Live 5-2-1-0 at BC Children’s Hospital

REPORT ON ACHIEVEMENTS (2016—2023)
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Live 5-2-1-0 is BC Children’s Hospital’s type 2 diabetes prevention initiative. We partner with communities across the province to promote and support healthy behaviours in children.

**Live 5-2-1-0 message**

Physical activity, healthy eating, and limiting screen time are important for physical and mental health. They are especially important for kids! When children develop healthy behaviours early on, they are more likely to keep those behaviours as they grow. The Live 5-2-1-0 message has four goals that children can work toward every day.

- **Enjoy—** FIVE or more vegetables & fruits every day
- **Power down—** no more than TWO hours of screen time a day
- **Play actively—** at least ONE hour each day
- **Choose healthy—** ZERO sugary drinks
All of community approach

Evidence shows that childhood health promotion is most effective when a community adopts a coordinated approach. By working together to create a healthier community environment, community partners are better able to identify where change is needed, and address the barriers families face to eating healthy and being physically active. At Live 5-2-1-0, our approach is grounded in the principles of community-based participation. We aim to foster community ownership by engaging key stakeholders and allowing them to tailor the initiative to their own community. This fosters collaboration across sectors and helps ensure a common agenda for providing children in British Columbia (BC) with equal opportunities to grow up happy and healthy.

Background

Dr. Shazhan Amed, a paediatric endocrinologist, founded Live 5-2-1-0 and continues to lead the initiative and the Live 5-2-1-0 Central Team at BC Children’s Hospital (BCCH). Our team works collaboratively with community partners and stakeholders who influence the environments in which children live, learn, and play. We offer them the expertise, resources, and tools necessary to create systems level changes so children are better supported to eat well and be active every day.

In 2009, we partnered with two pilot communities to conceptualize this initiative in BC with the goal of preventing chronic diseases in children, including type 2 diabetes. Based on the priorities and preferences identified through these partnerships, we adapted and adopted the evidence-based ‘5-2-1-0’ message to create BC’s version of, ‘Live 5-2-1-0’. Communities use Live 5-2-1-0 as a framework for action in childhood health promotion, sharing the message with families and supporting these behaviours across sectors.

Over the past decade, the Live 5-2-1-0 community network has continued to expand, with additional partners coming on board to take action in their respective regions. This has led to the creation of the Live 5-2-1-0 Knowledge Translation platform which allows for the sharing of insights, strategies, and best practice solutions within and across communities.

Through co-creation and authentic, sustainable partnerships we’ve been able to co-produce courses, tools, and resources to provide learning opportunities for healthcare providers (HCPs), educators, and other stakeholders who support health behaviour change in children. To learn more about our work in partnership with communities visit www.Live5210.ca

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(See particularly ‘Prevention Recommendations: Patient-Level Interventions’, pS189).
Bringing Live 5-2-1-0 to the BC Children’s Hospital community

As one of the leading tertiary care hospitals in Canada, BCCH is in a unique position to educate and support children, youth, and their families on the importance of healthy behaviours. With over 93,000 children and youth accessing health care services at the hospital every year, BCCH has an incredible opportunity to drive change.

After many requests and much enthusiasm from BCCH leadership, HCPs, and staff, the Live 5-2-1-0 initiative launched a campaign in 2016 to make BCCH a ‘Live 5-2-1-0 Community’. By sharing and supporting the Live 5-2-1-0 message, BCCH is modeling the importance of prioritizing childhood health promotion. The path to championing Live 5-2-1-0 is not uniform—the process looks a little bit different in every community, including at BCCH. The resources and materials developed for families accessing services and care at the hospital are tailored to meet their unique needs. The Live 5-2-1-0 message has been contextualized to different settings in the hospital and is promoted respectfully at appropriate times and locations.

Objectives of Live 5-2-1-0 at BC Children’s Hospital:

1. Build a network of Live 5-2-1-0 champions spanning all groups, levels, and departments at the hospital
2. Share the Live 5-2-1-0 message
3. Empower, train, and support HCPs to assess and promote healthy behaviours with patients and their families
4. Create a hospital environment that supports children to develop and enact healthy behaviours
5. Research and evaluate the impact of this work both in clinical practice and in the broader hospital environment

1. Build a network of Live 5-2-1-0 champions spanning all groups, levels and departments at the hospital

Everyone has a role to play when it comes to creating a healthier hospital environment for children and families. In 2018, we set out with the aim of raising awareness of the Live 5-2-1-0 message across the hospital. Our first step was to establish a network of partners who felt inspired to review their practices, procedures, and environments to better support children and families in building healthy behaviours. Since then, our team has collaborated with seventeen groups across campus and helped support actions such as those outlined in the table on page 6.
### ACTIONS AT BCCH TO SUPPORT LIVE 5-2-1-0 (2018-2023)

<table>
<thead>
<tr>
<th>Type of Action</th>
<th>Examples</th>
<th># of actions</th>
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| Community Event                     | • A mural art workshop was conducted in the courtyard next to the BCCH Live 5-2-1-0 Playbox to engage patients and families in the design of a new mural wall  
• A Live 5-2-1-0 Playbox launch party was held with patients and staff in attendance                                                 | 2            |
| Community Presentation              | • A Live 5-2-1-0 presentation was conducted at an Ambulatory Snack & Learn                                                                                                                                 | 1            |
| In-Kind Donation or Funding         | • Facilities Maintenance & Operations donated the Knaack job site box for use as the Playbox at BCCH.                                                                                                                                                     | 1            |
| Resource Development or Adaption    | • A poster and webpage were developed to highlight and promote Live 5-2-1-0 activities at BCCH  
• The Live 5-2-1-0 Patient & Family pamphlet was tailored to the hospital environment  
• The Live 5-2-1-0 Tip of the Week poster was adapted to become the ‘Tip of the Day’ Poster which is shared outside the Sibling Support Centre                                                                 | 4            |
| Stakeholder Engagement              | • Meetings were held with leadership, HCPs, facilities, and expert researchers to discuss how to engage staff, patients, and families in the design and planning process for current and future Live 5-2-1-0 projects at BCCH                                                                 | 19           |
| Environmental Change                | • Two murals were installed to create a more vibrant and inviting spaces that encourage physical activity  
• West coast themed floor and glass decals were installed on the second floor of the Ambulatory Care Building  
• Five stationary signs were installed in the Skywalk that connects Ambulatory Care Building to Sunny Hill to provide fun screen-free activities for families passing by                                                                 | 6            |
| Policy/Practice Change              | • The Live 5-2-1-0 Healthy Habits Questionnaire was established as part of the General Pediatrics, Oncology Long Term Follow-up, and Multi Organ Transplant clinics standard of care                                                                 | 3            |
| Training                            | • Live 5-2-1-0 Healthcare Provider Toolkit training workshops have been facilitated                                                                                                                                                                         | 7            |
| Other                               | • BCCH volunteers provide support for the Live 5-2-1-0 Playbox program                                                                                                                                         | 2            |
PARTNER SPOTLIGHT:
BC Children’s & Women’s Hospitals Sibling Support Centre

The Sibling Support Centre (SSC) provides safe, short-term sibling support with play in a creative setting for children who are on campus while their brother or sister is receiving care. During their first year, the SSC supported 118 families with 542 visits. Through our partnership with the SSC, we’ve found impactful ways to share the Live 5-2-1-0 message.

“A sibling’s needs are oftentimes overlooked during their brother or sister’s journey through healthcare. When siblings visit the SSC, the Centre showcases that siblings are recognized and celebrated as part of a family-centred care approach. The smiles on a sibling’s face when they receive their very own Live 5-2-1-0 themed goody bag is so rewarding to our staff and our centre’s volunteers to see. As many siblings return for extended periods of time while their brother or sister is in care, we see siblings utilizing the drawstring bags every day to bring their favourite stuffie, their personal water bottle and to show off their new Live 5-2-1-0 tattoo! Families also appreciate the kind gesture, as many are away from home for long periods of time and do not have supports in place to provide their children equipment that promotes outdoor playtime, such as the bottles of bubbles and Frisbees.”

- Rhiannon Satherley, Coordinator, Sibling Support Centre, BCCH.

Other ways the SSC has integrated Live 5-2-1-0 into its program:
• Distributed 682 resources including: stickers, temporary tattoos, colouring sheets, and scavenger hunt cards
• Facilitated outdoor play sessions using the Live 5-2-1-0 Playbox equipment
• Displayed a Live 5-2-1-0 Daily Tips poster
• Co-developed a poster highlighting Live 5-2-1-0 activities for families located at BCCH
2. Share the Live 5-2-1-0 message

The use of a common, consistent message reinforces awareness of the Live 5-2-1-0 guidelines and the visibility of the logo across campus helps illustrate the collaboration across levels and departments. When clinicians, staff, and leadership share the Live 5-2-1-0 message, it promotes a coordinated approach to childhood health promotion. Specifically, the distribution of Live 5-2-1-0 resources and tools to patients and families helps provide clear goals that everyone can work towards everyday regardless of their starting point. Examples of these resources include: posters in shared spaces, tip sheets in clinics, and promotion through social media.

In addition, permanent Live 5-2-1-0 signage and information has been installed in a glass display case in the Ambulatory Care Building, visible to families as they move through the second-floor hallway.

Since March 2018, 7,326 resources have been distributed at BCCH!
3. Empower, train, and support healthcare providers to assess and promote healthy behaviours with patients and their families

HCPs have a unique opportunity to educate and support families on the importance of building healthy behaviours during patient visits. Families place a lot of importance on the recommendations of HCPs and Live 5-2-1-0 messaging can help to initiate discussions on establishing healthy behaviours.

A pillar of our work at BCCH has been to support HCPs (physicians, nurses, and allied health) to assess and promote healthy behaviours with patients and their families. Building on our prior experience co-creating and pilot testing the Live 5-2-1-0 Family Physician Toolkit in partnership with the Chilliwack and East Kootenay Divisions of Family Practice, we set out to create a BCCH specific version. The Live 5-2-1-0 Healthcare Provider Toolkit (Toolkit) is based on the evidence and guidelines for the prevention and management of childhood obesity, and is tailored to the unique needs of HCPs at BCCH.

NEEDS ASSESSMENT

To ensure the Toolkit’s relevance, we gathered the perspectives of hospital-based HCPs as well as patients and their families on practices/experiences related to health promotion at BCCH. We also assessed their perceived needs related to delivering (HCPs) or receiving (patient/family) healthy living counselling during clinical encounters. To the right is a summary of the findings of the HCP needs assessment.

THE LIVE 5-2-1-0 HEALTHCARE PROVIDER TOOLKIT

The Toolkit was designed to enhance HCP capacity to promote healthy behaviours among their pediatric patients in clinical practice. It supports skill development and practices such as measuring, plotting, and interpreting BMI; integrating WHO growth charts into electronic medical records (EMRs); speaking sensitively and respectfully to families about healthy childhood weights; and using Motivational Interviewing (MI) techniques to promote healthy behaviours.

Expert-led group training sessions for physicians and clinic staff were held, covering:

- How to discuss body weight with pediatric patients and their families;
- Training in MI (an evidence-based, collaborative, patient-centred style of communication that can help strengthen personal motivation to change);
- How to use Live 5-2-1-0 resources and tools (within the Toolkit) during clinical visits.

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The Toolkit includes the Live 5-2-1-0 Healthy Habits Questionnaire to measure current daily behaviours related to the 5-2-1-0 guidelines and sleep. A questionnaire scoring key allows HCPs to quickly scan the patient’s responses to the Healthy Habits Questionnaires to identify areas of focus for counselling and goal setting. Other Toolkit components and resources include Live 5-2-1-0 prescription pads, fact sheets, and healthy living resources with important information on provincial programs and community-based services.

THE LIVE 5-2-1-0 APP

The Live 5-2-1-0 App was created to support children and families in setting goals related to healthy eating, physical activity, and screen time. It is a central component of the Toolkit as it allows HCPs to track behaviour change in their patients and initiate discussion of healthy behaviours with families. Upon downloading the app, children are guided through a series of 10 assessment questions. The assessment questions ask children about their daily health behaviours and willingness to change in five categories—vegetable and fruit consumption, screen time, physical activity, sugary drink consumption, and sleep. The app will also prompt the child to retake the assessment every 90 days, allowing changes in behaviour to be recorded in the app. HCPs can also ask their patients to retake the assessment before follow-up visits. When HCPs see an app user in clinic, they can see that patient’s health behaviour change progress on the app via a specific dashboard for HCPs called My Progress Report.

“The Live 5-2-1-0 message has made it possible for me to review healthy living with the majority of my patients. Parents are also becoming more aware of healthy living habits.”

- Dr. Mumtaz Virji, Division Head of General Pediatrics, BCCH.
TOOLKIT HIGHLIGHT:
Motivational Interviewing Online Training Course

The MI course was designed to scale up the in-person MI training offered as part of the Toolkit. MI is an evidence-based, collaborative, patient-centred style of communication that can help strengthen personal motivation to change. In this course, participants learn how change works, methods to determine a family’s priorities and motivation for change, and useful ways to support families as they move towards change. The online version of the course was co-developed with the University of British Columbia (UBC) Faculty of Medicine’s Department of Continuing Professional Development.

Moving the MI training online has made this important training accessible to a wider audience of HCPs in BC and across Canada.

Since its launch in May of 2021:

- 3,951 participants enrolled
- 1,117 learners completed all four modules

PILOT TESTING

The Multi-Organ Transplant Clinic (MOTC) and Oncology Long Term Follow-up Clinic (OLTFC) at BCCH piloted the Toolkit over a 12-month period starting in May 2018. The General Pediatrics clinic also implemented the Toolkit in May 2019. We consulted with HCPs and staff at each clinic to tailor the Toolkit to the needs of their patient population.

METHODS

A retrospective chart review was conducted before and after Toolkit implementation in each clinic. Data points collected included the recording of anthropometric measures and healthy living discussions.

RESULTS

Our results from the first two pilot clinics (MOTC and OLTFC) showed that the Toolkit was effective at increasing anthropometric measures. For example, BMI assessment increased from being measured at all or most visits for 35% of patients pre-implementation of the Toolkit, to 58% post-implementation. In addition, HCPs provided healthy living counselling for all topics (nutrition, physical activity, screen time, sleep etc.) significantly more frequently in the post-implementation period relative to the pre-implementation period. These findings demonstrate the potential of the Live 5-2-1-0 HCP Toolkit to enhance HCP abilities to assess the health behaviours of their patients and intervene to support change in these behaviours when necessary.
4. Create a hospital campus environment that supports children to develop and enact healthy behaviours

Environmental changes can create opportunities for children and families to be active and participate in screen free activities whilst visiting the hospital. These changes can turn passive spaces into active places, and encourage children and families to move more, e.g., taking the stairs instead of the elevator, for those that are physically able to. In an effort to create a healthier community environment where the Live 5-2-1-0 message is shared and supported, we have made some environmental changes at BCCH.

**REVITALIZED STAIRCASE IN THE AMBULATORY CARE BUILDING**

To nudge those who are physically able to step up instead of ride up, the open staircase in the Ambulatory Care Building’s main atrium was revitalized in 2019. The dull, cement stairs received a fresh coat of colourful paint drawing the attention of passersby. Fun, spirit-bear decals were installed on the glass panel railings to further entice children (and the young at heart) to follow them up to see where they lead.

**Staircase Revitalization**

- **19%** increase in overall staircase use
- **47%** increase in patient use

**Staircase Usage Pre/Post Painting & Decal Installation**

- Overall Staircase Use: Pre: 1048, Post: 1252
- Patient Staircase Users Per Hour: Pre: 19, Post: 28
ACTIVE HALLWAY DECALS & SCAVENGER HUNT ACTIVITY IN THE AMBULATORY CARE BUILDING

Installed in fall 2019, a lively west coast themed floor and glass decals transformed the second-floor hallway of the Ambulatory Care Building into an active space for children. A scavenger hunt to accompany these decals was developed to provide families with a screen-free activity they could do to help pass the time while waiting for appointments.

“The 2nd floor of the ambulatory building is much more active than it used to be with kids jumping on paw prints and strolling down the river. Kids are actively looking for things if they are doing the scavenger hunt. It’s just a lot more fun and active!”

– Kathy Withers, Clinical Educator, BCCH

Scavenger hunt cards and instructions are available for families to pick up from the Family Support & Resource Centre from 9:30am—3:30pm, Monday—Friday. Families can also collect a Live 5-2-1-0 sticker once they complete the scavenger hunt.

537 scavenger hunt cards have been used since its launch in 2020*

*Due to COVID-19 scavenger hunt cards were not distributed to families between March 2020-April 2022.
LIVE 5-2-1-0 PLAYBOX

Live 5-2-1-0 Playboxes have games and sports equipment that children and families can borrow to enjoy active outdoor play. These colourful boxes are located in parks and green spaces and are free for families to use. Since Abbotsford first launched their Live 5-2-1-0 Playboxes in October 2014, this innovative idea for improving the health of community environments has been shared widely. We now have a network of Playboxes across BC, including right here at BCCH!

In 2019, a Live 5-2-1-0 Playbox was installed in the courtyard between the Teck Acute Care Centre and the hospital cafeteria courtyard, to support children and families to be more active and enjoy play breaks together while visiting the hospital. *

*The Playbox was closed for three years due to COVID-19 but will reopen during the summer of 2023. During the closure, the equipment was used for facilitated play sessions for children attending the Sibling Support Centre.

COURTYARD MURAL

In late 2021, a two-story high mural was painted in the courtyard outside the cafeteria, adjacent to the Live 5-2-1-0 Playbox. This mural was installed to create a more vibrant and inviting space to encourage patients, siblings, and families to step outside and engage in outdoor play. The art was created by local muralist Todd Polich, who led a co-creation session with patients and families at BCCH to develop a design that promotes feelings of health, connectedness, nature, and playful adventure.
THE HEALTHY MINDS CENTRE MURAL

In early 2022, a series of murals were installed in the main stairwell at the Healthy Minds Centre to encourage patients and families (who are physically able), to step up instead of ride up to different floors. The murals were created by Stó:lō, Coast Salish artist Carrielynn Victor from the community, XwChí:yóm (Cheam). The murals include elements of Coast Salish designs to reflect traditional values and stories, and were designed with input from over 60 patients, visitors, and staff. They aim to make viewers feel more connected to nature and to elicit feelings of being active outside.

“We are so grateful to have such a beautiful and engaging mural in our stairwell in the Healthy Minds Building. Many more of the children, youth and families are choosing to take the stairwell over the elevator. It has become a great welcoming, engagement tool with our families, many commenting on how lovely it is in their appointments.”

–Sonja Sinclair, Director, Outpatient Psychiatry and Specialized Medical Programs, BCCH

Stairwell use increased by 15% after the mural was painted
LIVE 5-2-1-0 TRIVIA AND SPOT THE DIFFERENCE

In 2022, five stationary signs in the skywalk between the Ambulatory Care Building and the Sunny Hill Health Centre for Children were transformed into a Live 5-2-1-0 Trivia Challenge and Spot the Difference game. Solutions to these games are provided via a webpage accessed via QR code.

In the first year, the QR code with the Spot the Difference answers was scanned 57 times

5. Evaluate the impact of this work both in clinical practice and in the broader hospital environment

At BCCH we are committed to:

ENGAGING WITH PATIENTS AND BCCH STAFF

• Prior to completing any environmental changes at BCCH, including our two murals, the floor decals in the Ambulatory Care Building, and installing the Live 5-2-1-0 Playbox, there was comprehensive consultation with both patients and staff. Our mural artists led co-creation sessions and sought input from over 60 patients and staff to ensure murals were relevant and welcomed by the BCCH community.

• Before developing the Toolkit, we assessed the needs of both families and staff regarding the delivery and receipt of counselling during clinic visits. This thorough measurement of stakeholder needs allowed us to ensure the training was tailored to staff at BCCH, and that content was relevant and helpful for families and patients.

COLLECTING PROCESS INDICATORS THROUGH OUR PARTNERSHIP TRACKING TOOL

• From 2016 to 2023 we’ve tracked the distribution of over 7300 resources and 45 actions that partners have taken to make BCCH a healthy place for children and families. We continue to be committed to tracking the important work our partners do across the hospital to support the Live 5-2-1-0 initiative at BCCH.

EVALUATING OUR IMPACT

• We continue to evaluate and monitor our work at BCCH, using innovative ways to measure the impact of our new and existing projects.

Looking forward

With increasing interest in the Live 5-2-1-0 initiative, we will continue to support ongoing projects and seek opportunities to implement new actions across BCCH. We will maintain our community-based approach, share our key priorities through our knowledge exchange platforms, and collect data to demonstrate the impact of Live 5-2-1-0 at the hospital and beyond. Outlined on page 17 are the next steps in supporting the future of Live 5-2-1-0 at BCCH.
Scale up the Healthcare Provider Toolkit

HCPs are key contributors to the efforts to support healthy childhood behaviours, both within their clinical practice and in the broader community. The Toolkit provides HCPs at BCCH the opportunity to initiate discussions around healthy behaviours and healthy childhood weights in a sensitive and respectful way. Over the next few years, our aim is to have a wider dissemination of the Toolkit in new clinics across the hospital.

Continue to train healthcare providers in motivational interviewing

A key component of the Toolkit is the use of MI techniques to promote healthy behaviours. We will continue to share and promote the online MI course across BCCH, with the aim of providing this training to the majority of HCPs at the hospital.

Live 5-2-1-0 App and Shapedown BC

The Live 5-2-1-0 App was co-created and pilot tested with children and HCPs at BCCH. In particular, Shapedown BC (Shapedown), a family-centered healthy lifestyles program for children, teens and their families, has been a key partner in refining our app. Shapedown staff provided valuable feedback on the initial version of the App and were integral in guiding the upgrade of the app in 2021. New functionality in version 1.2 has made the Live 5-2-1-0 App better able to meet the needs of both families and HCPs at BCCH and beyond.

Maintain existing partnerships and engage additional champions

Our team will continue to support and strengthen our key partnerships at BCCH including with Shapedown, the Sibling Support Centre, and the Family Support & Resource Centre. We will also actively seek out new individuals and groups who are passionate about promoting healthy behaviours and connect them to our network of Live 5-2-1-0 partners at the hospital.

Environmental changes across the BCCH campus

After multiple successful projects, we have seen the benefit of collaborative and innovative efforts to create and sustain healthy environments for children at BCCH. Therefore, we will continue to look for shared opportunities and funding to implement further environmental changes across the hospital campus.

Get in touch

Please reach out to us at info@live5210.ca if you’d like to learn more about Live 5-2-1-0 or to discuss how the initiative could be incorporated in your department.
We thank all our Live 5-2-1-0 partners at BCCH and those who have supported this initiative over the past 8 years; this work would not have been possible without your valuable input, effort, and leadership.

We also extend our deepest gratitude to our past and present funders for their support.