McMaster University | HEALTH FORUM

COVID-END COVID-19 Evidence Network to support Decision-making ... in Canada

COVID-19 Living Evidence Profile #4

(Version 4: 13 August 2021)

Question

What went well and what could have gone better in the COVID-19 response in Canada, as well as what will need to go well in future given any available foresight work being conducted?

Background to the question

With increasing numbers of Canadians getting vaccinated, now is the time to examine the response to the COVID-19 pandemic while it is still fresh in the minds of policymakers and stakeholders. Answers to questions about what could have been done better and what was done well are necessary to allow us to learn from both the missteps and the successes in the COVID-19 responses that were implemented during the pandemic. This reflexive lens will help to ensure that Canada is well positioned for future waves of the pandemic, for any future pandemics, and for future public-health challenges that share characteristics with this one. We have used the two organizing frameworks below to provide a thematic analysis of lessons learned from evidence documents, opinion pieces that meet one or more explicit criteria (explicit assessment of pros and cons, cited data and/or evidence that was explicitly used in deriving lessons learned, documented stakeholder-engagement process, and/or endorsements of lessons learned by a formal group or a large, informal group of signatories), and the experiences of Canadian provinces and territories as captured by their governments and associated agencies. We have also developed a complementary summary of lessons learned from select other countries using the same organizing frameworks (which can be found on this webpage as living evidence profile 5.3).

Box 1: Our approach

We identified research evidence addressing the question by searching the COVID-END inventory of best evidence syntheses, the COVID-END guide to key COVID-19 evidence sources (which includes several databases containing COVID-19-specific single studies and COVID-19 specific pre-prints, such as COVID-19+, L*VE and TRIPP), EMBASE, and select additional grey-literature sources in the 29 July to 9 August 2021 period. For this update, we conducted searches in English and French.

We identified experiences related to the question by hand searching federal and provincial/territorial government and government agency websites. We included documents from the municipal level if they were reported on these websites (but we did not search municipal government websites separately). We reviewed both English- and French-language websites.

We searched primarily for empirical studies (including those published in the peer-reviewed literature, as pre-prints, and in the 'grey' literature) and opinion pieces (specifically those that justify the position(s) taken in one or more ways described in Appendix 1). As part of the search for empirical studies, we also searched for full systematic reviews (or review-derived products such as overviews of systematic reviews), rapid reviews, protocols for systematic reviews, and titles/questions for systematic reviews or rapid reviews that have been identified as either being conducted or prioritized to be conducted. Empirical studies, reviews and opinion pieces have been included when they have an explicit assessment of the pros and cons of a course of action compared to the alternatives available. However, for some documents, this assessment has been difficult to apply and we will continue to refine out assessments for future updates of this living evidence profile (LEP).

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Organizing frameworks

We organized our results by COVID-19 response type (rows in Table 1) and by the part of the question being addressed (columns in Table 1) using an explicit equity lens. We used different treatment of fonts to profile the gradation in evidence, with **bolded** text representing themes that are found in multiple sources of evidence documents or government and agency reports. We use *italicized* text to represent newly identified or reiterated themes from this update The combination of bolded and italics representing newly identified or reiterated themes found in multiple evidence documents or government reports.

The first organizing framework is for type of COVID-19 response:

- cross-cutting by federal versus provincial (versus municipal) and by shift in policy instrument (and/or condition, treatment, sector, or population);
- public-health measures (e.g., stockpiling personal protective equipment), by federal versus provincial (versus municipal) and by shift in policy instrument;
- clinical management, by condition and/or treatment (typically provincial for topics like drug formularies);
- health-system arrangements, by sector (e.g., long-term care) and population (e.g., essential workers and racialized communities), and by federal/pan-Canadian/cross-provincial (versus provincial) and by shift in policy instrument;
  - governance arrangements (e.g., dividing up or keeping public-health functions together),
  - financial arrangements, and
  - delivery arrangements; and
- economic and social, by sector and by federal (versus provincial) (versus municipal) and by shift in policy instrument.

The second organizing framework is for the three parts of the question:

- what went well;
- what could have gone better; and
- recommendations on what will need to go well in the future given any available foresight work being conducted.

Box 1: Our approach (continued)

For this update, we used AMSTAR to appraise the methodological quality of full systematic reviews and rapid reviews deemed to be highly relevant. We also identified the methodology of included empirical studies deemed to be highly relevant and undertook quality assessments for time-series studies using the Maryland Scientific Methods Scale, and all other types of quantitative observational studies of interventions using ROBINS-I. We were prepared to complete quality assessments for experimental studies using the Cochrane risk of bias assessment had we found any. Lastly, we used the JBI checklist for qualitative research to assess the methodological rigour of highly relevant qualitative studies and used this to determine their inclusion in this LEP. We provide more information in Appendix 1 about our approach to applying each of these tools and interpreting assessments from them.

This LEP was prepared in the equivalent of three days of a 'full-court press' by all involved staff.

What we found

In this update we identified an additional five evidence documents, of which we deemed five to be highly relevant, including:

- three single studies; and
- two opinion pieces.

This LEP also includes evidence documents from the previous version that we deemed to still be highly relevant, for a total of 37 highly relevant evidence documents.

In the thematic analysis below (Table 1), we itemize lessons learned from the highly relevant evidence documents and from government and government agency reports included in the jurisdictional scans. Where equity-related findings appear in documents, we have explicitly drawn these out and included them in the lessons below. The table includes lessons learned from any point in the pandemic, however where specified in included documents, we have attributed any new lessons to a specific wave or stage in the pandemic. In the next update, we will return to all previously included documents to attribute lessons learned to specific times in the pandemic where relevant. We outline the type and number of all documents that were identified in Table 2.

For those who want to know more about our approach, we provide a detailed summary of our methods in Appendix 1. We provide a summary of key findings from the newly identified evidence documents and government reports and analyses in Appendix 2, while those identified in previous updates are included in Appendix 3. Detailed insights from newly identified evidence documents are provided in Appendix 4 (including their relevance to the categories in the organizing frameworks, key findings, and when they were conducted or published), while highly relevant evidence documents and previous updates can be found in Appendix 5. We provide detailed summaries of reports by government and government agencies for each province and territory in Appendix 6. Documents excluded at the final stages of reviewing are provided in Appendix 7.

Thematic analysis

Common themes emerged from both evidence documents and government reports from Canadian federal, provincial and territorial governments. The majority of lessons learned came from analyses of the federal response or responses in B.C., Ontario, and Quebec, with relatively little found for other Canadian provinces and territories. However, many of these themes may resonate across provinces and territories.

New or reiterated lessons learned from this update also concentrate within certain response types in the first organizing framework, namely in cross-cutting responses, public-health measures, health-system arrangements, and economic and social responses. We did not find any themes related to clinical management.

Compared to previous versions of this LEP, we identified fewer lessons learned. However, while undertaking the jurisdictional scans we noted that many provinces have pending audits or reviews, such as in Alberta, Manitoba, and Ontario (which have been identified in Appendix 6). In addition, the provincial governments have recently published changes to public-health restrictions and/or roadmaps to recovery from the pandemic. Given that vaccine coverage is increasing across the country, we may be seeing a shift in public policies away from management of the pandemic towards longer-term prevention and recovery which will need time before being evaluated.

With respect to 'what went well', no new themes that were common across provinces and territories and/or multiple documents emerged in this update, although the success of the provision and roll-out of the Canadian Economic Recovery Benefit was reiterated in newly identified documents. Common themes related to 'what went well' identified in previous versions of this LEP include:

- improved management of PPE and medical devices in the second and third waves of the pandemic;
- early implementation of rigorous public-health measures being critical to preventing and managing outbreaks; and
- use of external IPAC teams, single-site work policies, and collaboration between sectors in long-term care homes helping to control and manage outbreaks.

With respect to what could have gone better, we identified new lessons learned from British Columbia and Quebec, however these lessons came from a single supporting source. In addition, newly identified empirical evidence and government documents reiterated the common themes identified in the previous versions of this LEP, which highlighted that:

- across all levels of government, the use of vague and indefinite language over the course of the pandemic resulted in confusion for citizens, especially with respect to communication about public-health measures and public-health guidance;
- limited stockpile of PPE led to shortages at the beginning of the pandemic across provinces; and
- limited human-resource capacity and unclear guidelines reduced contact tracing in multiple provinces.

Additional common themes from previous versions of this LEP highlighted that:

- at the provincial level, variation in the timing and implementation of public-health measures in long-term care homes led to varied outcomes, and those that delayed implementation (e.g., Ontario, Quebec and Alberta) experienced worse outcomes;
- at the provincial level, failure to address long-standing issues contributed to the crisis in the long-term care sector;
- second waves of the pandemic led to cancelling and delaying of preventive and elective procedures;
- across all levels of government the exacerbation of systemic inequities throughout the pandemic (particularly for Indigenous communities) contributed to limiting adherence to public-health guidelines; and
- the epidemiological profile was obscured at the provincial level due to limited capacity for testing and contact tracing and laboratory-testing capacity in Ontario.

We did not identify any new lessons learned related to equity in this version. Those identified in the previous versions were largely found in government reports and select opinion pieces and focused what could have gone better. The lessons include:

- the exacerbation of systemic inequities affecting Indigenous peoples (as noted above);
- the inability to meet requests for additional healthcare staff in remote Indigenous communities;
- increases in the number of young immigrant women not in employment, education or training compared to their non-immigrant counterparts;
- a reduction in the percentage of women participating in the labour force; and
- increases in the educational disparities between high- and low-performing students.

We did not identify any recommendations with multiple supporting sources in this update. However, recommendations with multiple supporting sources from the previous versions include:

- improving the federal government's process for administering mandatory quarantine and collection of contact information to verify compliance;

- implementing outreach approaches for preventive-care services that were delayed during the pandemic;
- developing and testing preparedness plans for future pandemics or public-health crises in the long-term care sector; and
- increasing staff levels and retention programs and strengthening inspection and enforcement processes in the long-term care sector.

Table 1: Lessons learned from evidence documents and government reports (with **bolded** text representing themes found in multiple evidence documents or government reports and *italicized* text representing newly identified or reiterated themes from this update, with the combination of bolded and italics representing newly identified or reiterated themes found in multiple evidence documents or government reports)

Organizing framework	What went well?	What could have gone better?	Recommendations for what will need to go well in the future
Cross-cutting	Federal level • The federal government leveraged both its technical capacity and convening function to develop technical guidance and contribute to data and information sharing practices that supported provincial and territorial public health responses (one opinion piece) Provincial level • *Elected officials' decisions to suspend partisan disputes in Quebec and support the government increased the effectiveness of communication strategies deployed* (one opinion piece)	• ***Use of vague and indefinite language over the course of the pandemic resulted in confusion for residents, especially with respect to policy communication and public-health guidance*** (one rapid review - AMSTAR 0/9; one qualitative study, and one opinion piece) • **Decentralized decision-making between federal and provincial levels led to fragmented responses and unequal 'epidemiological success' across provinces and territories** (two observational studies – 1, 2) Provincial level • **The Ontario Command Table was not led by public-health officials unlike in other provinces such as British Columbia and Prince Edward Island** (one government report; one environmental scan) • *At the beginning of the pandemic, INESSS and INSPQ in Quebec faced coordination challenges in terms of the subject areas they would each cover which led to differing scientific recommendations on similar or related subjects* (one opinion piece)	• Reconsider what the federal government role should be in mitigating health and economic disruptions in the future (one government report) • Greater centralization of pandemic responses at the federal level, as demonstrated in other countries, may support a more coordinated response (one rapid review – AMSTAR 0/9)

		• Lessons learned from the SARS outbreak were not implemented in Ontario prior to COVID-19 (one government report)	
Public-health measures	Federal level • **The Public Health Agency of Canada improved how it managed the assessment and allocation of PPE and medical devices across provinces and territories** (one opinion piece; one government report) • Health Canada and Public Services and Procurement Canada modified their licensing and procurement processes to response to rapidly increasing demand (one government report) • The Public Health Agency of Canada responded quickly to daily reports from the Global Public Health Intelligence Network and communicated risk to provincial officials (one government report) • The Canada Border Services Agency acted quickly to prohibit entry of foreign nationals, with an exemption for essential workers (one government report) • A protocol for a systematic review outlines a plan to examine the effects of lessons learned from 'health in all' policy approaches used during the COVID-19 pandemic (one protocol)	Federal level • ***Limited stockpile of PPE led to shortages at the beginning of the pandemic across provinces*** (one government report and two opinion pieces- 1, 2) • Weak adherence to border closure restrictions during the first year of the pandemic for inbound travelers led to issues effectively containing importation and transmission of the virus (one opinion piece) • Lack of pan-Canadian framework for testing protocols, testing capacity, and laboratory surge capacity contributed to varied laboratory use across the country with some provinces experiencing extreme backlogs while others had significant capacity (one opinion piece) • Inconsistent reporting of COVID-19 deaths early on in the pandemic has resulted in the death rate from COVID-19 being underreported, particularly among older adults at home, racialized communities, frontline workers and people living in multigenerational households (one opinion piece) • The federal health portfolio and national guidance for pandemic response was out of date and testing of the plans was not	Federal level • **The federal government to improve its processes for administering mandatory quarantine and collecting contact information to verify compliance with it** (one government report and one opinion piece) • *The Public Health Agency of Canada should put additional investments towards surveillance technology and partnerships to adapt and update the role of the Global Public Health Intelligence Network to warn against future public-health crises* (one government report) • The federal government should mandate weekly preliminary reporting to Statistics Canada of the number of deaths due to all causes and should perform COVID-19 testing on all individuals who die in all settings (one opinion piece) • The Public Health Agency of Canada should develop and implement a comprehensive National Emergency Strategic Stockpile management plan (one government report) • The Public Health Agency of Canada should enforce the terms and conditions of its contracts with third-party warehousing and logistic service

	Provincial level • **Early implementation of rigorous public-health measures in British Columbia, including in long-term care homes which were critical to preventing and managing outbreaks** (two primary studies – one environmental scan and one qualitative study) • **External infection-prevention and control teams (IPAC) who can provide access to education and training helped to control and manage outbreaks in long-term care homes in British Columbia and Ontario** (three primary studies – one environmental scan, one observational study with a serious risk of bias, and one qualitative study) • Prioritization for vaccines has successfully reduced infection rates among healthcare workers (one government report)	completed prior to the pandemic (one government report) • Lack of coordination across provinces and territories on re-opening plans resulted in confusion about differing colour codes and staged approaches (one environmental scan) • Data-sharing agreements with provinces and past recommendations on data sharing were not finalized when the pandemic began (one government report) • Lack of national data-collection standards, including disaggregated surveillance data led to inconsistencies in how surveillance data was collected and reported (one opinion piece) Provincial level • **Significant variation across provinces in the timing and implementation of public-health measures in long-term care homes led to varied outcomes, and those that delayed implementation (e.g., Ontario, Quebec and Alberta) experienced worse outcomes** (one qualitative study and one observational study with a serious risk of bias) • **Laboratory-testing capacity in Ontario delayed testing symptomatic individuals and obscured the full epidemiological picture compared to**	providers to control inventory of PPE (one government report) • Health Canada should determine whether respirators are appropriately classified (one government report) • The Public Health Agency of Canada should finalize the annexes to data-sharing agreements with providers to ensure complete and accurate surveillance data (one government report

		other provinces (one government report and one opinion piece) • ***Limited human-resource capacity and unclear guidelines reduced contact tracing across multiple provinces*** (one government report and two opinion pieces - 1, 2) • **The pandemic exacerbated systemic inequities affecting Indigenous peoples across multiple provinces, limiting the ability to adhere to select public-health measures and increasing risk of outbreaks in Indigenous communities** (one opinion piece and one government report) • *Essential drugs for the care of COVID-19 patients were at risk of shortages and stock-outs which led to dependency on external market for drug supply* (one opinion piece) • *Lack of reliable health monitoring and information system in Quebec during the initial stages of the pandemic delayed officials' ability to plan and adapt strategies to prepare for and manage the pandemic* (one opinion piece) • Insufficient exercise of powers by the Chief Medical Officer of Health, diminished role of Public Health Ontario in the response, and confusion about the roles and responsibilities of local medical offers of health reduced the effectiveness of the provincial response in Ontario (one government report) • Oscillating between strict and loose stages was less effective than policies	

		that maintained a stringent lockdown level (one government report)	
Clinical management	None identified	None identified	None identified

Health-system arrangements	By sector
	• Acute care
	  ○ Early response to the pandemic managed to avoid overwhelming the acute-care system (one opinion piece)
	  ○ Efforts to increase infection-prevention and control equipment within hospitals was successful by the second wave (one government report)
	• Long-term care
	  ○ **Single-site work policies in long-term care helped to reduce the spread of COVID-19 in Ontario and British Columbia** (two primary studies – one observational study with a moderate risk of bias and one qualitative study)
	  ○ **Collaboration between long-term care and other sectors was effective at preventing and managing outbreaks in Ontario and British Columbia** (one qualitative study and one opinion piece)
		By sector
		• Cross-sectoral
		  ○ *Insufficient workforce in hospitals and clinics in rural and remote regions of Quebec led an overload of local capacity and a reliance on aeromedical evacuations between regions* (one opinion piece)
		• Home and community care
		  ○ Despite expanding access to contract nurses and paramedics, over half of requests for additional healthcare staff to respond to COVID-19 care needs in 51 remote or isolated Indigenous communities were not met (one government report)
		• Acute-care sector
		  ○ ***Second waves of the pandemic led to cancelling and delaying of preventive and elective procedures*** (one government report; one rapid review – AMSTAR 2/9; two observational studies- one with a moderate risk of bias and one with a serious risk of bias)
		  ○ Training of surgical residents experienced a more negative impact from pandemic restrictions than those in other countries because of the focus on competency-based learning (one rapid review - AMSTAR 2/9)
			By sector
			• Cross sector
			  ○ *Implement a reliable health and social information system in Quebec* (one opinion piece)
			  ○ *Promote the health and well-being of care providers by ensuring occupational health and psychological-support services are available and that the volume and workflow are adapted to the complexity of clinical practice* (one opinion piece)
			• Home and community care
			  ○ Indigenous Services Canada should work with the 51 remote or isolated Indigenous communities to consider approaches to address the shortage of nurses in these communities (one government report)
			• Acute-care sector
			  ○ **Implement outreach approaches for preventive-care services that were delayed during the pandemic** (two observational studies – 1,2)
			  ○ Consider regional-level strategies to manage the backlog for select specialty services such as cancer screening (one observational study with a moderate risk of bias)

		• Long-term care ○ **Long-standing issues in the long-term care sector across provinces contributed to outbreaks, including:** ▪ **Labour-force challenges (e.g., lack of standardization in training)** ▪ **Inadequate staff in long-term care facilities** ▪ **Outdated infrastructure (e.g., multi-bed facilities and old ventilation systems)** ▪ **Limited collaboration with other sectors in the health system** ▪ **Poor communication between long-term care homes and residents' family and caregivers** (one opinion piece; two primary studies – two observations studies 1, 2 with a serious risks of bias; one qualitative study; three government reports - 1,2,3) ○ *Limited communication in British Columbia between the government, employers, and long-term care homes when implementing the single-site order led to initial confusion and temporary shortages of workers in long-term care facilities* (one qualitative study)	○ Accelerate service delivery and integrate health-equity considerations to reduce backlogs in elective procedures (one government report) • Long-term care ○ **Develop and test preparedness plans for future pandemics or public-health crises** (two government reports – 1, 2, and one qualitative study) ○ **Increase staff levels and retention programs** (two government reports – 1, 2) ○ **Improve home-inspection and enforcement processes** (two government reports – 1, 2) ○ *Invest in infrastructure upgrades including ventilation systems and automatic screening at entry points* (one qualitative study) • Public Health ○ *Increase the portion of the health budget allocated to public health in Quebec to allow it to restore its functions to prevent and manage crises in the future* (one opinion piece)
Economic and social responses	By sector • Employment ○ ***Use of existing infrastructure to deliver the Canada Emergency Response Benefit***	By sector • Economic development ○ Increased reliance on artificial intelligence during the pandemic increased inequities in family income	By sector • Employment ○ *Promote equal opportunities by increasing access to paid sick leave and family leave* (one opinion piece)

	supported a successful roll-out and the financial resilience of Canadians throughout the pandemic (three government reports – 1, 2, 3; and two opinion pieces 1; 2) ○ The Canada Emergency Response Benefit was targeted well for those employed in industries that were severely affected by the lockdowns, and low-wage workers being the most likely to receive payments (two government reports - 1, 2) ○ The Canadian Emergency Wage Subsidy was quickly provided to Canadian employers (one government report) • Housing ○ British Columbia established a rental supplement, halted evictions and froze rents from the beginning of the pandemic, which initially helped to safeguard housing from the economic impacts of the pandemic (one observational study) • Recreation ○ *The reallocation of streets in Canadian cities allowed for greater social distancing while outside and for safe participation in outdoor activities (e.g., walking, running and biking), however additional consideration is needed to ensure these*	and job resilience (one government report) ○ Significant variation in productivity has been observed across sectors in the economy (one government report) ○ There was an increase in the rate of young people aged 15 to 29 not in employment, education or training, with the most significant increases being among young men when compared to young women, and among young immigrant women when compared to non-immigrant women (one government report) • Employment ○ **Percentage of women participating in the labour force has dropped significantly during the pandemic due in part to lack of affordable childcare** (four opinion pieces – 1, 2, 3, 4) ○ *Labour recovery since the first wave of the pandemic has been unequal, with significant variation seen across industries, regions, gender, races and income levels* (one opinion piece) ○ *Indigenous workers in B.C. have experienced larger employment losses and slower recovery than any other group, with a disproportionate effect on Indigenous men* (one opinion piece) • Education ○ School closures in Ontario have increased educational disparities	○ Conduct a full economic evaluation of the Canada Emergency Wage Subsidy (one government report) ○ Strengthen compliance efforts for GST and HST (one government report) ○ Undertake targeted audits of the Canada Emergency Wage Subsidy (one government report) ○ Implement mandatory gender-based analyses for labour policies (one opinion piece) • Education ○ School authorities in Ontario should offer or continue to offer high-quality and targeted supplementary interventions over the summer to compensate for lost time, and shift some of the load of learning off of parents (one modelling study) ○ School online instructions in Ontario should build in more real-time interactions between students and teachers if additional waves of COVID-19 force students online beyond the end of the 2020-2021 school year (one modelling study) • Housing ○ *Scale up investments in affordable housing and introduce new financial supports for low-income renters* (one opinion piece)

	also benefit equity-seeking populations (one observational study with a serious risk of bias)	between students, with average shortfalls in learning estimated at four months among average students and seven among lower-performing students (one modelling study)
		• Housing
		  ○ Despite establishing housing supports in B.C., financial assistance provided during COVID-19 was insufficient to adequately support "equity seeking" populations (one government report)
		• Immigration
		  ○ During the pandemic, admissions to Canada under all classes of immigration fell substantially with the refugee and family reunification class having the greatest impact (one opinion piece)
			• Immigration
			  ○ Prioritize programs such as the Provincial Nominee Program and Atlantic Immigration Program to encourage immigrant retention in smaller communities (one opinion piece)
			  ○ Expand skill and credential recognition for immigrants to improve economic outcomes following immigration (one opinion piece)
			  ○ Consider greater balance between classes of immigration particularly between economic migrants and family reunification and refugee classes (one opinion piece)

Table 2: Overview of type and number of documents related to lessons learned from the COVID-19 response

Type of document	Total (n= 64)*	Cross-cutting responses (n=9)	Public-health measures (n=32)	Clinical management (n=4)	Health-system arrangements (n=24)	Economic and social responses (n=14)
Full systematic reviews	-	-	-	-	-	-
Rapid reviews	3	1	1	-	3	-
Protocols for reviews that are underway	1	-	1	-	-	-
Titles/questions for reviews that are being planned	-	-	-	-	-	-
Single studies that provide additional insight	41	6	21	4	15	3
Opinion pieces	19	2	9	-	6	11

*Some documents were tagged in more than one category so the column total does not match the total number of documents.

Waddell KA, Wilson MG, Bain T, Bhuiya A, Al-Khateeb S, Sharma K, DeMaio P, Lavis JN. COVID-19 living evidence profile #4 (version 4.4): What went well and what could have gone better in the COVID-19 responses, as well as what will need to go well in future given any available foresight work being conducted? Hamilton: McMaster Health Forum, 13 August 2021.

To help health- and social-system leaders as they respond to unprecedented challenges related to the COVID-19 pandemic, the McMaster Health Forum is preparing rapid evidence profiles like this one. This rapid evidence profile is funded by the Public Health Agency of Canada. The opinions, results, and conclusions are those of the McMaster Health Forum and are independent of the funder. No endorsement by the Public Health Agency of Canada is intended or should be inferred.

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