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FOCUS ON

Early Childhood Developmental Surveillance and Screening in Ontario Public Health Units

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Introduction

This Focus On provides a situational assessment of the current role of public health in conducting early identification including developmental surveillance and screening of developmental delays and other conditions in children 0 to 6 years, and the main challenges and limitations associated with current practices in Ontario Public Health Units (PHUs).

Background

Optimal early childhood development is essential for health across the life course and a social determinant of health.[1] From birth to age 5 years is a critical period where rapid brain development occurs with the highest number of neural connections that an individual will have in their lifetime.[2] It is during this time that supporting positive childhood experiences including safe, stable and nurturing relationships with caring adults is foundational to building resilience and setting children on healthy trajectories.[3] It is also an optimal time for early identification of possible concerns, delays, or conditions and implementation of interventions that can improve health and well-being.[4]

Developmental surveillance and screening can subsequently result in the early identification of developmental vulnerability/concerns that may include developmental delays (including gross motor, language, and global developmental delay), behavioural and emotional problems, and other conditions. Developmental surveillance is considered to be part of standard clinical practice for primary care providers of children in the early years according to both the Canadian Paediatric Society (CPS)[5] and the American Academy of Pediatrics (AAP).[6] Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD) can also be flagged as a concern during surveillance and further evaluated through screening and evaluation. Please refer to the Appendix A for definitions of these terms and Table 1 for a comparison of developmental monitoring, surveillance, screening, and evaluation.

Developmental surveillance is "the ongoing monitoring of development, identification of risk factors and elicitation of parental concerns" conducted by both parents and health care providers.[7] This should be a universal standard of care for all children. According to the AAP, developmental surveillance has 6 components:

1. Eliciting and attending to the parents' concerns about their child's development
2. Obtaining, documenting, and maintaining a developmental history
3. Making accurate and informed observations of the child
4. Identifying risks and strengths and protective factors
5. Maintaining an accurate record of the process and findings
6. Sharing and obtaining opinions and findings with other professionals, such as child care providers, home visitors, preschool teachers, and developmental therapists, especially when concerns arise[6]

Developmental screening refers to the use of standardized tools to search for developmental delay and other conditions conducted by a health care provider. Screening can be targeted or universal; meaning for children who are identified as high risk versus among children who do not show any apparent signs of developmental delay, are not considered to be at high risk for having developmental delay, or whose parents or clinicians have no concerns about development.[7] Various health care agencies and organizations have differing recommendations on whether screening should be universal or targeted.

PHUs in Ontario often use the terms developmental monitoring and surveillance interchangeably, however definitions from the Centers for Disease Control and Prevention (CDC) and AAP maintain them as separate actions, conducted by parents (developmental monitoring) and health care providers (developmental screening). As such, the definitions have been kept separate in Appendix A and Table 1. Henceforth in this document, in reference to the role of public health, we refer to developmental surveillance as including developmental monitoring. Developmental evaluation will not be expanded on as it is out of scope of practice for public health practitioners.

Table 1: Comparison between the Different Phases of Early Identification

Descriptor	Developmental Monitoring	Developmental Surveillance	Developmental Screening	Developmental Evaluation
Who	Parents, grandparents, or other caregivers	Parents or caregivers, child care providers, health care provider	Health care provider, early childhood teacher, or other trained community provider	Developmental paediatrician, child psychologist, or other trained provider

Descriptor	Developmental Monitoring	Developmental Surveillance	Developmental Screening	Developmental Evaluation
What	Look for developmental milestones	Look for developmental milestones	Look for developmental milestones	Identify and diagnose developmental delays and conditions
When	Birth to 5 years	Birth to 5 years	Birth to 5 years AAP specifically recommends at 9, 18, 30 months of age	Whenever there is a concern
Why	To help celebrate your child's development, talk about your child's progress with doctors and childcare providers, learn what to expect next, identify any concerns early	To help celebrate child's development, talk about progress, learn what to expect next and identify concerns early	To find out if the child needs more help with development, if more developmental evaluations or assessments are needed, or if referrals to additional services are needed	To find out if your child needs specific treatment or if you child qualifies for early intervention
How	With easy, free checklists (e.g., CDC milestones, Looksee checklist)	Use a developmental checklist (e.g., Rourke Baby Record, CDC milestones, Looksee checklist)	Use a formal validated screening tool (e.g., ASQ)	With a detailed examinations, formal assessment tools, observation, and surveys from parents and other caregivers, often in combination, depending on the concern.

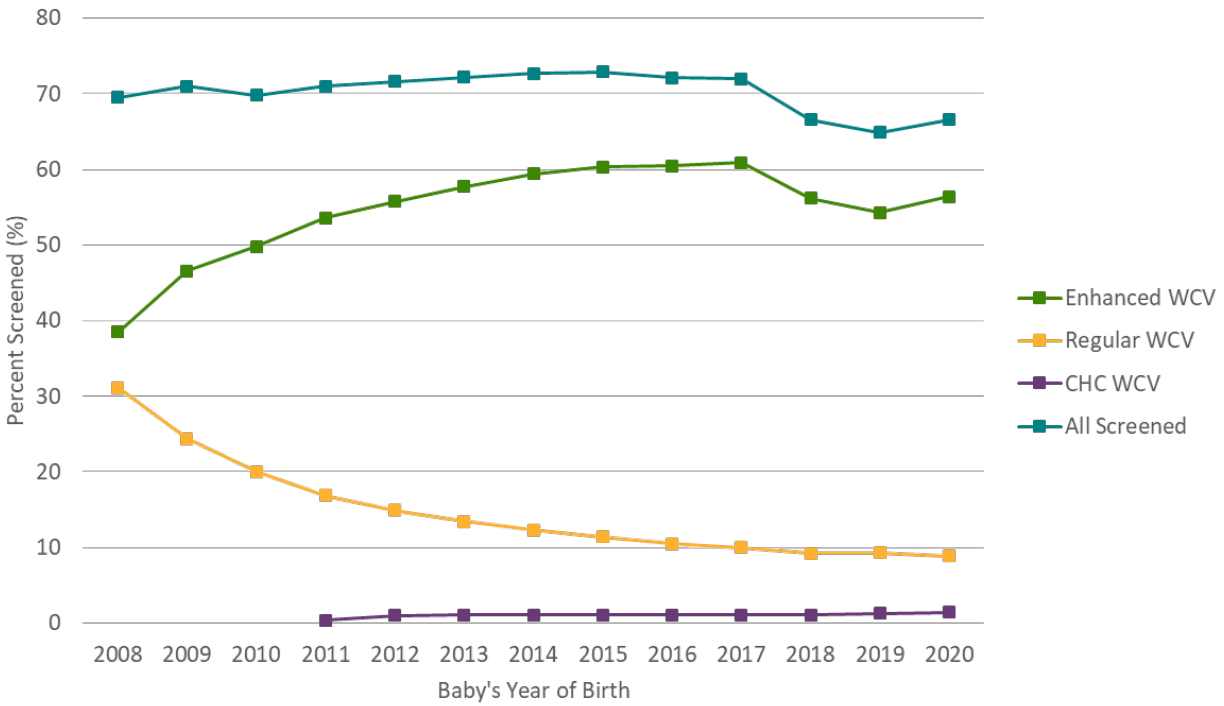
Source: Adapted from the CDC; 2024.[8]

In 2009, Ontario's Ministry of Health introduced the 18-month Enhanced Well Child Visit (EWCV), also referred to as the Enhanced Well-Baby Visit (EWBV), a primary care fee code that physicians can bill to the Ontario Health Insurance Plan (OHIP) by assessing children's development through the administration of a checklist or screening tool.[10] This policy was endorsed by the CPS and College of Family Physicians.[5] Since the implementation of this fee code, the uptake of this visit across Ontario is 57%; increasing from just under 40% to a high of 62% in 2019 (Figure 1).[11,12] Despite the emphasis on addressing development as early as 18 months in primary care, more research is needed to understand the outcomes of this policy initiative. While options for developmental surveillance in primary care include the Rourke Baby Record[13,14] and the Looksee/NDDS,[15] it is unknown exactly what developmental surveillance checklists or tools are being used and what care pathways are available to children who are identified with a concern.

In 2016, the Canadian Task Force on Preventive Health Care (CTFPHC) released a strong recommendation against universal development screening, citing a lack of high quality research to support the practice and the high potential for false positive identification.[7] The Task Force maintained that on-going developmental surveillance at regular well-child visits and a general screener used at 18 months to evaluate all developmental sectors are still important parts of clinical practice. This recommendation is in contrast to the AAP, that recommends that developmental surveillance occur at all well-child visits with a general developmental screening tool at 9, 18 and 30 months of age and ASD specific screening tool at 18 and 24 months of age.[6] These varied positions may cause confusion for primary care providers in Ontario who are being incentivized to conduct surveillance using a tool.[5] During this time, public health had a role in promoting the EWCV with their local primary care providers and ensuring families in Healthy Babies Healthy Children (HBHC) were screened.[16]

As public health unit staff returned to their program standard work in 2023 after redeployment to the COVID-19 response there was a need to restart programs in the Healthy Growth and Development Program. One area health units were less confident in re-starting was early identification of children with possible developmental delays and promoting the 18-month EWCV. Research has shown a substantial decline in well-child visits in infants and children in Ontario during the first year and a half of the pandemic.[17] The authors concluded "we document a significant decrease in well-child visits for infants and children, indicating that developmental surveillance catch-up for infants and children is crucial."[17] There is a need to understand the role of public health in developmental surveillance to complement the services provided by primary care, and to access children and families without primary care providers. This Focus On seeks to address the question **what is the role of public health in early identification of developmental concerns in young children**?

Figure 1: Proportion of Eligible Children (17-24 months) Receiving the 18-month Enhanced WCV, Regular WCV, and Community Health Centre (CHC) WCV in Ontario



Source: Plumtree L, Mondor L; 2024[12]

Methods

A situational assessment of all PHU websites was conducted to examine what services and activities related to developmental surveillance or the 18-month EWCV that were advertised to the public. In addition, between March and May 2023, an informal survey of PHUs was conducted through the Healthy Growth and Development (HGD) Evidence Network. Managers or PHU staff in the HGD Programs answered the following seven questions related to current and future developmental surveillance activities, gaps in their communities, tools used, and their desire to help work on a provincial road map:

1. Do you have a system in place to track how well primary care is performing developmental surveillance in your community to achieve the mandates of the Ontario Public Health Standards (OPHS)?
2. Do you collaborate with primary care providers or other groups in your community on any of the following related to developmental surveillance: providing resources, support, conduct physician detailing with primary care providers or other groups in your community on administering developmental surveillance?
3. Have you identified any obvious gaps in the current way that developmental surveillance is carried out in your community?
4. Do you feel there is a role for local public health units to be more directly involved in the administration of developmental surveillance in your community (e.g., offering to administer a developmental surveillance tool, such as the Looksee, for children without a family physician at your health unit)?
5. What developmental screening tools does your PHU use currently (if any)?
6. If you use a screening tool, do you forward to primary care providers or other social services organization to use for their clients? What other supports are provided to a family with identified needs?
7. If PHO were to support the development of a provincial framework for developmental surveillance, would your PHU like to be involved in a working group to help with development?

The HGD Evidence Network is a group of Managers and PHU staff in HGD or Child and Family Health teams in PHUs who represent diverse geographical areas of Ontario, and PHU governance structures. Participation in this Network can include medical officers of health, associate medical officers of health, directors, public health nurses, and other staff. The purpose of the Network is to discuss evidence and best practices supporting the programming in the current Ontario HGD Program Standard, and to have a forum for knowledge dissemination/translation of initiatives, research, and projects happening at the local PHU level. The Network meets every two months and is chaired by the Applied Public Health Science Specialist in Healthy Growth and Development at Public Health Ontario.

Results

A total of 30/34 (88%) public health units responded to the survey. Responses were synthesized and are reported by question and common themes. Rates of 18-month EWCV completion by PHU have been published elsewhere.[18]

Measuring Developmental Surveillance Activities and Outcomes

Three themes emerged when PHUs were asked about their ability to use data to assess developmental surveillance activities and outcomes in their local communities:

1. Current data issues
2. Data gaps
3. Additional data initiatives and sources

Overall, 22 (73.3%) PHUs reported they did not have a system in place to track how well primary care was performing developmental surveillance in their community. Eight health units identified the 18-month EWCV OHIP fee code as the main indicator, however a few mentioned that it is not regularly or routinely reported on.

CURRENT DATA ISSUES

PHUs reported not having enough capacity in their team to do this type of surveillance. A few PHUs mentioned getting provincial data on the 18-month EWCV through an ICES ARHQ request was helpful.

For PHUs that routinely report on the proportion of young children who have an 18-month EWCV with a family physician or pediatrician, IntelliHealth currently does not have the ability to look at age in months therefore the denominator is age 12–24 months instead of 17–24 months. These methods, outlined by the Association of Public Health Epidemiologists in Ontario (APHEO) Core Indicator group, are incorrect because infants at 12 months are ineligible for the 18-month EWCV and including them artificially inflates the denominator, and decreases estimates of the percent of those who received it.

DATA GAPS

There were 3 main gaps identified:

- More information is needed on what types of developmental surveillance and screening tools are being used by partners including primary care, and what referrals are happening.
- More accessible data is needed on the results of the screening tools. Also, if a nurse practitioner (NP) completed the screen, it is not necessarily captured by the OHIP indicator. There is currently no process for collecting this information at a local level.
- Some PHUs had concerns about the validity of the 18 month EWCV indicator because it does not capture what health care providers are actually doing in the visit or the outcome of the screen.

ADDITIONAL DATA INITIATIVES AND SOURCES

There were 7 different additional data initiatives and sources mentioned:

- Calling All Three Year Olds is a collaborative initiative with school boards, EarlyON professionals, preschool speech and language services, as well as Early Years Public Health Nurses to promote the importance of and collect developmental surveillance data for three year olds starting school the following year.
- Some health care providers complete a tracking and referral form so that a collaborative partner group consisting of EarlyON development specialists, speech and language services, PHU, and a representative of all the Family Health Teams (FHTs) and Community Health Centres (CHCs) could collect this development and referral data.
- One PHU mentioned tracking training that has been provided (e.g., ASQ training)

- A robust campaign to increase the rates of the 18-month EWCV was reported by one PHU however not in the past several years as rates were improving. Since rates have decreased during the pandemic, this indicator will be monitored but there is no plan to prioritize activities to improve the rates.
- Two PHUs reported using the Early Development Instrument (EDI)[19] data for child development
- The HBHC screen has a question related to infant/child development "Parent(s) identified a risk factor? E.g., hearing, speech and language, communication skills, social development, emotional development behaviour, motor skills, vision, cognitive development, self-help skills."
- One PHU reported using an additional referral form for community providers (including primary care) – growth and development concerns are an option on the referral and therefore it is assumed that some form of developmental surveillance/screening has taken place prior to the referral. However, there is no way to confirm or measure this.

Collaboration with Community Partners

The primary early identification activities reported by PHUs were providing resources to primary care providers (40%) or to other community partners (30%) (Table 2).

Table 2: PHU Responses to Collaboration with Community Partners on Developmental Surveillance Activities

Do you collaborate with primary care providers or other groups in your community related to developmental surveillance?	N (%)
No	5 (16.7)
Yes	3 (10.0)
Providing resources to primary care (e.g., Looksee checklists; Enhanced 18-month-well baby visit & referral options checklist), or reminders to complete 18-month EWBV	12 (40.0)
Providing resources to community agencies/partners* (e.g., school boards, EarlyON)	9 (30.0)
Use of PHN Liaison role/Health Care Engagement Group/ Healthcare Provider Outreach PHNs/Primary Care Stakeholder Engagement Advisor	4 (13.3)
Kindergarten registration events	2 (6.7)
ASQ used to refer to childcare and Children's Treatment Centres	1 (3.3)
Partner with Smart Start Hub (e.g., KidsAbility)	3 (10.0)
Refer to developmental service agency	1 (3.3)
PHU Representation on Best Start Networks (group promotes 18 month EWBV, focuses on referral pathways for primary care providers)	1 (3.3)

*Types of Community Partners: EarlyON Centers, Family Space, Infant Development, Children's Services, School boards, Community Health Centers, Community Living, Children's Services, local hospitals, Children's Treatment Center/Speech and Language, Our Children Our Future, Better Beginnings Better Futures

TYPES OF RESOURCES AND SUPPORT

- Hand out to families about how to access and use the online Looksee tool.
- 18-month EWCV package provided to all local health care providers with the 18-month Looksee and resources for the visit.
- Promotion of McMaster training online with physicians/nurse practitioners in primary care in the region.
- Promotion of 18-month EWCV with parents to know what to expect at the 18-month visit and to contact their primary care provider to book/complete and take the Looksee checklist.
- Use of media and mailed packages to consenting HBHC families (obtained consent at hospital discharge for periodic mailings), as well as providing/promoting Looksee checklists at birth/discharge and at Junior Kindergarten entry/registrations.
- Refer families to community partners (e.g., Thames Valley Children's Centre, All Kids Belong) who conduct developmental screening in childcare centres. From there, letters can be sent to family doctors about children who are lagging in development so that the physician can refer families if needed (i.e., to a developmental surveillance clinic).
- Internal flow chart created by the PHU to identify which physicians/community partners have received which resources.

TRAINING

- Internal to PHU staff: Extensive training with the ASQ and ASQ-SE was done with many agencies working with the 0-6 year old population.
- External to community partners: Health education and health communication including the dissemination of information and resources to community groups involved in developmental surveillance

COMMITTEES

- Newly established Early Identification Committee in the community and planning more outreach with them
- Community collaborative that focuses on ensuring children are developmentally ready to start school. This collaborative will be looking at developmental surveillance and creating a plan moving forward.

OTHER SERVICES IN COMMUNITIES

- Community Living, Children's Services spearheads the Let's Learn Kindergarten registration clinics.
- Screening for development in childcare centres (using ASQ)

CHALLENGES

- **Efforts to support primary care were not always successful**, therefore PHUs coupled that approach with direct promotion of the EWCV to parents. Some health units described little or no collaboration with primary care partners and were looking to improve this through quality improvement projects.

- **Resuming work post-COVID-19**. One PHU described "there has not been any communication with primary care providers or other community groups on developmental surveillance since the onset of the COVID-19 pandemic. In the past, we have worked with primary care providers to promote the 18 month and Rourke tools and identified opportunities for referral through a PHN Liaison role. Since COVID our involvement in the Healthy Toddler Visit working group has shifted and is no longer consistent due to staff capacity." Multiple health units described developmental surveillance work pre-COVID. Collaboration with local family health teams or practitioners is often more ad hoc and varies within communities. Four health units mentioned activities and collaborations pre-COVID, but that nothing has happened since the pandemic.
- **Limitation of kindergarten registration clinics**: It is not comprehensive as it is voluntary for families to come to the events. While screening is offered at Kindergarten Registration clinics and these reach many children, they are done nearly a year before school entry and for referrals to be made, earlier screening is more effective. This is why developmental surveillance and/or screening in childcare may be a strategy to reach children earlier.

FUTURE ENGAGEMENT CONSIDERATIONS

- Discussions on-going about doing another initiative regarding the EWCV particularly since many of the in-person visits were not conducted during the pandemic.

Gaps in Developmental Surveillance in Communities

Overall, 25 (83.3%) of PHUs identified gaps in the current developmental surveillance activities being carried out in their communities. Table 3 presents the most commonly identified gaps. Inconsistency in developmental surveillance or screening tools, no community or provincial strategy, and the dearth of data and barriers to accessing data were the top three reported gaps in developmental surveillance.

Table 3: Reported Gaps in Local Communities Developmental Surveillance Activities

Identified gaps	N (%)
Inconsistency in development tools, surveillance/screening methods, referral pathways	9 (30.0)
No coordination provincially or in local regions or overarching strategy/plan/pathway for families, health care providers or public health practitioners	6 (20.0)
Barriers to accessing/sharing data – from health care providers and community partners	6 (20.0)
Screening is not universal. Children are being missed if not in licensed childcare centres, not attending community programs, or no health care provider	5 (16.7)
Lack of family physicians in the region	4 (13.3)
Lack of funding specific to development in public health and community agencies	2 (6.7)
Not a priority in the health unit in the post-COVID recovery plan	1 (3.3)
Extensive waitlists for programs or specialist services in our region (i.e., several months)/ lack of services	1 (3.3)

Developmental surveillance is not universal. Currently, there is a lack of primary care physicians in some regions and children not attending childcare or involved with a community agency are not getting routine developmental surveillance. There may be a gap for those in the community who are not accessing licensed childcare or if their health care provider is not completing screens with the families. Children between 18-months to school entry no longer receive childhood vaccines during this period and, if a child is healthy, a child is not seen by their primary care provider on a regular basis. There were three identified groups of children not receiving developmental surveillance or screening:

1. Those without a primary care provider
2. Those not attending childcare or licensed childcare
3. Those not involved in any community agencies or groups

Catch-up on pandemic-related delays in surveillance and screening. In some regions, developmental surveillance with primary care and EarlyON providers was paused during the pandemic therefore efforts to promote surveillance/screening should be increased post-pandemic.

FUTURE OPPORTUNITIES

- Tracking of screening completion is limited. It would be beneficial to have data from the Looksee Screening website on where screens are being completed (i.e., postal code) and the results of those checklists.
- Public health does promote developmental screening to parents, and this could be enhanced though postpartum and discharge letters and through local newsletters to ensure parents are aware of and can access available tools.
- Public health should leverage the skills of the public health nurses to actively screen and assess children's development in their interactions.

Role of Public Health Units in Developmental Surveillance

Twenty-two PHUs (73.3%) reported that they perceived a role for public health practitioners to be more directly involved in developmental surveillance or screening activities in their communities (e.g., the administration of screening tools), three (10.0%) said no, and five (16.7%) were unsure. The overall consensus was that public health could be doing more in this area, however what that entailed was uncertain. Some PHUs reported already screening at various encounters with clients (drop-in clinics, phone lines), as well as through HBHC.

Current settings for conducting surveillance within set public health programs:

- HBHC home-visiting
- Drop-in clinics (e.g., Baby & Me Drop-In)
- Phone Line – if parent calling with developmental concern
- Parents attending public health programming in the community
- Screening at kindergarten registration

Potential settings for conducting surveillance within set public health programs:

- Community vaccine clinics (offered to children without a primary care provider)
- Public health operated dental clinics

HBHC PHNs are directly involved in developmental surveillance with their clients. Overall 97% of PHUs currently use the Looksee checklists either to provide to physicians or with families. Some use a staged approached: If two or more NOs are identified from the Looksee, then PHNs will do an ASQ, which is more in-depth and validated screening tool and can more specifically identify potential developmental delays. One HBHC program also has access to the Hawaii Early Learning Profile (HELP), activities which provide parents activities they can do at home if there are concerns. Family Visitors in the HBHC program can reinforce how to play with children to enhance development during home visits.

REASONS/RATIONALE FOR A PUBLIC HEALTH ROLE IN DIRECT ADMINISTRATION OF DEVELOPMENTAL SURVEILLANCE TOOLS

- One health unit was informed by their school partners that they have been seeing a lot of children presenting with developmental concerns in kindergarten, therefore the health unit has started brainstorming around the need for more intervention.
- Working with the school boards to provide Looksee screens to all parents in the JK/SK packages, screen regularly, and provide ways to build those milestones in local children through HBHC program.
- There may be a role for PHUs depending on gaps in specific communities. For Infant and Early Years Mental Health, public health has a significant role with HBHC as central access point. Currently, some PHNs use ASQ/ASQ-SE in home-visiting programs and in some other programs within Healthy Growth and Development and they facilitate referrals for follow up and communicate results with physicians.
- For priority populations - Four health units identified a role local public health in supporting developmental surveillance with priority populations (e.g., newcomers, families unattached to primary care providers, underserved populations, high-risk groups (e.g., adolescent parents), etc.). One health unit reported using the Looksee and the Rourke at a Nurse Practitioner clinic that supports a priority population (30% of clients that use this clinic do not have OHIP).
- One health unit responded that PHUs should coordinate or lead data collection and sharing.
- Developmental surveillance and screening should be available to all children (not just those without physician), because it is unknown if primary care is actually completing surveillance and/or screening, and if developmental referrals are being made. This would ensure early identification and intervention of developmental concerns for all children.
- There is an opportunity for health units to conduct assessments that are more robust than the Looksee (e.g., ASQ-SE).

REASONS/RATIONALE FOR NOT HAVING PUBLIC HEALTH INVOLVED IN DIRECT ADMINISTRATION

- The administration of this at a universal, community level is resource intensive and would require funding. One health unit noted that “it would be very valuable to be part of this but we are not currently in a position to administer or lead this.”
- No standardized approach. What is the right age to screen? How to leverage what is already happening? Who is the best sector to do this? PHU? Childcare Sector? Since there is no consistent approach, there could be business case as to why it needs to be led by a mandate of public health professionals. Surveillance could be situated with EarlyON, Front Door, municipal parks, recreational departments or school boards. Surveillance should have primary care involvement.
- There is concern of where to refer people to if a child is identified with risk since services are lacking in the province.

- Two PHUs specified that public health can promote the EWCV; however, the most effective means is to mandate reporting through primary care and public health programming interacting with families.
- The role for public health may be to lead in building capacity in the community for universal developmental surveillance and/or screening with a community pathway. It has been identified with newer early years' sector professionals that more education may be needed regarding the early relational health and child development to understand the importance of screening. This education would provide opportunities to support parents early in child development and include how to have these conversations with families (going beyond just screening).
- Two PHUs described that rather than playing a larger role in administering the tool, public health has a role in influencing other aspects including education and training, policy development, health communication, and fostering inter-agency links encouraging the consistent use of surveillance tools and referral pathways.
- Adding direct administration of a tool is not ideal for PHUs with limited capacity or large geography because it would be optimal to have parents access/complete developmental surveillance at more regular intervals (e.g., through primary care).

CHALLENGES

- Some PHUs used to support early identification clinics but they have not run for a very long time. Their early identification partners shifted in how they connect with families, so it is unclear if this is a role for the HGD portfolio in health units to consider anymore.
- Developmental surveillance clinics/drop-ins were not well-attended.
- Screening at Kindergarten registration is too late, if any intervention is needed, the child may be added to waitlist and will start school before they get access to developmental services.

Developmental Surveillance and Screening Tools Used in Public Health

The majority of PHUs reported using or promoting the Looksee checklist as a surveillance tool. Over half (53.3%) of PHUs also reported using the ASQ or ASQ-SE (Table 4). There were a number of other tools also reported, some specific to development, and some tools that would identify risk factors to a child's development such as the Edinburgh Postnatal Depression Scale (EPDS).

Table 4: Developmental Surveillance and Screening Tools used in Public Health

Developmental Surveillance/Screening Tool	N (%)
Looksee/NDDS	29 (96.7)
Ages and Stages Questionnaire (ASQ)	16 (53.3)
ASQ-Social Emotional (ASQ-SE)	11 (36.7)
Other (MCHAT-R, ERIK, About My Child (SSH Tool), DISC Preschool Screen, Alberta Infant Motor Scale, Receptive-Expressive Emergent Test, PHQ-9, EPDS, Infant-Toddler Sensory Profile, Behavior Rating Inventory of Executive Function Preschool, language checklist, Early Years Check IN tool - McMaster)	10 (30.0)

MCHAT-R: Modified Checklist for Autism in Toddlers, **ERIK:** Early Referral and Identification Kit, **SSH:** Smart Start Hub, **PHQ-9:** Patient Health Questionnaire, **EPDS:** Edinburgh Postpartum Depression Scale

For those PHUs who responded that they used a surveillance or screening tool, 21 (70%) reported that they forwarded the results to either primary care providers or other social services organizations if their clients requested it, consented and provided permission, or if the client was being referred to a Children's Treatment Centre. Six PHUs did not send the results to another provider and three were unsure. One PHU reported providing a decision-making tool to primary care that coincided with the 18-month EWCV. This would allow primary care providers to determine what community supports to refer to when a concern is identified at time of assessment. One PHU mentioned that screening results are required by some service providers to access their services.

If a surveillance tool was completed and parents or health care professionals were concerned about development, the following care pathways were reported:

- A referral is made to appropriate services such as Children's Services intake. It is also recommended for parents to take their child to see their primary care provider when appropriate.
- A referral with the results of the screening tool are sent to the relevant infant development agency when issues are identified (could also be child/infant mental health).
- Follow up is organized through specialized supportive agencies if developmental milestones are not met. Smart Start Hub will be key once established for referrals.
- Two PHUs mentioned Developmental Support Plans (DSP). Follow up with health care provider or refer to Infant Development as appropriate. If an ASQ is completed, a DSP is created for families whose children require support and with client consent results shared with health care provider, referred to infant development, or speech and language etc.
- If the screen is done through HBHC, then that program includes case coordination to connect with infant/child development specialists, and advocating for services if needed and forward developmental results/concerns to primary care provider with consent.
- Referral to Infant Child Development Services program. Referrals to other appropriate programs in the community. Send caregivers web links, resource lists.
- Families with identified needs can contact an 800 number for advice/info, referral to Smart Start Hub, HBHC, and Infant Development Program etc.
- Refer children to primary care providers or community supports as appropriate. PHNs also work with families on ways to improve developmental milestones in the HBHC and NFP Programs. It may be an activity with the child or a referral to a community partner i.e., Speech and language support

List of Community Partners where Referrals are made:

- Primary health care providers (i.e., physicians)
- Developmental service agencies or other community supports
- Infant and Child Development (within PHUs or Children Services)
- Smart Start Hubs
- School boards
- Children's Aid Societies

One PHU noted they rarely forwarded completed tools, rather, clients are encouraged to share their Looksee results with their healthcare provider. However, if significant concerns or needs for service coordination were identified they would get consent to contact the primary care provider. In some circumstances PHNs work with the family to be receptive to fact that there may be a developmental vulnerability or concern and to accept a referral, provide interventions re: developmental stimulation/parenting and sometimes assist families to implement activities recommended by therapists in their home setting.

One PHU promoted the use of some tools on their website. This PHU is currently exploring the integration of Developmental Service Plans which help support families while on waitlists for developmental services. Another PHU described referral only if a family is referred to OT or Physiotherapy. Finally, PHUs can offer HBHC programming for additional support for families if not already involved with the program.

Future Directions

PHUs were asked if PHO were to support the development of a provincial framework for developmental surveillance, would PHUs want to be involved in the creation of such a framework. Twenty-one PHUs responded 'yes' however there were many caveats. It would be critical to engage other key partners, such as primary care and EarlyON in this work. PHUs acknowledged it would be beneficial to have access to both local and provincial data on developmental milestones. There may be interest in participating in a working group focused on increasing access to and analysis of existing local and provincial data (not in conducting primary data collection). There are three potential sources of data:

1. Getting primary care 18-month EWBV data
2. Getting individual level EDI through the Ministry of Education or ICES
3. Consider ASQ/ASQ-SE participating in the National ASQ Database (see Appendix B for description)

A comprehensive framework would be beneficial for PHUs to advocate for surveillance and screening at multiple points across the health and social service sector and not just within primary care. It was strongly recommended that EarlyONs be included in the early stages as a resource for a developmental surveillance and screening framework. There are lessons learned from the Fair Start Program that oversaw developmental screening of young children in the Thunder Bay District Health Unit region. The program ceased in 2018 because it was felt not to be within the local mandate of the PHU and the funding was subsequently shifted to another program. There was also a request to know what evidence-based surveillance and screening tools are widely used and currently being used by other PHUs.

Discussion

There was high variability in health units' approaches to early identification in the 0–6 year age group, and no concensus on the role of public health in this area. However, the majority of health units reported that they would like to have a more defined role in this area, with standardization across the province. There were three main areas where best practices could be developed:

1. Settings or locations and programs/services performing developmental surveillance and screening
2. Developmental screening tool to use
3. Age or optimal interval of developmental surveillance or screening

The majority of public health units reported using the Looksee/NDDS Developmental Checklist.[15] However, in September 2023, four months after this survey was completed, the Ministry of Children Community and Social Services ceased funding the NDDS organization to provide these developmental surveillance checklists as free resources to the public health units, although the 18-month version would remain free. The rationale from MCCSS was they were "shifting away from funding a single screening tool and allowing service providers to choose a tool based on their specific needs."[20] This has allowed public health units the opportunity to explore other evidence-based and validated developmental screening tools. However, the evidence is unclear about which tool is optimal for the purposes of public health practice. Many health units already reported using the ASQ and ASQ-SE, some health units reported using the Looksee and ASQ in tandem: the Looksee as a universal checklist, and subsequently the ASQ if there were concerns identified. This process aligns with the 2016 CTFPHC recommendations by conducting universal developmental surveillance activities but ensuring developmental screening only occurs for those identified with risk. Further, there is some empirical evidence to support this as a promising best practice.[21] However, in another rigiorous randomized controlled trial, developmental screening was shown to be more effective at identifying developmental delays compared to developmental surveillance at well-child visits.[22]

The United States Preventive Services Task Force (USPSTF) recently released a systematic review for screening for speech and language delay and disorders in children five years or younger.[23] Overall, 23 different screening tools were assessed for accuracy. The outcomes examined included test accuracy, speech and language outcomes, school performance, function, quality of life, and harms. The task force concluded that the "evidence is insufficient to assess the balance of benefits and harms of screening for speech and language delay and disorders in children 5 years or younger without signs or symptoms (I statement)."[23] However, there were limitations to this review including a broad age range and only examining speech and language screening tools rather than more commonly used general developmental screening tools.

There is limited information on the role of public health in developmental surveillance or screening in other Canadian jusidictions. In British Columbia, a Core Public Health Functions for BC: Model Core Program paper on Healthy Infant and Child Development from 2009 described a specific objective to "enhance the early identification of infants and children living in conditions of risk".[24] They stated seven key principles and overarching strategies including "a comprehensive and integrated approach using a wide range of strategies, multidisciplinary and multi-sectoral collaboration, prevention initiatives and early identification of risk or vulnerability (through well-baby/well-child clinics, group sessions and home visits), identifying vulnerabilities and risks (e.g., developmental delays, parenting skills, family dynamics, environment and neighbourhood, socio-economic factors, etc.), through developmental surveillance, eliciting parent concerns, observation, and use of a validated risk assessment tool where indicated." Importantly, the paper suggested a population assessment and surveillance strategy to gather and analyze information to identify trends, issues, and community risk factors, to enable program planning and evaluation and to develop an information system to integrate data on infant and child health and development.[24] In Manitoba, a cross-departmental committee was established to explore and develop recommendations regarding the feasbility of implementing a province-wide Early Years Developmental Screening Program in 2015[25] as part of their five-year action plan for Early Childhood Development: Starting Early, Starting Strong. However, no further information was found on the recommendations or any program implementation.

The role of public health in developmental surveillance and screening should likely follow a public health approach using proportionate universalism.[26] For the broader population, ensuring appropriate local population assessment and surveillance activities are conducted will be necessary to understand what neighbourhoods may be most at risk, where more intensive intervention and public health programing

are needed. Previous research has found there are health inequities in early identification practices. The USPSTF found "underreferrals are especially concerning in minoritized communities because children with limited access to comprehensive health care and early childhood development services face a higher risk of academic difficulties."[23] As such, perhaps it is the role of public health to compliment primary care services by providing more direct developmental surveillance and screening services to families and young children without access to health care services, much like providing in-person prenatal services, home visiting, and breastfeeding services to the most underserved populations.

There were some limitations to this work. First, this was only a snapshot in time of the current efforts and practices occurring in local public health units. Since data was collected, public health units may have made different or new decisions regarding their approach to early identificantion and developmental surveillance. Second, there was variability across public health units in the level of detail provided in the survey responses due to the open-ended response options which may have led to some underreporting of activities in some public health units.

Conclusion

Public health units in Ontario are engaging in a wide variety of activities to address child development and provide early identification services to their local communities. For public health units interested in providing more direct administration of developmental surveillance and screening, there is a need to provide more consistent approaches across Ontario with regards to timing of developmental surveillance and/or screening and type of developmental screening tool used. In Ontario, the predominant setting for developmental surveillance and screening is in primary care. However, due to the barriers in accessing primary care providers there are families with young children without consistent access to either family physicians, nurse practitioners or community pediatricians. Therefore, some discussion has arisen on complimentary settings that could also provide early identification services (e.g., public health, child care centres, or EarlyON Centres). Understanding current practices in local public health units is the first step to developing best practices in early identification moving forward. Further engagement with key partners including child care providers, early childhood education specialists, and primary care providers will help to create best practices for public health and their participation in developmental surveillance and screening.

References

1. Siddiq A, Irwin LGS, Hertzman C. Early childhood development: a powerful equalizer [Internet]. Geneva: World Health Organization; 2007 [cited 2024 Jun 21]. Available from: https://www.who.int/publications/i/item/early-child-development-a-powerful-equalizer-final-report-for-the-world-health-organization-s-commission-on-the-social-determinants-of-health

2. National Research Council, Board on Children, Youth and Families, Committee on Integrating the Science of Early Childhood Development; Shonkoff JP, Philips DA, editors. From neurons to neighborhoods: the science of early childhood development [Internet]. Washington, DC: National Academies Press; 2000 [cited 2024 Jun 21].Available from: https://nap.nationalacademies.org/catalog/9824/from-neurons-to-neighborhoods-the-science-of-early-childhood-development

3. Center on the Developing Child at Harvard University. The foundations of lifelong health are built in early childhood [Internet]. Cambridge, MA: Center on the Developing Child at Harvard University; 2010 [cited 2024 Jun 21]. Available from: https://developingchild.harvard.edu/resources/the-foundations-of-lifelong-health-are-built-in-early-childhood/

4. García JL, Heckman JJ, Leaf DE, Prados MJ. The life-cycle benefits of an influential early childhood program [Internet]. Cambridge, MA: National Bureau of Economic Research; 2016 [cited 2024 April 22]. Available from: https://www.nber.org/system/files/working_papers/w22993/w22993.pdf

5. Williams R, Clinton J; Canadian Pediatric Society, Early Years Task Force. Getting it right at 18 months: in support of an enhanced well-baby visit. Paediatr Child Health. 2011;16(10):647-54. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3303471/

6. Lipkin PH, Macias MM; Council on Children with Disabilities, Section on Children with Disabilities and Behavioural Pediatrics. Promoting optimal development: identifying infants and young children with developmental disorders through developmental surveillance and screening. Pediatrics. 2020;145(1):e20193449. Available from: https://doi.org/10.1542/peds.2019-3449

7. Canadian Task Force on Preventive Health Care. Recommendations on screening for developmental delay. CMAJ. 2016;188(8):579-87. Available from: https://doi.org/10.1503/cmaj.151437

8. Centers for Disease Control and Prevention (CDC). Developmental monitoring and screening [Internet]. Atlanta, GA: 2023 [cited 2024 April 24]. Available from: https://www.cdc.gov/ncbddd/actearly/screening.html

9. Zubler JM, Wiggins LD, Macias MM, Whitaker TM, Shaw JS, Squires JK, et al. Evidence-informed milestones for developmental surveillance tools. Pediatrics. 2022;149(3):e2021052138. Available from: https://doi.org/10.1542/peds.2021-052138

10. Ontario. Ministry of Children, Community and Social Services. Enhances 18-month well-baby visit [Internet]. Toronto, ON: King's Printer for Ontario; 2023 [cited 2024 Jan 17]. Available from: https://www.ontario.ca/page/enhanced-18-month-well-baby-visit

11. Guttmann A, Saunders NR, Kumar M, Gandhi S, Diong C, MacCon K, et al. Implementation of a physician incentive program for 18-month developmental screening in Ontario, Canada. J Pediatr. 2020;226:213-20.e1. Available from: https://doi.org/10.1016/j.jpeds.2020.03.016

12. Plumptre L, Mondor L. Implementation of a physician incentive program for 18-month developmental screening in Ontario, Canada – update 2023 (AHRQ #0950 118 001). Toronto, ON: ICES; 2024.

13. Li P, Rowan-Legg A, Kwok B, Bayoumi I, Arulthas S, Tedone E, et al. 2020 edition of the Rourke Baby Record. What is new in preventive care of children up to 5 years of age?. Can Fam Physician. 2021;67(7):488-98. Available from: https://doi.org/10.46747/cfp.6707488
14. Rourke L, Leduc D. Improving the odds for effective developmental surveillance. Paediatr Child Health. 2012;17(10):539-40. Available from: https://doi.org/10.1093/pch/17.10.539
15. Looksee. Looksee checklist [Internet]. North Bay, ON: Looksee; 2024 [cited 2024 Jun 21]. Available from: https://lookseechecklist.com/en/
16. Ontario. Ministry of Health and Long Term Care. Healthy babies healthy children program protocol, 2018. Effective: January 1, 2018) [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2024 Jun 21]. Available from: https://files.ontario.ca/moh-healthy-babies-children-protocol-en-2018.pdf
17. Evans A, Mahar AL, Deb B, Boblitz A, Brownell M, Guttmann A, et al. Gaps in childhood immunizations and preventive care visits during the COVID-19 pandemic: a population-based cohort study of children in Ontario and Manitoba, Canada, 2016–2021. Can J Public Health. 2023;114(5):774-86. Available from: https://doi.org/10.17269/s41997-023-00797-y
18. Guttmann A, Cairney J, MacCon K, Kumar M. Uptake of Ontario's enhanced 18-month well-baby visit: an AHRQ report [Internet]. Toronto, ON: ICES; 2016 [cited 2024 Jun 21]. Available from: https://www.ices.on.ca/publications/research-reports/uptake-of-ontarios-enhanced-18-month-well-baby-visit/
19. Offord Centre for Child Studies. EDI in Ontario 2004-2018 [Internet]. Hamilton, ON: Early Development Instrument; n.d. [cited 2024 Jun 21]. Available from: https://edi.offordcentre.com/partners/canada/edi-in-ontario/
20. Vahed Z (Director, Ontario. Ministry of Children, Community and Social Services). Memorandum to: Healthy Babies Healthy Children Directors and Managers. Re: Looksee developmental screening tool. Toronto, ON: Ministry of Children, Community and Social Service; 2023 Jul 13.
21. Barger B, Rice C, Wolf R, Roach A. Better together: developmental screening and monitoring best identify children who need early intervention. Disabil Health J. 2018;11(3):420-6. Available from: https://doi.org/10.1016/j.dhjo.2018.01.002
22. Guevara JP, Gerdes M, Localio R, Huang YV, Pinto-Martin J, Minkovitz CS, et al. Effectiveness of developmental screening in an urban setting. Pediatrics. 2013;131(1):30-7. Available from: https://doi.org/10.1542/peds.2012-0765
23. Feltner C, Wallace IF, Nowell SW, Orr CJ, Raffa B, Middleton JC, et al. Screening for speech and language delay and disorders in children 5 years or younger: evidence report and systematic review for the US Preventive Services Task Force. JAMA. 2024;331(4):335-51. Available from: https://doi.org/10.1001/jama.2023.24647
24. BC Health Authorities, BC Ministry of Healthy Living and Sport. Model core program paper: healthy infant and child development [Internet]. Victoria, BC: BC Ministry of Healthy Living and Sport; 2009 [cited 2024 Jun 21]. Available from: https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/public-health/maternal-child-and-family-health/healthy_infant_and_child_development-model_core_program_paper.pdf
25. Healthy Child Manitoba Office. Annual report, 2015-2016; 2016 [archived]. Winnipeg, MA: King's Printer for Manitoba; 2016 [cited 2024 Jun 21]. Available from: https://web.archive.org/web/20181110120213/https://gov.mb.ca/healthychild/about/annual_report_2015_16.pdf

26. Ontario Agency for Health Protection and Promotion (Public Health Ontario), Lu D, Tyler I. Focus on: a proportionate approach to priority populations [Internet]. Toronto, ON: Queen's Printer for Ontario; 2015 [cited 2024 Jun 21]. Available from: https://www.publichealthontario.ca/-/media/documents/F/2015/focus-on-priority-populations.pdf

27. Knowledge Institute on Child and Youth Mental Health and Addictions. From building blocks to care pathways: working together to support timely access to infant and early mental health care [Internet]. Ottawa, ON: Children's Hospital of Eastern Ontario; 2023 [cited 2024 Jun 21]. Available from: https://www.cymha.ca/Modules/ResourceHub/?id=af50d093-c61c-4eb7-b65a-e11f05d8ad1f

Appendix A: Glossary

Early identification: an umbrella term for the identification of neurodevelopmental disorders and behavioral and emotional problems.[6]

Developmental monitoring: a term used by the CDC to describe parents' role in observing how their own child's development and whether their child is meeting the typical developmental milestones in playing, learning, speaking, behaving, and moving.[8] Ontario PHUs use monitoring and surveillance interchangeably.

Developmental surveillance: the ongoing monitoring of development, identification of risk factors and elicitation of parental concerns.[7] In addition to eliciting parent concerns, it is a longitudinal process that involves taking a developmental history based on milestone attainment, observing milestones and other behaviours, examining the child, and applying clinical judgment during well-child visits.[9] It is an important way for health care providers to identify children at risk for developmental delay and should occur during every well-child visits where clinicians should address developmental progress, concerns, and promotion.[6]

Developmental screening: the use of standardized tools to search for developmental delay and other conditions. The validated screening tools used for developmental and behavioral screening are formal questionnaires or checklists based on research that ask questions about a child's development, including language, movement, thinking, behavior, and emotions.[6,7]

Developmental evaluation: a more in-depth assessment of child development conducted by a developmental pediatrician, child psychologist or other trained provider. The specialist may observe the child, give the child a structured test, and ask the parents or caregivers questions or ask them to fill out further questionnaires.[8]

Appendix B: Additional Resources

A Guide for Community Partners Supporting Infant and Early Mental Health Care

Providing capacity building through training on ASQ and ASQ-SE, the Knowledge Institute in collaboration with the Infant and Early Mental Health Promotion program at Sick Kids Hospital, have created a Development Support Plan in three communities for parents to use while on a waitlist as well as for Indigenous communities (Nurturing the Seed). A guide to community pathways from prenatal to age six is available here.[27]

National ASQ Database

The first Canadian database of child development supported by the Infant Early Mental Health Promotion program at Sick Kids Hospital, Queen's University Centre for Neuroscience Studies, and Kids Brain Health Network. This database houses ASQ scores and demographic data through a secure web-based data capture tool (REDCap). Server is housed at Queen's University in the Centre for Advanced Computing. The purpose of the database is to strengthen our understanding of:

1. How children are reaching developmental milestones
2. Which developmental domains require the most support

The latter objective can be used to inform programs and policies for PHUs.

The role of the community partner or PHU to participate in the Database is:

- Gaining consent from participating families
- ASQ data collection and physical storage
- Re-screening children every 3–4 months (if possible)
- Bi-weekly or monthly meeting with Queen's University researcher to discuss progress, data reports, areas needing support, and next steps

Providing analyzed data back to local PHUs provides benefits to the PHU, as it enables them to:

- Modify agency-specific programs, resources, or policies to address developmental domains that require the most support
- Gain a deeper understanding of local demographic data to bolster tools and resources for caregivers
- Understand how children locally are doing in comparison to children from a wide range of contexts
- Use the evidence of developmental need to apply for grants/funding/etc.

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