for adults and older adults are in development using a modified Delphi process. Data were provided by the Public Health Agency of Canada and Trauma Services BC to develop tables with diagnosis description and scaling. The first round of review is anticipated to take place in April 2022.



ERIC BUERMAYER | SHUTTERSTOCK



## Injury Prevention and Outdoor Risky Play

In 2021-2022, Dr. Mariana Brussoni obtained \$1 million in new funding for outdoor risky play related research. The lab published 13 peer reviewed manuscripts and the research was featured in 23 media outlets, including *The New York Times*, *Popular Science*, and *The Globe and Mail*.

## Early Childhood Outside! Study (funded by the Government of Canada and the Lawson Foundation)

An online behaviour change tool was developed and evaluated to help early childhood educators learn the importance of outdoor play, reframe perceptions of risk, manage safety fears and guide development of a plan for incorporating more outdoor play in their practice. The tool was launched on [outsideplay.ca](https://outsideplay.ca) in September 2020 and a randomized controlled trial showed its effectiveness in reframing early childhood educators' perceptions of risks. Two publications describe the [tool development](#) and [evaluation results](#).

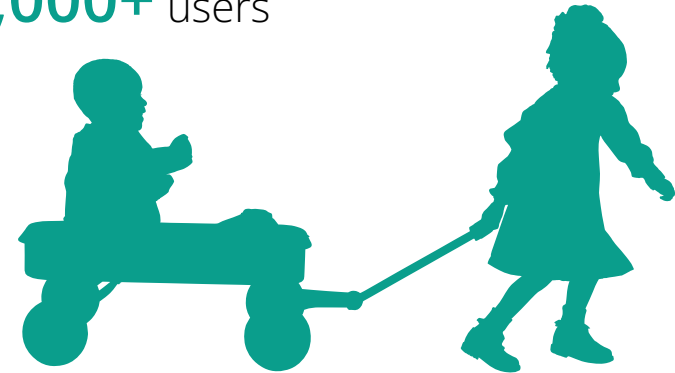
## PROmoting Early Childhood Outside (PRO-ECO) Study

Child care centres are important settings in young children's lives and provide opportunities to participate in outdoor play. The PRO-ECO study is a wait-list control cluster randomized trial being conducted with 8 child care centres in the YMCA of Greater Vancouver that evaluates the impact of the PRO-ECO project, an innovative outdoor play intervention, on children's outdoor play behaviour. The intervention includes four components: educator training and peer mentorship, parent engagement, policy shift, and outdoor play space modifications. A paper describing the [study protocol](#) has been published. The study will be completed in 2023.

## Go Play Outside!

[outsideplay.ca](https://outsideplay.ca)

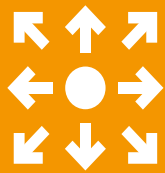
8,000+ users



20,000+ pageviews

## Grandparents and grandchildren intergenerational outdoor play (funded by Fondation DRG)

Interviews with 14 grandparents examined their motivations and challenges for outdoor play with their 3-5-year-old grandchildren. Grandparents expressed many positive emotions from playing outdoors with their grandchildren, viewed it as a way to support their own and their grandchild's health, and valued the strengthening of their relationship through this shared activity. Climate catastrophes and the COVID-19 pandemic influenced grandparents and grandchildren's abilities to enjoy outdoor play together. This research contributes to a scant literature base, and shows the broad benefits of intergenerational outdoor play for families.



## KNOWLEDGE SYNTHESIS, TRANSLATION, AND PUBLIC EDUCATION

### Improving injury awareness and knowledge

#### Changing Policy, Practice, Attitudes, and Behaviours

BCIRPU gathers and synthesizes research evidence, and develops communications strategies to reach government, health authorities, health practitioners, policy makers, researchers, other stakeholders, and the public. This includes briefing notes, technical reports, letters of support, meetings, workshops, seminars, conferences, peer-reviewed publications, and traditional and digital tools, and media.

All of these products contribute to changes in injury prevention, policy, practice, attitudes, and behaviours.

 **Newsletter  
Subscribers:**  
**800+**

#### Active & Safe Central

Active & Safe Central is undergoing updates to continue to provide current, evidence-based injury prevention information to children, youth, and adults who engage in or facilitate sports and recreational activities. In 2021-2022, a Project Coordinator joined BCIRPU to coordinate and update of the evidence for all 50 sports and recreational activities. A large systematic review is underway to gather the latest injury statistics, risk factors, and prevention information.

#### Concussion Awareness Training Tool

The online [Concussion Awareness Training Tool \(CATT\)](#) provides e-learning in the recognition, response, treatment, and management of concussion, with modules available in English and French. This evidence-based resource has targeted content for medical professionals, coaches, parents and caregivers, school professionals, athletes, workers and workplaces, and women's support workers (supporting the survivors of intimate partner violence).

Data collection for the evaluation of the new CATT for Athletes module was completed, with the analysis to be finalized in 2022-23. Engagement with cattonline.com increased significantly with the launch of the Athletes e-learning module in 2021. The new CATT for Youth e-learning module is currently undergoing evaluation, to be launched publicly in 2022-23.

The CATT packages for medical professionals and for athletes are now all available in French as well as English, and the CATT *Managing Mental Health Symptoms* resource was also translated into French.



CATT e-Learning completion breakdown for April 1, 2021—March 31, 2022:

- Athletes: 11,529
- Coaches: 7,916
- Medical Professionals: 878
- Parents/Caregivers: 833
- School Professionals: 2,001
- Women's Support Workers: 201
- Workers & Workplaces: 245

**TOTAL: 23,603**

Mandating Organizations, up to Mar 31, 2022:

- Athletes: 29
- Coaches: 41
- Medical Professionals: 1
- Parents/Caregivers: N/A
- School Professionals: 12
- Women's Support Workers: 2
- Workers & Workplaces: N/A

**TOTAL: 85**

\*Note: Some organizations counted twice if they mandate multiple organizations (ie. York mandates for Athletes & Coaches).

The CATT modules have been completed more than

# 100,000

times by people  
from more than  
50 countries





## The Community Against Preventable Injuries (Preventable)

BCIRPU continued its long-term strategic partnership with Preventable, with Dr. Ian Pike serving as its Scientific Director. In 2021-2022, Director Laura Dale left the organization. Samantha Bruin transitioned into a part-time role as Program Manager, coordinating the province-wide campaign.

In summer 2021, Preventable completed its post-COVID-19 campaign, called “Pointing Out the Obvious.” The messaging used a series of scenarios to remind people not to miss the obvious risks of injury that are often right in front of us. The campaign consisted of TV, billboards and transit shelter ads, digital, and social media. It achieved a total of 75.5 million impressions across the province.

After this campaign, Preventable finalized its new strategic plan. A new problem statement was identified as a guiding post:

*Too many British Columbians are still getting seriously injured because they behave as though preventable injuries won't happen to them.*

Development of a new campaign is underway. The new “Yellow Lines” campaign, to launch in May 2022, aims to remind British Columbians that they already know what to do to prevent injuries, they just need a little nudge.

### Click or Call Before You Dig

Once again, Preventable partnered with BC1Call, the BC Common Ground Alliance, and other partners in April 2022 to remind British Columbians about the risk of injury and property damage from disturbing buried utility lines. The multi-platform campaign ran on TV, digital, and social media, encouraging people to connect with BC1Call before they started home renovation or construction projects.

## Prevent Shaken Baby Syndrome BC – The Period of PURPLE Crying® Program

The Period of PURPLE Crying® (PURPLE) parent education program has been operating in British Columbia, Canada as a universal provincial program since 2009. Prior to discharge from the hospital, every family receives crying and shaking education from a maternity nurse and a resource package, which includes a supplementary software application (app) and booklet. Reinforcement of key messages is provided during well baby visits by nurses in public health units, community health centres and primary care units depending on region. Parents and the general public are also exposed to the PURPLE program via a virtual public education campaign and our Instagram account.

The aim of the PURPLE program is two-fold: 1. To support caregivers in their understanding of early increased infant crying; and 2. To reduce the incidence of Traumatic Head Injury – Child Maltreatment (THI-CM) / shaken baby syndrome (SBS) in BC.

The PURPLE program has been institutionalized in all BC birthing hospitals and public health units and education reinforcements occur in community by trained community service providers like midwives, infant development, pregnancy outreach workers, parent support workers and early childhood educators. Indigenous support, foster parent support, and adoption groups are being trained and participating in PURPLE education with parents/ caregivers. The majority of materials distributed are in English in an app/booklet format, but resource packages are available in 9 additional languages a one-page infographic is also available to share the program messages in pictorial format for parents who speak a language PURPLE is currently not offered. Free online training is available for all BC interdisciplinary professionals that provide support to families with infants and parents / caregivers. Since the Period of PURPLE Crying program commenced in 2009,





there has been a cumulative 35% decrease in THI-CM in children under 24 months of age in BC.<sup>1</sup>

**35%** decrease of SBS cases in children under 2 years old in BC since 2009\*

**46,000+** program materials distributed to BC parents and caregivers in 2021-2022

*\*As of March 31, 2021*

## 2021/22: An eventful fiscal year for Prevent Shaken Baby Syndrome BC

### Training:

- 69 new maternity/public health/primary care nurses
- 72 community personnel
- 64 nursing students

### Program Materials:

A total of 46,506 program materials were distributed to BC parents and caregivers:

- Fraser Health: 16,721
- Vancouver Coastal Health: 15,386
- Interior Health: 6,384
- Island Health: 5,862
- Northern Health: 2,142
- First Nations Health Authority: 11
- Infographic: 4,193

### Public Education Campaign:

- Website redevelopment started
- Facebook and Instagram advertising campaigns in June, November, and March

### Research:

3 abstracts were accepted to the Eighteenth International Conference on SBS/AHT 2022.

<sup>1</sup> Barr, R. G., Barr, M., Rajabali, F., Humphreys, C., Pike, I., Brant, R., Hlady, J., Colbourne, M., Fujiwara, T., & Singhal, A. (2018). Eight-year outcome of implementation of abusive head trauma prevention. *Child Abuse & Neglect*. 84:106-14.



## BCIRPU Webinar Series

During the 2021–22 operating period, BCIRPU continued to deliver an informative [webinar series](#). Five seminars were provided by leading experts in the field, with a total of 210 participants.

### Webinar topics:

**1. May 20, 2021 | From Injury to Illegal Drug Overdose**

Mr. Alex Zheng, Biostatistician, BCIRPU

**2. July 22, 2021 | Health Stereotypes - The case of seat belts and booster seats**

Dr. Takuro Ishikawa, Senior Behavioural Scientist, BC Public Service Agency

**3. September 24, 2021 | BC Concussion Week 2021**

Ms. Sharon White, Senior Consultant for the BC Government's Sport Branch, Ministry of Tourism, Arts, Culture and Sport  
Mr. Bryan Melnyk, Policy Research & Evaluation Analyst for Injury Prevention and Built Environments, Ministry of Health

**4. November 9, 2021 | Refining Social Marketing Campaigns – A Preventable Case Study**

Ms. Laura Dale, Director, The Community Against Preventable Injuries

**5. April 14, 2022 | Using a mental imagery intervention for athletes with ACL injuries**

Dr. Benjamin Caumeil, Researcher in Sport and Health Psychology, Institut National du Sport, Paris, France



## Education and Public Information

### Social Media

In 2021-2022, BCIRPU supported and facilitated a number of social media campaigns, including concussion, road safety, poisoning, Safe Kids Week, and COVID-19-related messaging.

Social media accounts include BCIRPU, CATT, Finding Balance BC, and Prevent Shaken Baby Syndrome BC.

### BCIRPU Website

The BCIRPU website underwent a refresh in 2021-2022. The BC Children's Hospital Digital Lab redesigned the website, and content was restructured and reformatted.



# KNOWLEDGE SYNTHESIS, TRANSLATION, AND PUBLIC EDUCATION

## BCIRPU Website Google Analytics

(Due to an error in reporting, data only exists for September 2021 onward)

11,340 sessions

7,541 users

21,595 pageviews

### *Traffic Sources:*

Direct traffic = 50.62%

Search engines/organic = 34.16%

Referrals = 9.05%

Social media = 2.62%

Email = 1.23%

### *Pages with the Highest Traffic:*

Home page

Vision Zero program

Education

Injury Priorities

About



OUR NEW WEBSITE HOME PAGE.

## National Concussion Awareness Week 2021

A toolkit was developed for Concussion Awareness Week in BC for 2021, led by the BC Concussion Advisory Network (BC CAN) Subcommittee. A Proclamation was issued by the Honourable David Eby Q.C. and the Honourable Janet Austin OBC. A news release was distributed, and a summary report circulated to the BC CAN membership.

Key activities during Concussion Awareness Week included billboards, newsletters and news releases by our partners, and organic social media posts. On Twitter, the campaign hashtag #ConcussionBC was used in over 50 posts and #ConcussionWeekBC in over 60 posts.

During Concussion Awareness Week, there was a 16% increase in visits to the Concussion Awareness and Training Tool website and a 20% increase in website users, compared to the week prior.

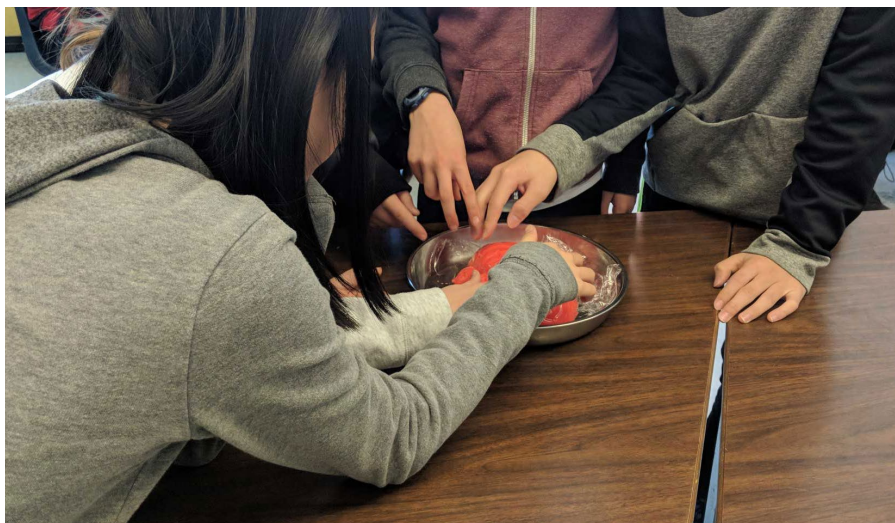


## Brain Waves

Brain Waves is an engaging program that promotes brain health among elementary school students by introducing basic neuroanatomy, the importance of protecting the brain, how best to protect it, and how to properly wear a helmet.

By bringing this injury prevention program into the classroom, students have an opportunity to learn about the human brain and nervous system, encourage them to best protect their brain from traumatic brain injuries. BCIRPU is a delivery partner for Parachute's national program.

In 2021-2022, BCIRPU trained and engaged 16 volunteer presenters and provided 39 Brain Waves virtual presentations across 33 elementary schools in BC.



AN INTERACTIVE BRAIN WAVES DEMONSTRATION.

## Education and Training

### SPPH 555

Principles and Practices of Injury Prevention is a graduate-level course at UBC's School of Population and Public Health (SPPH 555) taught by Drs. Mariana Brussoni, Shelina Babul, and Ian Pike. The 2021 course took place in Summer 2021, with students engaging in online and in-person sessions. Assessments included five assignments, a final paper, and a final presentation.

The course is based on the Canadian Injury Prevention Curriculum (CIPC), which is focused on injury prevention and control theory and practice. It has been designed to prepare students for the responsibilities they will acquire when entering an academic, research, or health care delivery work setting.

Throughout the term, students learn from the practical experiences of the instructors, guest speakers, and fellow students. Invited speakers and topics covered included:

- Injury prevention in the BC context
- Injury data and surveillance
- Injury and Indigenous communities
- Social marketing
- Concussion/TBI
- Strategy selection and behaviour change techniques
- Intimate partner violence/intentional injury



# NETWORKS, COALITIONS, AND PARTNERS

## Supporting injury networks and coalitions

### Cooperation and Collaboration

BCIRPU provides leadership and support to government, health authorities, and other stakeholders and their extensive networks and coalitions. Successful injury prevention activity in BC is dependent upon multi-sectoral and interdisciplinary collaborations. BCIRPU has established strong strategic relationships with many provincial, national, and international agencies and organizations. This enables the Unit to draw upon external expertise and resources to build capacity and better address injury prevention in BC.

### Networks and Coalitions

In addition to participating in strategic provincial, national, and international networks, during the 2021-2022 operating period, BCIRPU directly supported:

- **BC Concussion Advisory Network** — providing leadership, coordination, and secretariat support.
- **BC Concussion Advisory Network Sub-Committee** — providing leadership, coordination, and secretariat support.
- **BC Falls and Injury Prevention Community of Practice (BCFCP)** — providing leadership, coordination, and secretariat support.
- **BC Injury Prevention Committee (BCIPC)** — providing leadership, coordination, and secretariat support.
- **BC Injury Prevention Alliance (BCIPA)** — providing leadership, coordination, and secretariat support.
- **BC Health Authority Injury Prevention Community of Practice** — providing coordination and support.
- **BC Road Safety Strategy** — providing leadership support.
- **BC Trauma Council** — providing leadership support.
- **Child & Nature Alliance of Canada** — providing leadership support.
- **The Community Against Preventable Injuries** — providing injury prevention research and evaluation expertise, leadership, and spokesperson support to the injury prevention social marketing campaign.
- **Injury Surveillance Methodology Working Group** — providing co-chair and leadership.
- **Parachute** (the national NGO for injury prevention) — providing provincial leadership and coordination under the renewed memorandum of understanding.
- **Road Safety Data and Measurement Group** — providing coordination and support.
- **Trauma Association of Canada Injury Prevention Committee** — providing leadership support.
- **viaSport Safe Sport Advisory Group** — providing leadership, coordination, advocacy, and communication.





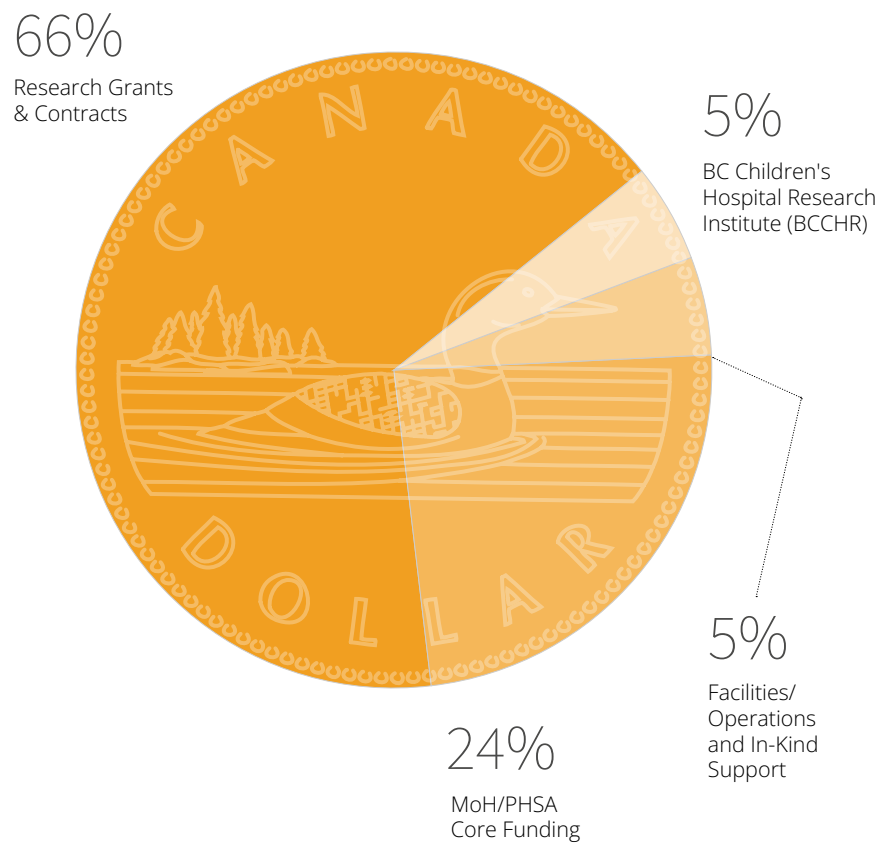
## Key Partnerships

In the 2021-2022 operating period, BCIRPU worked with the following key partners:

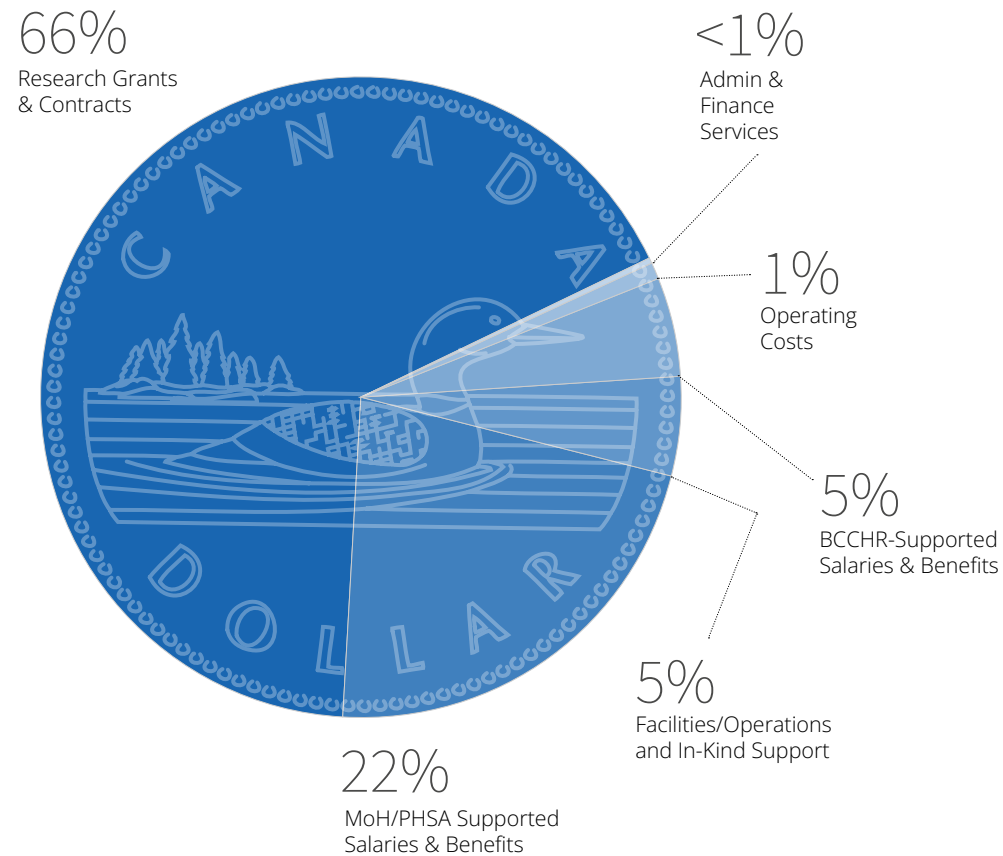
- BC Alliance for Healthy Living
- BC Ambulance Service
- BC Automobile Association (BCAA)
- BC Coroners Service
- BC Drug and Poison Information Centre
- BC Falls and Injury Prevention Community of Practice
- BC Hockey
- BC Injury Prevention Alliance
- BC Ministry of Health
- BC Ministry of Public Safety and Solicitor General
- BC Recreation and Parks Association
- BC Regional Health Authorities
- BC Concussion Advisory Network
- Brain Injury Association of Canada
- BrainTrust Canada
- Canadian Concussion Centre: Krembil Neuroscience Centre (Toronto Western Hospital)
- Canadian Red Cross
- Canadian Standards Association
- Child Health BC
- College of Health Sciences, Makerere University
- Doctors of BC
- Federation of Uganda Basketball Association
- Federation of Uganda Football Association
- First Nations and Inuit Health Branch
- First Nations Health Authority
- Fortius Sport & Health
- Health Canada Supporting Injury Networks & Coalitions
- Hockey Canada
- Holland Bloorview Kids Rehabilitation Hospital
- Injury Prevention Centre (University of Alberta)
- Insurance Corporation of British Columbia (ICBC)
- National Sports Council of Uganda
- Occupational Health and Safety Agency for Healthcare
- Parachute
- Provincial Health Services Authority
- Public Health Agency of Canada
- Public Health Ontario
- RCMP E-Division
- Richmond School District
- Road Safety BC
- Rugby Uganda
- Safe Communities
- Saskatchewan Government Insurance
- Sport Injury Research Prevention Centre (University of Calgary)
- SportMedBC
- The Community Against Preventable Injuries (Preventable)
- The Djavad Mowafaghian Centre for Brain Health
- Uganda International Olympic Committee
- Uganda Ministry of Education and Sport
- Uganda Ministry of Health
- University of British Columbia – Vancouver and Okanagan
- University of Calgary – Sport Injury Prevention Research Centre
- Vancouver General Hospital Trauma Services
- viaSport
- Winnipeg Pan-Am Concussion Clinic
- WorkSafeBC

# REVENUES & EXPENDITURES

## Sources of Revenue



## Sources of Expenditure



# AWARDS, GRANTS, PUBLICATIONS, & CONFERENCES

April 1, 2021–March 31, 2022

## Research Grants

Álvarez Jaramillo L, Bauer M, Colonna R, Crizzie A, ... Babul S, et al. #dontdrivehigh: Establishing Youth's Risk Profiles for Driving Under the Influence of Cannabis. Canadian Institutes of Health Research (2022-2025).

Babul S, van Donkelaar P, Ashton S, Jacob J, Haarhoff T. Police training tool for investigation of head injury and strangulation in intimate partner violence (IPV) cases. UBC Health Innovation Funding Investment (2022).

Babul S. Brain Waves. Insurance Corporation of British Columbia (2021-2022).

Babul S. Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). Public Health Agency of Canada (2021-2022).

Brubacher J, Evans D, Brussoni M, Bryan S, Chan W, et al. Predictors of poor health and functional recovery following road trauma: An emergency department inception cohort study. Canadian Institutes of Health Research (2018-2023).

Brussoni M, Banack H, Berger E, Elliot K, Hirsche S, et al. Dear Prudence, won't you come out to play? Peter Wall Institute for Advanced Studies Virtual Roundtable (2020-2021).

Brussoni M, Duflos M. Grandparents and grandchildren intergenerational outdoor play. Fondation DRG (2021-2022).

Brussoni M, Forer B, Guhn M. Landscapes for Outdoor Play in Canadian Early Learning and Childcare Centres: A mixed methods

study. Lawson Foundation, Lyle S. Hallman Foundation, Muttart Foundation (2022-2024).

Brussoni M, Grieve S, Herrington S. PROMoting Early Childhood Outside (PRO-ECO): An intervention to foster outdoor play in Early Learning and Childcare Centres. Government of Canada – Employment and Social Development Canada (2022-2024).

Brussoni M, Herrington S, Grieve S, Gawlick E, Scott L, et al. PROMoting Early Childhood Outside (PRO-ECO) in BC Early Learning and Child Care Centres. UBC Health After 2020 (2022-2023).

Brussoni M, McClure S, Banack H, Berger I, Elliot E, et al. Outdoor Early Childhood Education Summit: Pathways to Licensing in BC. MSFHR Convening and Collaborating Grant (2021-2022).

Brussoni M, Poole C, Herrington S, Berger I, Bundy A, et al. PROMoting Early Childhood Outside (PRO-ECO): An outdoor play intervention for children aged 3 to 5 years in early learning and care centres. Lawson Foundation (2021-2024).

Brussoni M. Early Childhood Outside: early Childhood Educator Tool RCT Study. Lawson Foundation (2019-2021).

Brussoni M. Risky Outdoor Play. BC Children's Hospital Foundation (2021-2023).

Emery C, Babul S, Belton K, Black A, Brooks B, et al. Surveillance in High School to Reduce Concussions and Consequences of Concussions in Canadian Youth: SHRed Concussions. National Football League (2018-2021)

Faulkner G, Brussoni M. Child movement and outdoor play: Exploring parental perceptions of the impact of the 2020 COVID-19 outbreak. SSHRC Explore Grant Competition (2020-2021).

Froelich Chow A, Brussoni M, Houser N, Humbert L, Feltis ME, et al. Nature's Way – Our way: Engaging in traditional indigenous ways of being as a holistic path to promoting wellness and protecting against the onset of chronic disease among early years children. SickKids Foundation & CIHR (New Investigator Grant (2020-2023).

Frohlich K, Collins P, Alexander S, Brussoni M, Fraser S, et al. Levelling the playing fields: creating the conditions for outdoor free-play to emerge in cities. Canadian Institutes of Health Research (2021-2024).

Gabbe B, Ameratunga S, Bradley C, Brussoni M, Harrison J, et al. Paediatric Validating Injury Burden Estimates Study (VIBES-Junior). National Health and Medical Research Council, Australia (2018-2023).

Gilliland J, Brussoni M, Carr D, Hoed DCD, Baxter D, et al. Parkseek. Public Health Agency of Canada Enhanced Surveillance for Chronic Disease Program (2020-2023).

Guhn M, Brussoni M, Carwana M, Janus M. Are early years still the greatest equalizer? Examining equity in early childhood emerging from the COVID era. UBC Health After 2020 (2022-2023).

Moore L, Yanchar N, Archambault P, Beaudin M, ... Pike I, et al. A Pan-Canadian Audit & Feedback Intervention for Pediatric Injury Care: Development and Pilot Implementation Study. Canadian Institutes of Health Research (2021-2026).

Oberle E, Almas A, Brussoni M, Guhn M. Get outside and play! Investigating outdoor play and children's positive development in schools and communities. SSHRC Insight Grant (2019-2023).

Oberle E, Brussoni M, Samji H, Carley L, Demlow E, et al. Needs assessment for an interactive online data dashboard for surveillance of child health and wellbeing in BC. UBC Faculty of Medicine Strategic Investment Fund (2022-2024).

Pike I, Babul S. BC Injury Research and Prevention Unit plus uplift. Provincial Health Services Authority (2021-2022).

Pike I, Macpherson A, Richmond SA, Babul S, Carsley S, et al. The unintended consequences of implementing stay-at-home policies during the COVID-19 pandemic: Violence outcomes in children and youth in Canada. Canadian Institutes of Health Research (2021-2024).

Pike I, Rothman L, Babul S, Macpherson A, Fuselli P. Examining the effects of public health policies implemented during the COVID-19 pandemic on unintentional injuries in children and youth in British Columbia and Ontario, including as related to equity and marginalized populations. Canadian Institutes of Health Research (2022).

Pike I, Rothman L, Howard A, Saunders N, Schwartz N, et al. Understanding and mitigating the impacts of the COVID-19 pandemic on children, youth and families in Canada. Canadian Institutes of Health Research (2021-2022).

Pike I. BC Injury Prevention Academic Conference. Provincial Health Services Authority (2021-2022).

Pike I. Cost of Injury Report: Atlantic Provinces. Atlantic Collaborative on Injury Prevention (2021).

Pike I. Cost of Poisoning in Canada. Parachute Canada (2021-2023).

Pike I. Developing an Indigenous First Nations process to identify and respond to community Fire Service needs. National Indigenous Fire Safety Council (2021-2022).

Pike I. Falls Prevention Campaign. Provincial Health Services Authority (2021-2022).

Pike I. Fire Safety Messaging Research: evidence-based approaches to preventing residential fires. National Indigenous Fire Safety Council/Aboriginal Firefighters Association of Canada (2021).

Pike I. Index of the Social Cost of Illegal Drugs in BC (ISCID-BC): Healthcare Costs. Ministry of Public Safety and Solicitor General of BC (2021).

Pike I. Indicators for Injury Prevention in British Columbia. Provincial Health Services Authority (2021).

Rothman L, Howard A, Soleil Cloutier M, Fuselli P, ... Pike I, et al. The Effect of COVID-19 Policies on Road Traffic Injury Among Vulnerable Road Users in Canadian Cities. Canadian Institutes of Health Research (2021-2024).

Sadler J, Evans D, Pike I, Oakey M, Lakha N. Vancouver General Hospital Trauma Patient Injury Survey. Vancouver Coastal Health Research Institute (2021-2022).

Samji H, Barbic S, Brussoni M, Guhn M, McKee G, et al. The Youth Development Instrument: Engaging Stakeholders and Linking Data to Monitor and Promote Youth Mental Health and Well-being Trajectories Beyond the Pandemic. Canadian Institutes of Health Research (2022-2025).

Sandster E, Bundy A, Brussoni M, Kleppe R, Lien K, et al. ViRMA: Virtual Risk Management – exploring the effect of childhood risk experience through innovative methods. Norwegian Research Council (2021-2024).

Tremblay M, Brussoni M, Cowie H, Mitra R, Power M, et al. Outdoor Play Canada: Outdoor play Sector Networking and Knowledge Mobilization Platform. Lawson Foundation (2020-2024).

Tremblay M, Brussoni M, Cowie H, Mitra R, Power M, et al. Outdoor Play Canada: State of the Sector Consultation. Waltons Trust (2020-2021).

Tremblay M, Brussoni M, Cowie H, Mitra R, Welsh F. Translation of the Outdoor Play Canada Website and Resources into French. SSHRC Connections Grant (2021-2022).

van Donkelaar P, Baker J, Babul S. Concussion blood biomarker analysis and the development and implementation of the CATT-IPV. Status of Women Canada (2019-2024).

Virji-Babul N, Babul S, Chan V, Gagnon I, Schmidt J, et al. Next Generation Rehabilitation Interventions for Pediatric Concussion: A Multi-disciplinary International Research Symposium. Canadian Institutes of Health Research (2022).

Virji-Babul N, Yi KM, Galea L, Babul S, Dalton N. Neural Network-based Concussion Classifier: Sex based considerations. UBC Health Innovation Funding Investment (2021).

Voss C, Brussoni M, Smith T, Winters M. Promoting active school travel in the BC Interior. UBC Health Innovation Funding Investment Award (2022-2023).

Voss C, Brussoni M. Capturing the ‘when’, the ‘where’ and the ‘with whom’ – maximizing the potential of global positioning. BC Children’s Hospital E2i Research Theme Seed Grant (2020-2022).

Zhao DJ, Griffin D, Hardisty K, Cornil Y, ... Brussoni M, et al. Emerging Research Cluster: Decision Insights for Business & Society (DIBS). UBC Research and Innovation, Catalyzing Research Clusters – GCRC funds (2020-2022).

## Research Awards

Babul S, Richmond S, Black A, Turcotte K, Bruin S, et al. Website Gold



Award – Active and Safe Injury Prevention for Sport and Physical Activity, 7th International Safety Media Awards (2021).

Babul S, Turcotte K, Bruin S, Sadler K, Beaton D, et al. Website Gold Award – Concussion Awareness Training Tool. 7th International Safety Media Awards (2021).

Pike I. Best Media Contribution to Boating Safety, Canadian Safe Boating Awards (2021).

Pike I. Service Appreciation Award, 7th International Safety Media Awards (2021).

## Journal Articles

Al-Hajj S, Chahrour M, Nasrallah A, Hamed L, Pike, I. (2021). Physical trauma and injury: A multi-center study comparing local residents and refugees in Lebanon. *Journal Of Global Health*, 11:17001. <https://doi.org/10.7189/jogh.11.17001>

Baker E, Karmali S, Babul S. (2022). Perspective from a Varsity Athlete Seeking Concussion Information to Help Recovery. *The Health & Fitness Journal of Canada*, 14(4), 10-15. <https://doi.org/10.14288/hfjc.v14i4.362>

Bauer MEE, Pike I. (2022). Development of a child-centred community-based participatory research approach to injury prevention. *Injury Prevention*, 28(5), 472-475. <https://doi.org/10.1136/injuryprev-2022-044528>

Bauer MEE, Brussoni M, Giles AR. (2021). Rural mothers' perspectives on keeping their children safe during outdoor play: "It's hard to raise a child in a small community". *Journal of Adventure Education and Outdoor Learning*, 22(3), 203-213. <https://doi.org/10.1080/14729679.2021.1902827>

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mothering and children's outdoor risky play. (2021). *Journal of Leisure Research*. <https://doi.org/10.1080/01490400.2021.1920521>

Bauer, MEE, Brussoni M, Han C. (2022). Children's play in natural environments and their development of microcultures: "We were born in the wilderness." *Children, Youth and Environments*, 32(2), 112-124. <https://doi.org/10.1353/cye.2022.0017>

Brussoni M, Han C, Lin Y, Jacob J, Pike I, et al. (2021). A web-based and in-person risk reframing intervention to influence mothers' tolerance for, and parenting practices associated with, children's outdoor risky play: Results of a randomized controlled trial. *J Med Internet Res* 2021, 23(4), e24861. <https://doi.org/10.2196/24861>

Cheng P, Zargaran A, Rajabali F, Turcotte K, Babul S. (2021). Examination of alcohol use patterns in youth: A study of alcohol-related poisonings at a pediatric hospital in British Columbia, Canada. *Journal of Child and Adolescent Health*, 5(4), 1-8. <https://dx.doi.org/10.14288/1.0416575>

Cheng T, Brussoni M, Han C, Munday F, Zeni M. (2022). Perceived challenges of early childhood educators in promoting unstructured outdoor play: An ecological systems perspective. *Early Years*. <https://doi.org/10.1080/09575146.2022.2034140>

Emery CA, Eliason P, Warriyar V, Palacios-Derflingher L, ... Babul S, et al. (2022). Body checking in non-elite adolescent ice hockey leagues: it is never too late for policy change aiming to protect the health of adolescents. *British Journal of Sports Medicine*, 56(1), 12-17. <http://dx.doi.org/10.1136/bjsports-2020-103757>

Leadbeater B, Contreras A, Rajabali F, Zheng A, ... Pike I, et al. (2022). A longitudinal cohort study of injury type, settings, treatment and costs in 2003–2013 in British Columbia youth. *Injury Prevention* 2022, 28(2), 110-116. <https://doi.org/10.1136/injuryprev-2021-044168>

Oakey M, Evans D, Copley T, Karbakhsh M, ... Pike I, et al. (2021). Development of policy-relevant indicators for injury prevention in British Columbia by the key decision-makers. *Int. J. Environ. Res. Public Health* 2021, 18(22), 11837. <https://doi.org/10.3390/ijerph182211837>

Pawer S, Rajabali F, Zheng A, Pike I, ... Babul S, et al. (2021). Socioeconomic factors and substances involved in poisoning-related emergency department visits in British Columbia, Canada. *Health Promotion and Chronic Disease Prevention in Canada*, 41(7/8), 211–221. <https://doi.org/10.24095/hpcdp.41.7/8.02>

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Schmidt J, Brown KE, Feldman SJ, Babul S, Zwicker JG, et al. (2021). Evidence of Altered Interhemispheric Communication in Paediatric Mild Traumatic Brain Injury. *Brain Injury*, 35(10), 1143-1161. <https://doi.org/10.1080/02699052.2021.1929485>

Smith J, Chhina H, Sidhu P, Brussoni M, Pike I, et al. Paediatric elbow fractures and public play spaces: adherence to standards for children's playground equipment and surfacing. *BMJ Paediatrics Open* 2021, 5(1), e001125. <https://doi.org/10.1136/bmjpo-2021-001125>

Smith J, Clemens T, Macpherson A, Pike I. (2021). Public response on social media to a social marketing campaign for influencing attitudes towards boating safety. *Int. J. Environ. Res. Public Health* 2021, 18(12), 6504. <https://doi.org/10.3390/ijerph18126504>

Wilson M, Babul S. (2021). Concussions from a University Athlete Perspective: Are we Bridging the Gap? *The Health & Fitness Journal of Canada*, 14(4), 16-21. <https://doi.org/10.14288/hfjc.v14i4.359>

Zheng A, Garis L, Pike I. (2022). Fire severity outcome comparison of apartment buildings constructed from combustible and non-combustible construction materials. *Fire Technology*, 58, 1815-1825. <https://doi.org/10.1007/s10694-022-01223-4>

## Conference Proceedings

Babul S, Turcotte K, Bruin S, Sadler K, Karmali S, Beaton D, van Donkelaar P, Mason K, Nicol B, Black AM, Cowle S. Concussions: A Broad-spectrum Injury Requiring Education and Awareness among Diverse Audiences. 2021 Virtual World Conference on Brain Injury. July 28-30, 2021 (Online/Virtual).

Black A, Turcotte K, Fidanova A, Sadler K, Bruin S, Cheng P, Karmali S, Halliday D, Taylor T, Babul S. Developing the Concussion Awareness Training Tool for Canadian varsity athletes. Canadian Athletic Therapist Association Conference. October 2021 (Online/Virtual).

Black AM, Turcotte K, Taylor T, Bruin S, Sadler K, Karmali S, Halliday D, Babul S. Developing a tailored online concussion education program for Canadian university athletes: From needs assessment to design including behaviour change strategies. Canadian Academy of Sport and Exercise Medicine (CASEM) Conference. May 13-15, 2021 (Online/Virtual).

Dalbec B, Turcotte K, Pike I. Drowning prevention strategies and booster seat legislation and safety case studies. BC Children's Hospital Research Institute Summer Study Research Program Poster Day. July 29, 2021. (Online/Virtual).

Deslippe AL, Brussoni M, O'Connor TM, Mâsse LC. A Comparison Between Canadian and American Parents' Influence on Their Boys' and Girls' Fruit and Vegetable Consumption. Society of Behavioural Medicine (SBM) 2021 Annual Meeting. April 2021 (Online/Virtual).

Faulkner G, Riazzi N, Wunderlich K, Gierc M, Brussoni M, Moore S, Tremblay M. "You can't go to the park": Exploring parental

experiences of COVID-19 and its impact on their children's movement behaviours. ISBNPA XChange Initiative. June 8-10, 2021 (Online/Virtual).

Karbakhsh M, Oakey M, Rajabali F, Zheng A, Pike I. Intentional self-harm injuries in adolescents and youth: 10-year trends, costs and pattern in hospitalization rates in B.C. BCCDC Research Week 2021. October 18-22, 2021. (Online/Virtual).

Larouche R, Moore SA, Bélanger M, Brussoni M, Faulkner G, Gunnell K, Tremblay MS. Effects of the COVID-19 pandemic on active transportation among Canadian children: results from two national surveys. 2021 International Society for Physical Activity & Health (ISPAH) biannual conference. October 12-14, 2021 (Online/Virtual).

McGregor S, Brussoni M, Goldman R. Caregivers' concerns about COVID-19 in a pediatric emergency department: A cross-sectional study. UBC Emergency Research Day. April 2021 (Online/Virtual).

O'Kane M, Ramsden R, Oberle E, Morea C, Brussoni M. Measuring outdoor free play: A scoping review. Play 2021 Conference. University of Birmingham, Birmingham, United Kingdom. July 2021 (Online/Virtual).

Pike I, Beaulieu E, Karmali S, Macpherson A. Gathering the VOICES of children and youth: A picture is worth a thousand words. Society for the Advancement of Violence and Injury Research (SAVIR) Annual Conference. Washington, DC, USA. March 30-April 1, 2022.

Riazi NA, Brussoni M, Vertinsky P, Faulkner G. "I don't even know where my kids are right now, they're out there somewhere": Exploring family perspectives of children's independent mobility. ISBNPA XChange Initiative. June 8-10, 2021 (Online/Virtual).

Richmond S, Pike I. Physical literacy for sport injury prevention: addressing sport injury as a public health issue. IOC World Conference on Prevention of Injury and Illness in Sport. Monaco. November 25-27, 2021.

Richmond S, Pike I. Telling your athletes to get a good night's sleep? Creating awareness of sleep deprivation as a risk factor for sport injury in youth athletes. IOC World Conference on Prevention of Injury and Illness in Sport. Monaco. November 25-27, 2021.

Sheperd HA, Evans T, Gupta S, McDonough MH, Doyle-Baker P, Belton KL, Karmali S, Pauer S, Hadly G, Pike I, Adams SA, Babul S, Emery CA, Yeates KO, Kopala DC, Schneider KJ, Cowle S, Fuselli P, Black AM. High school student-athletes' experiences with the COVID-19 pandemic: The impact on their physical activity engagement and mental health. Canadian Academy of Sport and Exercise Medicine (CASEM) Conference. May 13-15, 2021 (Online/Virtual).

### Invited Presentations

Babul S. Addressing Concussion in Canada. Joint Consortium on Health and the PHAC Youth Policy and Partnerships Unit Webinar: Health Behaviour in School-aged Children (HBSC) Spotlight Series Part 2 – Concussions among Canadian Youth. March 1, 2022. (Online/Virtual)

Babul S. Concussion Awareness Training Tool for Youth: A SHRed Collaboration. Research and Engagement (RACE) Symposium: A Focus on Concussion Prevention. Calgary, Canada. September 29, 2021. (Online/Virtual)

Babul S. Concussion: A Conundrum of Uncertainty. UBC Virtual Brain Health Symposium. Vancouver, Canada. May 7, 2021. (Online/Virtual).

Babul S. Concussions: Acute Urgent Health Problem and How to Support Family Practice. Department of Family Medicine: CME Grand Rounds. Vancouver, Canada. June 8, 2021.

Babul S. Concussions: An Acute Urgent Health Problem. Southridge Independent Secondary School. Surrey, Canada. May 25, 2021.

Babul S. Concussions: Are we bridging the gap on this invisible injury? Vancouver General Hospital, Trauma Services Rounds. Vancouver, Canada. September 28, 2021. (Online/Virtual)

Babul S. Concussions: How we're bridging the gap on knowledge - a global perspective. Aga Khan Hospital Grand Rounds. Nairobi, Kenya. October 12, 2021. (Online/Virtual)

Babul S. The Need for Accurate Diagnosis and Treatment. Concussion in Healthcare, UBC Continuing Professional Development. Vancouver, Canada. September 29, 2021.

Brussoni M. Children, Youth, and Environments: Resilience and resourcefulness in a COVID world. Association of Pacific Rim Universities: Sustainable Cities and Landscapes. Sydney, Australia. October 14, 2021 (Online/Virtual).

Brussoni M. Nature-based learning research collaborative, Four-part session on contemporary research: Interview with distinguished researchers. Nature-Based Early Learning Virtual Conference. Cincinnati, USA. July 26, 2021 (Online/Virtual).

Brussoni M. Outdoor risky play. Royal Society for the Prevention of Accidents webinar series. London, United Kingdom. November 17, 2021 (Online/Virtual).

Brussoni M. Reimagining Outdoor Play and Learning: A Canadian School Ground Story. Future Cities Canada: The Summit. Toronto, Canada. September 22, 2021 (Online/Virtual).

Brussoni M. Why outdoor risky play is critical in the early years – now more than ever. BC Early Years Conference. Vancouver, Canada. March 2, 2022 (Online/Virtual).

Brussoni M. Why schools need to make the time, space, and freedom for outdoor risky play – now more than ever. Physical and Health Education Canada annual national conference. Ottawa, Canada. February 18, 2022 (Online/Virtual)

## OTHER CONTRIBUTIONS

### Dr. Ian Pike

- Board Member: The Community Against Preventable Injuries.
- Board Member: Parachute Canada.
- Past Chair: Expert Advisory (Scientific) Committee. Parachute Canada.
- Co-Executive Director: The Community Against Preventable Injuries.
- Director, BC Injury Research and Prevention Unit.
- Director, BC Shaken Baby Syndrome – Intentional Injury Prevention Program.
- Editorial Board Member: BMJ Injury Prevention.
- Fellow: International Society for Child and Adolescent Injury Prevention.
- Invited Member: OECD Expert Advisory Group for the Global Injury Data Project.
- Media Spokesperson: The Community Against Preventable Injuries.
- Member: BC Concussion Advisory Network (BC CAN).
- Member: BC Health Surveillance Advisory Committee.
- Member: BC Injury Prevention Alliance.
- Member: BC Injury Prevention Committee.
- Member: BC Road Safety Strategy Steering Committee.
- Member: Canadian Agricultural Injury Reporting Expert Committee.
- Member: Canadian Collaborating Centres on Injury Prevention and Control.
- Member: Child Death Review Panel, BC Coroner's Service.

- Member: Canadian Injury Prevention and Control Curriculum – Revisions Committee.
- Member: Executive Steering Committee, Road Safety BC Strategy.
- Member: Injury Free Coalition for Kids.
- Member: International Collaborative Effort on Injury Statistics (ICES).
- Member: Research Leadership Council, BC Children's Hospital Research Institute.
- Member: Society for Advancement of Violence and Injury Research (SAVIR).
- Research Theme Co-Lead: Evidence to Innovation (E2i). BC Children's Hospital Research Institute.

### Dr. Shelina Babul

- Associate Director: BC Injury Research and Prevention Unit.
- Chair: BC Concussion Advisory Network (BC CAN).
- Co-Chair: BC Concussion Advisory Network Subcommittee.
- Co-Chair: BC Hockey Risk Management Committee.
- Director: BC Brain Waves.
- Director: BC Hockey Board of Directors.
- Director: Canadian Hospitals Injury Reporting & Prevention Program (CHIRPP) at BC Children's Hospital.
- Media Spokesperson: The Community Against Preventable Injuries.
- Member: BC Brain Injury Association Scientific Advisory Committee.
- Member: BC Hockey Safety Committee.



- Member: BC Hockey-Hockey Canada Return to Play Safety Advisory Group
- Member: BC Injury Prevention Alliance.
- Member: BC Injury Prevention Committee.
- Member: BC School Sports Sport Medicine & Athlete Safety Committee
- Member: Canadian Academy of Sport and Exercise Medicine.
- Member: Canadian Collaborating Centres on Injury Prevention and Control.
- Member: Canadian Traumatic Brain Injury Research Consortium.
- Member: Concussion Awareness Working Group (CAWG) for BC ministries of Education (MED), Health (MoH) and Tourism, Arts and Culture (MTAC) and responsible for Sport.
- Member: Interdisciplinary Trauma Network of Canada.
- Member: viaSport Safe Sport Advisory Group.
- Member: YWCA/Cridge collaboration - IPV + Concussions

### **Dr. Mariana Brussoni**

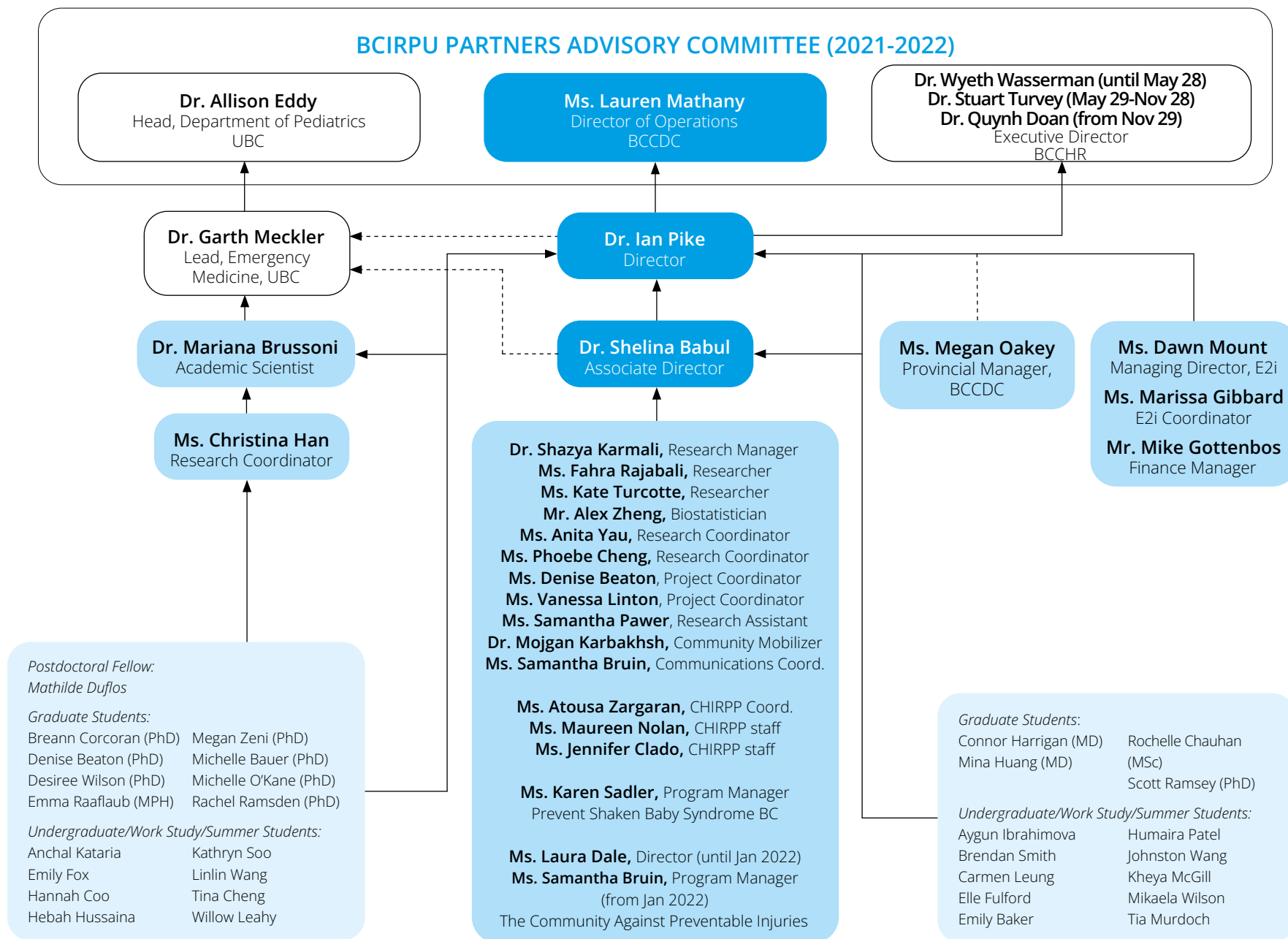
- Board Member: Outdoor Play Canada.
- Chair: University of Alabama at Birmingham & Safe Kids Worldwide: RCT Data Safety Monitoring Board.
- Co-Chair: Sunny Hill BC Leadership Chair in Child Development Search Committee.
- Director: Human Early Learning Partnership, UBC.
- Member: BC Children's Hospital Foundation Child Health Integrative Partnerships (CHIPS) Subcommittee 4: Keep Kids and Families Healthy – Across BC and Globally.
- Member: BC Nature Based Child Care Advisory Committee
- Member: Canadian Public Health Association.
- Member: International Play Safety Network.
- Member: National Advisory Committee on Recess (Physical

and Health Education Canada).

- Member: PLaTO-Net Terminology Consensus Project Steering Committee.
- Member: Public Health Association of BC.
- Member: UBC Department of Pediatrics Appointments, Reappointments, Promotion and Tenure Committee.
- Member: UBC Department of Pediatrics Merit Review Committee.
- Member: UBC School of Population and Public Health Search Committee, CRC Tier 2 in Anti-Racism in Population Health

# ORGANIZATIONAL STRUCTURE

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