



Environmental Scan of Public Health Directives During COVID-19: A View Through the Lens of Children With Complex Care Needs and Their Families

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Abstract

Background: The COVID-19 pandemic shaped childhood globally. The experiences of vulnerable children in Canada's Maritime provinces reveal important lessons about equity, resilience, and the unintended consequences of public health directives. Public health restrictions were enacted in the early days of COVID-19. At-risk populations such as children with complex care needs (CCN) were among those most impacted by health system changes due to COVID-19. To better understand how COVID-19 public health measures impacted children with CCN who were highly susceptible to the virus and associated disruptions, we conducted an environmental scan to map changes in COVID-19 public health directives and services impacting children with CCN.

Methods: We systematically retrieved government news releases communicating new or changing COVID-19 public health directives published March 1, 2020-March 31, 2022. All directives and service changes in the health and education sectors were included. Directives were divided into 13 categories co-developed with parent and decision-maker partners, and we identified whether directives included support measures relevant to children with CCN.

Results: The environmental scan revealed that children with CCN were largely overlooked in COVID-19 directives across the Maritime provinces. We identified 699 public health directives and services changes. Fewer than 2.2% of COVID-19 directives explicitly referenced children with CCN, with most guidance focusing on general social restrictions, vaccinations, and education/daycare. Mental health and well-being were also rarely addressed (13 directives).

Conclusion: The Maritimes' predominately rural and geographically dispersed population exacerbates the inequities experienced by children with CCN, offering insights relevant to other regions about the unintended consequences of broad public health policies delivered to heterogeneous populations. Examining this data through the lens of children with CCN and their families can inform recommendations to better support this vulnerable population in future public health emergencies.

Keywords: COVID-19, Complex Care, Children, Public Health, Health Policy, Canada

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Key Messages

Implications for policy makers

- Children with complex care needs (CCN) were explicitly addressed in fewer than 2.2% of COVID-19 public health directives in the Maritime provinces, highlighting their erasure in pandemic planning.
- Directives addressing mental health and well-being were extremely rare, despite heightened uncertainty and service disruptions.
- Public health policies designed at the population level often overlook unintended consequences for vulnerable children with specialized needs.
- Rural and geographically dispersed regions, like Canada's Maritime provinces, illustrate how centralized health systems can exacerbate inequities, a lesson relevant to similar contexts globally.

Integrating CCN considerations into future emergency planning, through stakeholder engagement, is essential. Detailed recommendations are provided in our companion study.¹

Implications for the public

Children with complex care needs (CCN) were some of the most vulnerable people requiring protection during the COVID-19 pandemic. We looked at all public health directives and service changes released between March 1, 2020 and March 31, 2022 in the Maritime provinces of Canada to see which ones impacted children with CCN. We found 699 directives and service changes and divided them into 13 categories that we co-developed with patient partners. 4.8% of directives in Prince Edward Island (PE), 2.2% in Nova Scotia (NS), and 0.7% in New Brunswick (NB) referenced children with CCN. Social restrictions were the most common category, followed by directives relating to vaccinations and to education and daycares. Mental health and well-being was the second least-represented category with only 13 directives. This data has allowed us to identify critical gaps and make recommendations for consideration in future public health emergencies that would support children with CCN.

Background

From the start of the COVID-19 pandemic in March 2020 a range of public health restrictions were enacted worldwide.² While older adults received early attention, at-risk pediatric populations such as children with complex care needs (CCN), were also considered vulnerable. However, it has become increasingly apparent that these recommended protections were not without costs, and it is only with the benefit of hindsight that we are now able to recognize that COVID-19 restrictions may have amplified existing inequalities.³ For example, school closures were particularly challenging for children with CCN who often received wrap-around supports, occupational therapy, and speech-language pathology supports provided at school.

The Canadian Maritime provinces of New Brunswick (NB), Nova Scotia (NS), and Prince Edward Island (PE) are served by a single pediatric tertiary care facility (IWK Health) located in NS. This centre provides specialty care services to the children with CCN and their families from all three Maritime provinces, yet it remains unclear how the different provincial directives addressed the specific needs of children with CCN and their families. The Maritimes' geographically dispersed populations illustrate these gaps, offering insights relevant to other regions with centralized pediatric services and rural or dispersed populations (eg, Manitoba, northern Ontario, rural U.S. states like Alaska and Montana, northern Norway, Iceland, Scotland's Highlands and Islands, rural Australia, and others).

The definition of CCN is evolving and variable, and awareness of this population outside of families and caregivers remains limited.^{4,5} Most literature on children with CCN primarily centres on hospital care and transitions within and from the hospital, rather than community based care.⁶⁻⁸ Since the majority of care is done at home, the burden on caregivers is high and existing respite support is insufficient.⁸⁻¹² The COVID-19 pandemic exacerbated these pre-existing challenges.^{4,5,8} Service reductions and closures disrupted routines, limited access to medical care, increased parental stress, and negatively affected the mental health and well-being of children with CCN.¹³ Furthermore, even health directives that were implemented to support individuals, such as at-home testing, created unintended stress for children with CCN.

Objective

To understand how COVID-19 public health directives impacted children with CCN and their families in the Maritimes, we conducted an environmental scan mapping changes in COVID-19 public health directives and services between March 2020 and March 2022. This environmental scan aimed to describe how public health directives were communicated and whether children with CCN were explicitly acknowledged; it was not designed to evaluate the health or service impacts of these directives.

Methods

Study Design

Environmental scans are a structured approach to identifying

and analyzing information about policies, programs, and initiatives within a defined context. While no single framework exists, environmental scans are particularly useful for rapidly evolving public health scenarios to understand how directives are communicated and implemented. In this study, a public health directive is defined as any government-issued communication providing guidance, rules, or recommendations aimed at protecting population health during COVID-19, including both mandatory and recommended measures. Directives were communicated publicly through government websites, news releases, and official social media channels, making them accessible to all residents. We systematically retrieved all COVID-19 public health directives that were communicated in the three Maritime provinces, using keyword searches and website filters.

Study Population

Children with CCN have higher medical and social needs than the general pediatric population and may have disabilities and depend on assistive or medical technology.¹⁴ Estimates suggest that while approximately 15%-20% of children have special healthcare needs, only about 1% meet the criteria for medical complexity. Despite their small numbers, this population accounts for a disproportionately large share of healthcare utilization, including frequent hospitalizations, specialist visits, and reliance on home or community-based supports, highlighting their vulnerability during public health emergencies.^{14,15} While public health measures affected all residents in each of the Maritime provinces, children with CCN were particularly vulnerable to service disruptions, including reduced access to healthcare, therapies, education, and social support. Given public health directives are applied regionally and children with CCN in PE and NB are required to cross jurisdictional boundaries to receive specialty care, all children with CCN living in the Maritimes were potentially impacted, justifying the inclusion of all relevant government communications in the scan.

Search Strategy

A health information specialist developed a systematic strategy to search all news releases from all three provincial governments published between March 1, 2020, and March 31, 2022. News releases that communicated new or changing COVID-19 public health directives were retrieved by executing a keyword search for the term "COVID" within each of the provincial government websites, using built-in filters for health and education departments as listed in [Table 1](#). Because of the manageable number of releases, this approach enabled a near-complete capture of all public health directives during the study period.

Screening and Selection

Our team included parents and caregivers who had lived experience caring for children with CCN in the three Maritime provinces who assisted with finalizing a set of inclusion criteria (herein referred to as parent and decision-maker partners, as a stand-in for patient partners). All French and English

Table 1. Websites Searched Monthly for COVID-19 News Releases

Province	Government Website	Filters Used
NB	https://www2.gnb.ca/content/gnb/en/news/media_advisories.html	Health Education and early childhood development
NS	https://novascotia.ca/news/	Health and wellness Education and early childhood development
PE	https://www.princeedwardisland.ca/en/news	Health and wellness Education and early years

Abbreviations: NB, New Brunswick; NS, Nova Scotia; PE, Prince Edward Island.

news releases related to COVID-19 directives and service changes in the health and education sectors were considered for inclusion. Releases unrelated to COVID-19 or duplicate entries were excluded. Screening was conducted monthly by a primary reviewer, with a second reviewer verifying potentially relevant releases using REDCap.¹⁶ Chronological tracking allowed us to monitor monthly retrieval and final inclusion rates.¹⁶

Data Extraction

Data were extracted monthly by two independent reviewers and discrepancies were resolved through consensus. A REDCap-based data extraction form, co-designed with our parent and decision-maker partners, was pilot tested with a sample of releases from each province prior to data extraction. The data extraction form captured key metadata (eg, province, URL, publication date), the directive or service change, whether it was mandatory or recommended, the target population, start and end dates, geographic scope (eg, provincial or sub-regional), whether it included any support strategies for children or families in general, and whether the directive or service change acknowledged or referenced children with CCN and their families specifically. We also recorded whether the directive explicitly acknowledged or referenced children with CCN and their families. To be classified as relevant to children with CCN, a directive needed to explicitly mention “children with CCN” (or equivalent terminology), “people with disabilities” (including children), immunocompromised individuals, chronic conditions, or special needs. Directives targeting children in general were not included unless they explicitly addressed considerations specific to children with CCN, as this population has unique healthcare, educational, and social needs that are not well-addressed by general pediatric directives. This approach ensured that the scan only captured communications most relevant to the distinct experiences of children with CCN and their families. Support measures were defined as referrals to support or decision-making aids intended to mitigate service gaps or disruptions (eg, increased respite funding). Reviewers documented any additional relevant details about the directive and links to external resources provided in the communication. In this manuscript, the term “children” refers to all individuals up to 18 years of age. The REDCap form is included in [Supplementary file 1](#).

Directives were sorted into 13 categories (policy domains) identified through consultation with our parent and decision-maker partners and refined during an initial review of the

dataset. These domains reflected key areas of public health policy and service delivery affected during the pandemic, and included: (1) travel restrictions; (2) social restrictions; (3) testing; (4) masking; (5) vaccinations; (6) education and daycares; (7) community playgrounds and recreational activities; (8) community services; (9) hospital procedures and inpatient care; (10) ambulatory care clinics; (11) continuing care and long-term care; (12) workplaces, business and services; and (13) mental health and well-being. Examples of directives are detailed in [Table 2](#). During data extraction, each directive was assigned to the category best representing the main policy intent. Examples of directives within each category are provided in [Table 2](#). Two reviewers completed data extraction and categorization. Discrepancies in category assignment or interpretation were discussed and resolved through consensus, to ensure consistency in classification.

Analysis and Presentation of Results

We created summary tables of public health directives and services over time, highlighting the frequency and categories of directives relevant to CCN. Visual timelines were created to illustrate sentinel changes during the study period. Supporting data are provided in [Supplementary file 2](#).

Results

We screened 2813 news releases (651 from NB, 1834 from NS, and 326 from PE). After excluding 2114 items, we extracted data from 699 unique public health directive or service changes over the 25-month period of study (n=278 in NS, n=276 in NB, and n=145 in PE). [Table 3](#) shows the number of sources at each stage of screening. Although French-language releases were eligible for inclusion, because all of the French-language releases we identified were duplicates of English-language releases, we excluded them as such.

[Figure 1](#) shows the number of directive changes, including new directives, in each category. Social restrictions, which included caps on the number of personal contacts, gathering restrictions, and physical distancing measures were the most common category in our pooled dataset, followed closely by directives relating to vaccinations and then education and daycares. It is important to note that the number of directives in each category does not necessarily indicate relative importance; some categories such as mental health programs, may require only a single stable directive, whereas other categories like social restrictions naturally evolved more frequently and required updates as the pandemic progressed.

In contrast, directives relating to mental health and well-

Table 2. Directive and Service Change Categories

Category	Examples
1. Travel restrictions	Border closures; documentation requirements
2. Social restrictions	Number of personal contacts allowed; physical distancing requirements; isolation and quarantine
3. Testing	Testing eligibility; testing requirements for returning to work or school
4. Masking	Mask-wearing mandates or recommendations
5. Vaccinations	Vaccine eligibility; vaccine mandates or recommendations
6. Education and daycares	School closures; school supports for children with CCN
7. Community playgrounds and recreational activities	Playground and park closures; limits on recreational programming
8. Community services	Rehabilitation clinics
9. Hospital procedures and inpatient care	Elective surgery postponements; inpatient visitor and support person restrictions
10. Ambulatory care clinics	Reductions in ambulatory services; support person restrictions
11. Continuing and long-term care	Support and activity restrictions; visitor restrictions
12. Workplaces, business, and services	Workplace and business closures; retail closures
13. Mental health and well-being	Reduction or extension of mental health supports

Abbreviation: CNN, complex care needs.

Table 3. Number of News Releases Screened, Excluded, and Included

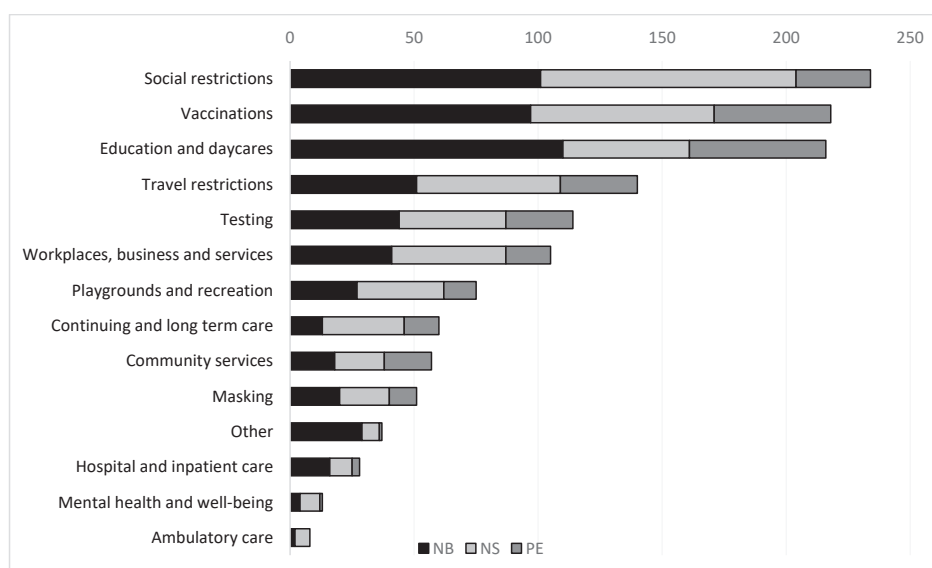
Province	NS		NB		PE		Total
Department	Health	Education	Health	Education	Health	Education	
News releases screened	1712	122	631	22	300	26	2813
News releases excluded							
Duplicates	835	57	1	0	0	0	893
Not communicating a public health directive	607	39	313	13	164	6	1142
Not communicating a new or changing public health directive	17	1	48	2	11	0	79
News releases included	253	25	269	7	125	20	699
Total news releases included per province from both departments	278		276		145		699

Abbreviations: NB, New Brunswick; NS, Nova Scotia; PE, Prince Edward Island.

being were sparse, making up the second least-represented category, with only seven news releases discussing mental health supports, and only six discussing community service supports. These findings suggest that while general protective measures were widespread, targeted supports for children

with CCN were extremely limited. Examples of directives within each category by province are included in [Table 4](#).

[Figure 2](#) shows the number of directive changes per province over time, with the number of Maritime-wide cases also displayed for context. Across all provinces, directive

**Figure 1.** Number of Directive Changes in Each Category. Abbreviations: NB, New Brunswick; NS, Nova Scotia; PE, Prince Edward Island.

changes were typically implemented in times of higher case counts. Most directive changes occurred at the outset of the pandemic, when the first wave of cases occurred from March to May 2020. After a slow summer with very low case counts, the next small wave in late 2020 and early 2021 coincided with another spike in directive changes, followed swiftly by another spike in both cases and directive changes in spring 2021. A smaller increase in directive changes occurred in August and September 2021, which may have reflected preparation for an anticipated fall wave. Despite these periods of heightened policy activity, few directives explicitly referenced children with CCN or addressed their specific circumstances. This pattern suggests that while policy responses intensified during periods of rising transmission, consideration of children with CCN did not increase proportionally.

Vaccine roll-out included a prioritization of some underserved groups (eg, First Nations, African Nova Scotians). By October 2021, approximately 80% of the eligible Maritime population had received at least one COVID-19 vaccine dose. However, vaccination roll-out did not prioritize children with CCN. Across all the Maritime provinces, vaccinations for children aged 5-11 opened to all children in that age range simultaneously in late November 2021. Shortly afterward,

in December 2021, the emergence of the Omicron variant led to an unprecedented spike in new cases. While all three provinces enacted new or changing directives in response, directive activity dropped off substantially by March 2022. Ultimately, no directives during this period specifically addressed vaccination considerations for children with CCN.

Directives Specific to Children With CCN

Despite the widespread impact of public health restrictions, we found that children with CCN and their families were explicitly acknowledged in less than 2.2% of COVID-19 directives in the Maritimes, with 4.8% of directives in PE, 2.2% in NS, and 0.7% in NB. This highlights the limited consideration of their unique needs, particularly in education, mental health, and social support services. Those that did occur were most frequently in the education and daycares category. Examples of directives that specifically considered children with CCN and their families included measures to support children with disabilities in schools, exceptions from at-home learning for children who required educational assistants or youth service workers, and provisions for respite care provisions during extended periods of school closure. A full list of these directives is found in [Supplementary](#)

Table 4. Examples of Directives Within Each Category, Per Province

Category	Summaries of Example Directives From Each Province		
	NB	NS	PE
Ambulatory care clinics	Authorization of virtual care by physicians and psychiatrists for routine services	Government is extending access to virtual care options.	None in this category
Community playgrounds and recreational activities	Closure of public recreation facilities	Camp closures	Closure of parks and visitor centres
Community services	Support for emergency food security services and organizations	Measures for food and housing insecurity and senior safety	Community resources permitted to re-open
Continuing and long-term care	Steps being taken to protect nursing home residents	New long-term care health and safety measures	Restriction of visitors at long term and community care facilities
Education and daycares	Two-week school closure	Schools to continue at-home learning	Closure of child care centres and schools
Hospital procedures and in-patient care	Hospital visitor restrictions to remain in place	Expanding virtual care and infection control	Move towards only delivering essential services
Masking	Masking required in public buildings and where physical distancing is not possible	Masks required in child-care centres and indoor workplaces	Students are required to wear masks
Mental health and well-being	Free, guided self-help program made available online	New mental health supports	Redirecting patients to psychiatric urgent care clinics
Social restrictions	Enforced social distancing	Social gathering restriction	Stay at home, unless leaving is essential
Testing	Expanded test eligibility criteria	Increased testing capacity	Extended hours for testing clinics
Travel restrictions	Atlantic Canadians allowed to travel within Maritime provinces without requirement to self-isolate	Atlantic bubble announced	Atlantic bubble opens for travel into PE
Vaccinations	Priority groups for first vaccinations determined	Healthcare workers to receive COVID-19 vaccine	Health PE and CPHO are working with the Native Council of PE to plan vaccine clinic opportunities for Indigenous adults
Workplaces, businesses and services	Shutdown of all but essential public-sector workplaces	Event gathering limits	Closure of bars, theatres, restaurants, and indoor play areas

Abbreviations: NB, New Brunswick; NS, Nova Scotia; PE, Prince Edward Island; CPHO, Chief Public Health Officer.

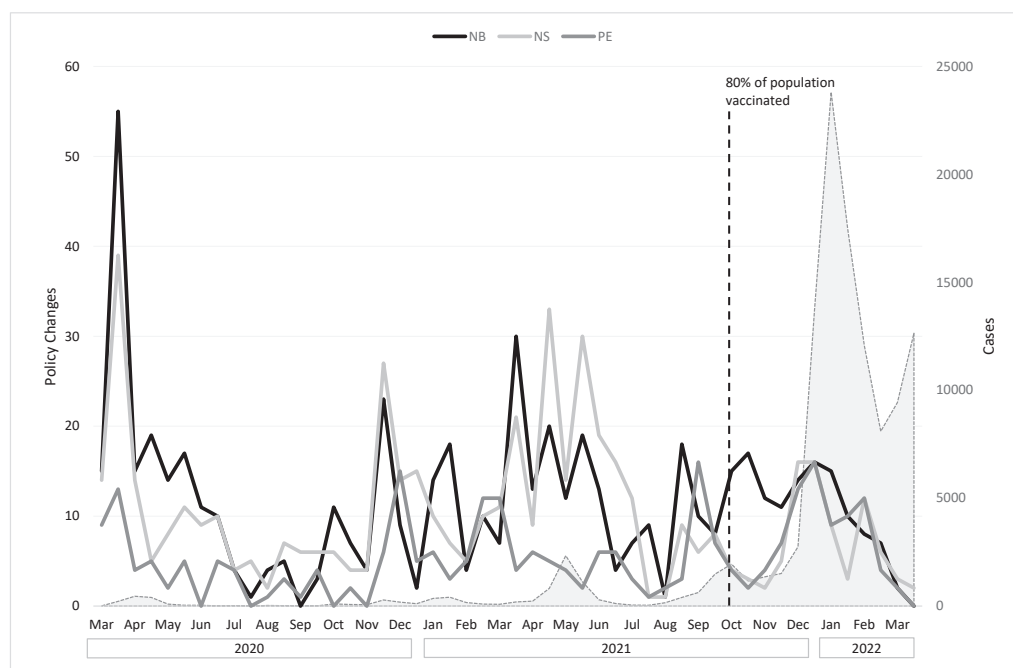


Figure 2. Number of Directive Changes Per Province and Number of Maritime-Wide New Cases Over Time . Abbreviations: NB, New Brunswick; NS, Nova Scotia; PE, Prince Edward Island.

file 3 (Table S1). Overall, these directives primarily focused on maintaining access to educational supports or respite services during periods of school disruption.

In addition to directives referencing children with CCN, several directives across the three provinces provided broader support measures for children and families during the pandemic. Table S2 (found in [Supplementary file 3](#)) summarizes these supports. When children with CCN were referenced, directives most commonly appeared in the education and daycare category. These supports most frequently appeared in the education and childcare category. The most common type of support was the provision of a point of contact for families seeking assistance, followed by service expansions (eg, expanded programming or access to services) and informational documents outlining available resources or guidance. While these supports were intended for the broader population of children and families, few were specifically tailored to the needs of children with CCN.

Discussion

Public health measures were the first line of defense against COVID-19. Findings from our environmental scan of public health directives in the Canadian Maritimes from March 2020 to March 2022 contribute important information to the existing evidence on Canada's response to COVID-19.^{17,18} We identified a small percentage (2.2%) of directives targeting children with CCN. Most of the directives we identified that acknowledged or referenced children with CCN were in the education and daycares category, relating to school-based supports; few of the directives we identified were related to in-home or community supports. While enhanced access to online learning technology benefited many students, children with CCN often require individualized supports or therapies that are not fully replicable through technology

alone, highlighting gaps in these directives. Previous research suggests that many families of children with CCN may have been excluded from in-person learning, and likely continued virtual learning after schools reopened due to concerns about COVID-19 exposure.^{19,20} The limited attention on in-home or community supports placed additional burden on these families. Further, the small number of support measures relating to mental health and hospital and in-patient care Maritime-wide, may indicate a lack of support available to children with CCN and their families at a time when deterioration in mental health was escalated by the pandemic.²¹⁻²³ While there were 234 total directives related to social restrictions, there were only 13 (1%) related to mental health and well-being. Given the potential mental health impacts of prolonged social restrictions, particularly for children with complex health needs and their families, this imbalance warrants further investigation.

None of the directives specific to children with CCN related to vaccines, even though vaccine-related directive changes were among the most common. COVID-19 vaccinations for children aged 5-11 were not approved until November 2021, and unlike adults with chronic conditions, children with CCN were not prioritized for vaccination.²⁴⁻²⁶ Given that many children with CCN have underlying medical conditions or frequent interactions with healthcare settings, delayed prioritization may have left some families navigating heightened concerns about exposure to COVID-19. Pediatric vaccination for children aged 5-11 began in late November 2021 across the Maritime provinces and was offered broadly through public health clinics and pharmacies. In other jurisdictions, pandemic planning efforts highlighted the importance of prioritizing medically vulnerable populations and maintaining access to essential therapies and educational supports during periods of restriction. Children with CCN

rely on services differently than typical Maritime children. For children with CCN, these services are developmentally critical because therapies and supports are often required to maintain functional abilities, support developmental progress during critical periods, and ultimately, prevent skill regression and learning loss when services are interrupted. Unlike children with more typical disabilities, children with CCN often require multi-system supports spanning healthcare, therapy, and education simultaneously. Interruption in any one service can lead to regression across domains, making them uniquely vulnerable to policy decisions made at a population level that assume a “typical” healthy child.

The unprecedented Omicron spike in cases followed by the drop-off in directive changes across the region by March 2022 paints a stark picture. Although vaccination in the general population had surpassed 80% at that point, children, including children with CCN, had only just been made eligible for vaccination. Because children with CCN often have underlying medical conditions, delayed vaccination prioritization may have left them more exposed to COVID-19 than their peers, highlighting a vulnerability that population-level policies do not explicitly address. These circumstances highlight the importance of considering how broad policy shifts may affect vulnerable populations such as children with CCN. Considering the complex medical and service needs of this population, explicitly including children with CCN in emergency preparedness planning may help ensure that future public health responses do not unintentionally widen existing inequities.

Children with CCN are a heterogeneous population with a range of pre-pandemic unmet services and healthcare needs.^{4,27–29} The limited number of service and program support directives identified in our dataset illustrates how existing inequalities affecting children with CCN may have been amplified during the pandemic.

Limitations

While new directives and changes to directives were captured in our scan, continuance or termination of directives were not consistently announced in the same way. Therefore, our numbers may not represent the total number of directives or supports in effect at any given time. For example, some public health measures introduced early in the pandemic, such as visitor restrictions in hospitals, remained in place for long periods of time without changing. Additionally, we only looked at a limited number of pre-specified websites for news releases, which may have resulted in an underestimation of directives communicated more directly to impacted populations using other methods (eg, targeted communications to specific organizations or service providers). Our analysis focused on the content of publicly communicated directives, rather than their implementation or impact. The existence of a policy does not imply its implementation in practice. As such, this study does not assess whether directives were implemented as intended, nor does it evaluate their effects on health outcomes, healthcare access, or well-being among children with CCN and their families. Future research linking policy changes to service utilization, health outcomes, or family experiences

would be needed to better understand the differential impacts of pandemic responses on this population. The lived experiences of families and children with CCN during the COVID-19 pandemic are explored in related work by our research team.¹

Strengths

This study has several key strengths. First, we provide a comprehensive environmental scan of COVID-19 directives across three Maritime provinces, over two years, covering both health and education sectors. Parent and decision-maker partners involved from the outset of this project helped ensure that the categorization and interpretation reflected real-world experiences of children with CCN. The study's systematic and transparent reporting helps enhance reliability. Its novel focus on the unique needs of CCN highlights gaps in guidance and support, offering valuable insights for policy-makers and future research in this area.

Conclusion

Our environmental scan found that children with CCN and their families were considered in less than 2.2% of COVID-19 directives in the Maritimes and only 1% of directives were related to mental health and well-being. Given the large impact the pandemic had on the lives of children with CCN and their families, more support is needed for this vulnerable group. By examining this data through the lens of children with CCN and their families, we are better equipped to identify critical gaps and make recommendations for consideration in future public health emergencies that would support this vulnerable population. These findings underscore that children with CCN are a distinct population with overlapping medical, developmental, and social needs that are often overlooked in population-level public health planning. Future emergency preparedness efforts should explicitly consider their unique vulnerabilities to ensure equitable support.

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Disclosure of artificial intelligence (AI) use

Not applicable.

Ethical issues

As this study did not involve human participants or data, ethics approval and patient consent were not required.

Conflicts of interest

Authors declare that they have no conflicts of interest.

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Supplementary files

Supplementary file 1. Data Extraction Form.

Supplementary file 2. Supporting Data.

Supplementary file 3 contains Tables S1 and S2.

References

- Curran JA, Johnson C, McCulloch H, et al. Uncovering the wider impact of COVID-19 public health measures on the lives of children with complex care needs and their families in the Canadian Maritimes: a qualitative study. *BMJ Paediatr Open*. 2025;9(1):e003342. doi:10.1136/bmjpo-2025-003342
- Detsky AS, Bogoch II. COVID-19 in Canada: Experience and Response. *JAMA*. 2020;324(8):743-744. doi:10.1001/jama.2020.14033
- Canadian Human Rights Commission. Inequality amplified by COVID-19 crisis. <https://www.chrc-ccdp.gc.ca/en/resources/inequality-amplified-covid-19-crisis>. Accessed December 1, 2023.
- Brenner M, Kidston C, Hilliard C, et al. Children's complex care needs: a systematic concept analysis of multidisciplinary language. *Eur J Pediatr*. 2018;177(11):1641-1652. doi:10.1007/s00431-018-3216-9
- Cohen E, Berry JG, Sanders L, Schor EL, Wise PH. Status complexus? The emergence of pediatric complex care. *Pediatrics*. 2018;141(Suppl 3):S202-S211. doi:10.1542/peds.2017-1284E
- Breneol S, Doucet S, McIsaac JL, et al. Programmes to support transitions in community care for children with complex care needs: a scoping review. *BMJ Open*. 2022;12(7):e056799. doi:10.1136/bmjopen-2021-056799
- Curran JA, Breneol S, Vine J. Improving transitions in care for children with complex and medically fragile needs: a mixed methods study. *BMC Pediatr*. 2020;20(1):219. doi:10.1186/s12887-020-02117-6
- Haspels HN, Knoester H, Jamaludin FS, van Karnebeek CD, Alsem MW. Hospital to Home transitions for children with medical complexity: a scoping review of healthcare professionals experiences. *Child Care Health Dev*. 2025;51(4):e70126. doi:10.1111/cch.70126
- Brehaut JC, Garner RE, Miller AR, et al. Changes over time in the health of caregivers of children with health problems: growth-curve findings from a 10-year Canadian population-based study. *Am J Public Health*. 2011;101(12):2308-2316. doi:10.2105/AJPH.2011.300298
- Kuo DZ, Cohen E, Agrawal R, Berry JG, Casey PH. A national profile of caregiver challenges among more medically complex children with special health care needs. *Arch Pediatr Adolesc Med*. 2011;165(11):1020-1026. doi:10.1001/archpediatrics.2011.172
- Luke A, Luck KE, Doucet S. Experiences of Caregivers as Clients of a Patient Navigation Program for Children and Youth with Complex Care Needs: A Qualitative Descriptive Study. *Int J Integr Care*. 2020;20(4):10. doi:10.5334/ijic.5451
- Murphy M, Hill K, Begley T, Brenner M, Doyle C. Respite Care for Children with Complex Care Needs: A Literature Review. *Compr Child Adolesc Nurs*. 2021;45(2):127-136. doi:10.1080/24694193.2021.1885523
- Mitchell SM. True Resilience: A Look Inside COVID's Effect on Children with Medical Complexity and Their Families. *Curr Pediatr Rep*. 2021;9(4):171-177. doi:10.1007/s40124-021-00254-9
- Cohen E, Kuo DZ, Agrawal R, et al. Children with medical complexity: an emerging population for clinical and research initiatives. *Pediatrics*. 2011;127(3):529-538. doi:10.1542/peds.2010-0910
- Leyenaar JK, Schaefer AP, Freyleue SD, et al. Prevalence of children with medical complexity and associations with health care utilization and in-hospital mortality. *JAMA Pediatr*. 2022;176(6):e220687. doi:10.1001/jamapediatrics.2022.0687
- Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377-381. doi:10.1016/j.jbi.2008.08.010
- Akanteva A, Dick DW, Amiraslani S, Heffernan JM. Canadian Covid-19 pandemic public health mitigation measures at the province level. *Sci Data*. 2023;10(1):882. doi:10.1038/s41597-023-02759-y
- Polisena J, Ospina M, Sanni O, et al. Public health measures to reduce the risk of SARS-CoV-2 transmission in Canada during the early days of the COVID-19 pandemic: a scoping review. *BMJ Open*. 2021;11(3):e046177. doi:10.1136/bmjopen-2020-046177
- Diskin C, Buchanan F, Cohen E, et al. The impact of the COVID-19 pandemic on children with medical complexity. *BMC Pediatr*. 2022;22(1):496. doi:10.1186/s12887-022-03549-y
- Baumbusch J, Lloyd JEV, Lamden-Bennett SR, Ou C. The unintended consequences of COVID-19 public health measures on health care for children with medical complexity. *Child Care Health Dev*. 2022;48(6):970-978. doi:10.1111/cch.12968
- Dozois DJA. Anxiety and depression in Canada during the COVID-19 pandemic: A national survey. *Canadian Psychology/Psychologie Canadienne*. 2021;62(1):136-142. doi:10.1037/cap0000251
- Daly Z, Slemon A, Richardson CG, et al. Associations between periods of COVID-19 quarantine and mental health in Canada. *Psychiatry Research*. 2021;295:113631. doi:10.1016/j.psychres.2020.113631
- Cost KT, Crosbie J, Anagnostou E, et al. Mostly worse, occasionally better: impact of COVID-19 pandemic on the mental health of Canadian children and adolescents. *Eur Child Adolesc Psychiatry*. 2022;31(4):671-684. doi:10.1007/s00787-021-01744-3
- Kholina K, Harmon SHE, Graham JE. An equitable vaccine delivery system: Lessons from the COVID-19 vaccine rollout in Canada. *PLoS One*. 2022;17(12):e0279929. doi:10.1371/journal.pone.0279929
- Fitzpatrick T, Camillo CA, Hillis S, et al. Comparison of COVID-19 Vaccination Rollout Approaches across Canada: Case Studies of Four Diverse Provinces. *Health Reform Observer – Observatoire des Réformes de Santé*. 2023;11(1):1. doi:10.13162/hro-ors.v11i1.5118
- Aiello R. Canada authorizes first COVID-19 vaccine for kids. *CTV News*. November 19, 2021. Accessed March 13, 2024. <https://www.ctvnews.ca/lifestyle/article/canada-authorizes-first-covid-19-vaccine-for-kids/>.
- Berenguer C, Martínez ER, De Stasio S, Baixauli I. Parents' perceptions and experiences with their children's use of augmentative/alternative communication: a systematic review and qualitative meta-synthesis. *Int J Environ Res Public Health*. 2022;19(13):8091. doi:10.3390/ijerph19138091
- Kuo DZ, Goudie A, Cohen E, et al. Inequities in health care needs for children with medical complexity. *Health Aff (Millwood)*. 2014;33(12):2190-2198. doi:10.1377/hlthaff.2014.0273
- Aruda MM, Kelly M, Newinsky K. Unmet needs of children with special health care needs in a specialized day school setting. *J Sch Nurs*. 2011;27(3):209-218. doi:10.1177/1059840510391670