

Remembering is a form of honouring: preserving the COVID-19 archival record

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Abstract

COVID-19 presents an opportunity to preserve a rich and diverse historical record—one intended to honour all experiences and voices and in recognition of ongoing systemic inequalities shaping the pandemic. But policy changes are necessary in three key areas: how memory institutions are funded and supported, the gaps in our capacity to preserve the digital records that reflect how we communicate with one another today, and how to preserve and make accessible valuable scholarly research into the societal impact of COVID-19. Our goal is to begin a conversation about priorities for archival preservation, the need for greater equity and justice in our preservation practices, and ways to safeguard the existence of historical records that will allow us in future to bear witness, with fairness and truth and in a spirit of reconciliation, to our society's response to COVID-19.

Key words: pandemics, Canada, archives, memory, history, heritage policy



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1. Introduction

Since COVID-19 took hold of our consciousness in the spring of 2020, the history of past disease outbreaks has helped us to comprehend our experience today. The global influenza pandemic (1918–1920), for example, has become a point of reference in the media. In what feels like an unprecedented moment, history has become an indispensable tool for examining concrete problems such as the impact of school closures and quarantines.

Historical research helps us to think through where policy decisions might lead. But history also brings us something less immediately tangible: insight into our shared vulnerabilities, the roots of social conflict, the impact of inequity, and an appreciation of human resilience. Infectious disease historians have explored these themes in their work on past Canadian epidemics, from cholera to smallpox to influenza to polio (Eyford 2006; Jones 2007; Burnett 2012; Wallace 2013; Zeheter 2015; Mawdsley 2019).

Archives offer essential primary information to historians, scholars from other disciplines including historical epidemiology, families doing genealogies, the media—for anyone doing research into the

past.¹ Some aspects of disease history, such as government measures or official public health responses, are generally recorded for posterity in government archives. Newspapers have been invaluable accounts for establishing timelines, although they must be carefully analyzed for their biases and silences. But once we leave the realm of the “public” record, uncovering past experiences becomes much more challenging.

The lived experiences of most of the population have to be intentionally preserved for the future. If we are not careful, the very same social inequities that are now hampering our ability to fight COVID-19 will determine whose lives will be remembered—the memories of the wealthy, the White, the powerful, will be privileged over those of the racialized, working people, and those living ordinary lives in extraordinary times (Zinn 1977; Schwartz and Cook 2002; Caswell 2019). Therefore, it is essential that a strategy be developed for archiving COVID-19 records that reflect a multitude of voices. Remembering is a form of honouring.

The preservation of a diversity of COVID-19 records is made more challenging by the long-standing neglect of memory institutions in Canada. Many government archives at all levels, including Library and Archives Canada (LAC), our national archives, have significantly reduced their collection of non-governmental records, because of a lack of resources—reversing an earlier model of “total archives” preservation that had shaped government archives since the 1970s. To give an example, in 2012, the LAC declined Eileen Pettigrew’s research papers, and the tapes of nearly 50 interviews with influenza pandemic survivors, conducted for her 1983 book *Silent Enemy: Canada and the Deadly Flu of 1918* (Pettigrew 1983). Pettigrew’s book, although intended for a popular audience, was the first full-length study of Canada’s experience during the flu pandemic. Her interviews, conducted in the 1970s, are irreplaceable first-hand accounts of the pandemic. Pettigrew’s collection was eventually deposited in the Provincial Archives of New Brunswick, where it is now publicly accessible (although not digitally)—a positive outcome that came about only as a result of her family’s public plea for an archival home. It is likely, however, that LAC would have acquired Pettigrew’s material if they had had adequate resources to deal with the collection, given its national importance.

The 1918–1920 influenza pandemic provides a cautionary tale about preservation, the ease with which the record of the past can be lost, and collective memory. In 1989, it gained its moniker as the “forgotten pandemic,” thanks to the title of US historian Alfred Crosby’s influential study (Crosby 1976, 1989).² More recent histories have challenged and complicated the claim that people “forgot” the flu pandemic, but the idea that histories of the 20th century failed to remember this global disease event that killed at least 50 million people has stuck—because there is a fundamental truth to it. This is in part to do with historical narratives, but it is also the case that archival sources for histories of pandemic influenza (and other disease outbreaks) are less abundant and less accessible than one might assume.

The elision of the past is intensified for racialized Canadians. As historian Karen Flynn wrote recently while researching Black Canadian experiences, “is it possible to write about those who perished in the 1918 pandemic when the living—then and now—actively deny their existence? Equally important:

¹Throughout this report we use the term “archive” to denote the function of archiving. While this function is most often carried out by institutions that call themselves archives, there are many other institutional and community arrangements that may also contribute to or carry out the function of archiving, including libraries, museums, and Indigenous cultural centres. For examples of medical research that uses archival records see Vielfaure (2015). Types of medical research by members of the public might include genealogical investigations into family health, for example, or Indigenous Peoples learning about the conditions in so-called “Indian hospitals” where their relatives may have been placed. See Drees (2013), Geddes (2017), and Lux (2016).

²Alfred Crosby’s *America’s forgotten pandemic* had been published a decade earlier as *Epidemic and peace*—a title change suggestive of the changing tides of historiographical preoccupations.

what happens to populations that the archives do not account for, and how can we use our creative imaginations to bring the lost past to life?" (Flynn 2020). Flynn was able to draw upon the records of the Colored Women's Club of Montreal, which helped Black residents of Montreal access hospital care, provided nursing services, and financially supported the cost of burial for the families of flu victims. But there remain many unanswered questions about the experiences of Black Canadians. We must do better with COVID-19 preservation.

Conversely, as recent Indigenous health history has noted, the archives of a settler colonial state like Canada, read critically, can help to expose "the precarious position of Indigenous people with respect to health care and justice." (McCallum and Perry 2018, p. 5) Archives are a potential tool in the struggle for health equity, revealing injustice but also resistance.

Mainstream archival institutions such as national, provincial, municipal, and university archives are an essential part of the intentional collecting of all kinds of stories and records. Academic researchers, and especially those who are members of, or collaborate with, racialized and marginalized communities, are also important in creating records (such as oral histories) of these communities. However, the heritage sector in Canada reflects its racial and class privilege. As one of Canada's leading archival theorists, Terry Cook (2011, p. 173) suggested, "we keep what we are". For this reason, collecting of records and stories from outside of governments and elites should be led, where possible, by communities themselves. Although marginalized communities can practice their own forms of exclusion and silencing (X et al. 2010), this does not lessen the importance of community involvement.

COVID-19 presents an opportunity to preserve a rich and diverse historical record—one intended to honour all experiences and voices and in recognition of the ongoing structural inequalities that must not be lost to future histories. But policy changes are necessary in three key areas: how memory institutions are funded and supported, to address the gaps in our capacity to preserve the digital records that reflect how we communicate with one another today, and in how we preserve and make accessible valuable scholarly research into the societal impact of COVID-19.

We begin this paper by outlining how records preservation works in Canada today and the history of resource challenges across public and private archives since the 1990s. Section 3 describes significant, and highly concerning, barriers to the current and ongoing work of gathering pandemic records of all types. While efforts are underway across the country to preserve the pandemic experience, these are fragmented, underfunded, and lack critical support and access to technical skills. In many cases, archives simply cannot undertake the collection of pandemic records. COVID-19 has also highlighted the crisis in digital archiving, especially in smaller government and community memory institutions.

We then turn to a closer examination of two types of records in particular: records published on the World Wide Web, and academic research records. New policies are needed in both sectors, to enhance "archiving by design", which plans for the preservation and future accessibility of research and research data; promote the inclusion of marginalized groups in pandemic records; and coordinate preservation efforts, especially of records generated online. We conclude with three sets of policy and programming recommendations for governments and scholarly granting agencies that will increase our capacity to preserve the pandemic's history: strengthen available resources and infrastructure in the archival sector to preserve the historical record of COVID-19, create targeted capacity-building measures for digital records preservation, and ensure the preservation of scholarly research governed by ethical procedures.

Collecting everything has never been possible, nor even desirable. Archives collect perhaps only 1%–5% of all records produced. Verne Harris (2002, p. 65) characterized such collections as "a sliver

of a sliver of a sliver”. Acknowledging this reality, our goal is to begin a conversation about priorities for archival preservation, the need for greater equity and justice in our preservation practices, and how to safeguard the existence of historical records that will allow us in future to bear witness, with fairness and truth and in a spirit of reconciliation, to our society’s response to COVID-19.

2. Pandemic records in Canada

What kinds of records are now being produced about the COVID-19 pandemic? There are two main categories of records: public records and private records. All are produced in the course of daily activities. Public records are being produced by all levels of government; some of these public records are administrative and reflect the workings of government and others are official communications and pronouncements. Private records are being produced by for-profit and not-for-profit organizations as well as private individuals and families. We can include research records on the private side as most universities’ collective agreements grant ownership of these records to the academic staff that produce them.³ Almost all of these records will be in digital form or produced by digital means and they will come in myriad formats reflecting their forms, such as textual, sound, moving image, and so on, although some nondigital records, like paper diaries and hand-written correspondence, will still be produced.

Archival institutions are responsible for collecting these digital and analogue records (museums typically collect three-dimensional artifacts and libraries generally collect published works).⁴

Federal, provincial, and municipal archives are responsible for collecting the records that their level of government produces. In Canada however, these governmental archival institutions have often included private records in their collecting mandates. This dual initiative is considered quite unique in the world of archiving and is referred to as “Total Archives.” Archival specialist Laura Millar (1998, p. 103) argued that “the essence of ‘total archives’ came from an acceptance of public responsibility for the preservation of a wide range of archival materials, in all media and from all sources, in order to preserve society’s documentary heritage”. Further, these materials were to be used by people throughout society (a principle referred to as the total utilization of archives) (Smith 1972).

This democratic and clear-sighted vision of collecting the archives of both government and the private sector was achieved through a noteworthy investment of resources into Canada’s memory infrastructure. From the late 1940s to the 1970s the Public Archives of Canada (now LAC) expanded its services and holdings exponentially, while dozens of new archival institutions of all types were founded by myriad organizations and community groups throughout the country (Consultative Group on Canadian Archives 1980). The publication in 1975 of the report *To Know Ourselves: The Report of the Commission on Canadian Studies*, the so-called Symons Report, recommended a focus on Canadian Studies and the necessity of archives to support that study. This led to a surge in the establishment of university and college archives in the late 1970s (Symons 1975).

³Many research records relating to the pandemic and vaccines, however, are interprovincial and international in scope, complicating their collection.

⁴Additionally, every archives is expected to collect the records of their own sponsoring organization. There are typically no formal arrangements between archives as to which institution will collect what private materials, but most institutions observe the informal rule of territoriality, i.e., collecting in their own geographical area. So, for example, LAC collects records of the Government of Canada and private records of national organizations and of national importance, a municipal archives would collect the records of its municipal government and private records of municipal organizations and of municipal importance, and so on. Ultimately, however, private citizens, families, and organizations are free to deposit wherever they like, and these decisions are often linked to subjective decision-making such as they will want to deposit their records where someone they know has already deposited.

The “golden age” of government and private records collecting in Canadian public institutions was the 1970s, but the focus began to shift in the economic retrenchment of the 1990s and thereafter. Gradually over time government archives at all levels, including LAC, began limiting their collection of private records to try to keep up with the overwhelming volume of incoming government records and the new proliferation of digital records (Momryk 2001; Ex Libris Association 2018). Though most Canadian government archives still have a mandate for collecting private records, in general they have made their primary focus the records of their level of administration; however, government archives currently continue to administer private records, receive accessions from fonds established earlier, and in some few cases seek out and acquire select fonds of private records.⁵ University archives have increasingly assumed the burden of collecting private records as other institutions have retrenched.

More recently, LAC began to suffer due to serious shortages in staff, space, and other resources, including its operating budget. The Royal Society of Canada (RSC) Expert Panel (2014, p. 10) talked about the “air of crisis acknowledged repeatedly by researchers concerned about vanishing and undervalued national, cultural resources”. For example, in May 2009 LAC implemented an immediate halt to paid acquisitions with a “moratorium of 10 months” and subsequently reduced its purchases significantly. Further, in 2011–2012, LAC placed an “informal pause” on acquiring private archival records by donation. Staffing levels for private records were subsequently reduced by about 40%. Today, the acquisition program of private archives at LAC has been revived but the transfer of archives from government departments understandably continues to dominate even though resources for both private and government records have evened out (LAC 2020a).⁶ LAC’s overall budget has not been increased since the deep cuts around 2012, yet their acquisitions, particularly of government and digital records, continue to grow significantly (LAC 2015, 2020a).

Cuts to LAC’s budget in turn affected their ability to financially support university and small community archives. Up to \$1 million yearly was lost in support to archives when LAC terminated funding for the Archival Community Digitization Program in March 2009 (Ex Libris Association 2018). In 2012 the National Archival Development Program that provided an additional \$1.7 million for archives across the country was also discontinued, for a total loss of \$2.7 million to the community. By 2014–2015, \$9.6 million had been cut from the LAC’s budget (approximately a 10% reduction), and administrators there felt they were no longer able to support other institutions (Muir 2012; Bak 2016a, pp. 390–391).

After The RSC Expert Panel (2014) recommended that LAC fund collaborative projects, and under new leadership, LAC carved funds from their own operating budget to introduce a reduced annual grants program, the Documentary Heritage Communities Program of \$1.7 million (similar to the National Archival Development Program) in June 2015. This time however, with so little money to go around, public institutions such as university archives were ineligible for this program

⁵A “fonds” is, according to the Society of American Archivists’ (2005–2020) *Dictionary of Archives Terminology*, “the entire body of records of an organization, family, or individual that have been created and accumulated as the result of an organic process reflecting the functions of the creator.” See for example the *Libraries and Archives Canada Act* (available from laws-lois.justice.gc.ca/eng/acts/L-7.7/index.html), the *Archives and Record Keeping Act of Manitoba* (available from laws-lois.justice.gc.ca/eng/acts/L-7.7/index.html), or the City of Winnipeg Records Management By-Law (available from clkapps.winnipeg.ca/DMIS/Documents/DocExt/BL/2003/2003.166.pdf).

⁶According to LAC’s 2019–2020 Annual Report, private archives and government records sections each received 7% of the total budget. The quantity of government records that can be processed however is far greater because of the finding aids that come with the government records. Processing private records is very labour intensive.

(LAC 2020b).⁷ More recently, to augment these monies, LAC (2020a) has been developing targeted programs in priority areas, such as “Listen, Hear Our Voices,” which provides “funding and digitization services to preserve Indigenous culture and language recordings.” (LAC 2019b)⁸ These efforts and other programs within the LAC “Indigenous Heritage Action Plan” are laudable, but they do not go far enough (LAC 2020a, 2020b). Gross inequities in funding of public archives compared with libraries and museums in Canada were pointed out in 2010 and in 2016 but these funding shortfalls have yet to be rectified (Sweeney 2010; Steering Committee on Canada’s Archives n.d.).

In the overall context of cuts to public sector spending, many levels of government have not been able to even keep up with collecting their own records. The RSC Expert Panel’s (2014) report detailed this precipitous decline in collecting of all types of records.⁹ Likewise, many nongovernmental organizations have withdrawn from maintaining their own archives because of the resources required and the complexity of collecting records over the long term. This includes large commercial enterprises, such as Canadian Tire, as well as religious, ethnic, and special interest organizations (Western University Archives and Special Collections 2020). As organizations have closed, those records have been transferred to other archives or been lost. For instance, just before the Ukrainian National Home, a Ukrainian cultural and education society in Winnipeg, turned 100 years old, the organization closed its doors and turned over its records to the University of Manitoba Archives & Special Collections (University of Manitoba Archives & Special Collections 2020). This is not atypical. Particularly as memberships have dropped in such organizations, they have struggled to stay afloat, much less look after their own records.¹⁰

The Symons Report (Symons 1975) foresaw a strong role for the universities and colleges across Canada in leading and coordinating a national regional network of institutions collecting records of Canadian life. And indeed, many universities and colleges have stepped up and collected regional records they felt were most valuable and in danger of being lost. However, just as with governmental and private organizational archives, many university and college archives have not been able to keep up with collecting even their own institutions’ records, which leaves them in a poor position to undertake this critical task of collecting records relating to COVID-19.

3. Current status of collection

Archives have been, like so many other sectors of Canadian society, under strain during the COVID-19 pandemic.¹¹ A recent online meeting of the University and College Archivists Special Interest Section of the Association of Canadian Archivists has painted a dire picture of conditions in those archives during the pandemic, with staff layoffs, no ability to hire temporary workers, remaining staff working from home in isolated conditions, and in some cases an absolute freeze on acquiring both nondigital and digital records. This shows that without support, university and college archives across Canada will not be able to fully collect records of the pandemic unless those records survive well into the future. If that is the case, many of these records will have been lost. Some

⁷Funds from this Documentary Heritage Communities Program have since been reduced to \$1.5 million as of this writing (LAC 2020b). Only organizations that are “privately funded (50% or more)” are eligible to apply for funds with the exception of Indigenous organizations/government institutions.

⁸This is part of a broader LAC Indigenous Heritage Action Plan. See: LAC (2019a). LAC has been working to build capacity in Indigenous communities and nations for their own community and national archives. See especially the section “Purpose and Principles.”

⁹See also The Expert Panel on Memory Institutions and the Digital Revolution (2015).

¹⁰A rare success story comes from the Canadian Mennonite University (2017).

¹¹Yet there has been recognition by the Association of Canadian Archivists, the Association des archivistes du Québec (2020), the International Council on Archives (2020), and UNESCO (2020), among others, that with COVID-19 “the duty to document does not cease in a crisis, it becomes more essential.”

university archives and libraries are collecting web archives of the pandemic, most by turning to the external [Archive-It \(2020\)](#) service, but this has not been consistent and does not cover nondigital collections. Compounding this is the issue of scale. Given the sheer scope of collecting relating to the COVID-19 pandemic—the pandemic has touched almost all media, governments, institutions, businesses, and beyond—records pertaining to COVID-19 present an overwhelming mass of information. In this, it represents in some ways a more acute version of the problem of digital abundance of information more generally ([Milligan 2019](#)).

Still, we can see some Canadian archival institutions striving to capture the moment despite obstacles. There has been strong interest in collecting records of the pandemic by university archives, representing a good first step. [Archives & Special Collections of Brock University Library \(2020\)](#) for example, has been collecting records relating to COVID-19 in the Niagara region. A separate webpage dedicated to the pandemic requests people to contribute both digital and nondigital records and provides an opportunity for people to answer questions about the pandemic. Likewise, the [University of Saskatchewan's University Archives and Special Collections \(2020\)](#) has joined with the Digital Research Centre and a faculty member specializing in the history of medicine and public health to capture the history of the pandemic in that region. Some university archives have been approaching the topic through collaborations. The [University of Ottawa Library's \(2020\)](#) Archives and Special Collections (which is home to the Canadian Archive of Women in STEM and the Women's Archives Collections), is collecting women's experiences of COVID-19 in both English and French. This is in conjunction with a larger initiative coordinated with Information and Archives Management at the University of Ottawa (2020), the [City of Ottawa Archives \(2020\)](#), and [Corporate Records and Archives of Carleton University \(2020\)](#).¹²

The Steering Committee on Canada's Archives (SCCA) has been working to understand the broader Canadian experience. SCCA represents a key sector of leadership and decision-makers that will support the work being undertaken by Canadian memory institutions and their professional workforce of archivists and record managers—including Quebec and French language institutions.¹³ This group includes racialized and marginalized community archives. Ensuring a pan-Canadian perspective is critical to this working group.

In October 2020 the SCCA circulated a brief survey to both Anglophone and Francophone archival community members, exploring the work being undertaken to capture pandemic stories across the country. Survey data will help the SCCA to consider the policies that will support collections focused on community experiences and help archivists in their efforts at capturing the overwhelming digital record that continues to grow exponentially each day. There are several challenges to consider: the needs of researchers working on pandemic studies today and in future, the strained capacity and resources of memory institutions, and, the processes in place to carefully manage the data collected and stored.

In less than two weeks, there was a rapid response to the survey. Only 24 respondents, however, indicated they were actively collecting COVID-19 records: two were collecting nondigital records only, 12 digital records only, and 10 institutions indicated that they were collecting both digital and

¹²Information and Archives Management University of Ottawa (2020) is also collecting institutional records relating to COVID-19.

¹³The Secretariat of the SCCA is with the Canadian Council of Archives. The current SCCA chair is Joanna Aiton-Kerr and representatives from the Association des archivistes du Québec, the Association of Canadian Archivists, the Council of Provincial and Territorial Archives, Library and Archives Canada and when possible, representatives from ARMA Canada. See "New Model for the Steering Committee on Canada's Archives," 2019, archivescanada.ca/uploads/files/News/SCCA_TransitionMessage_EN.pdf.

nondigital records. The survey did not encompass all archival institutions in Canada, so it can only provide a snapshot of what is occurring. A further review of archival institutions on the web only turned up 10 more institutions that were doing some sort of collecting of COVID-19 records. Together this represents a little more than 4% of archives in Canada, which are able to muster the resources to collect COVID-19 records. For a current list of sites online at the time of publication, please see [Appendix 1](#).

The SCCA survey revealed tremendous diversity in digital archiving. Some institutions are capturing records daily. Some indicated that they are not able to capture any digital records. For example, one institution's survey response indicated: "Since we do not yet have a digital archive in place (although one is mandated in legislation), the records are being managed in place for now—mainly in local area networks, the government EDRMS (Electronic Document and Records Management System), SharePoint sites, and in-house systems. We unfortunately are not doing anything about web-based records." Other organizations capture records when possible and some have made it possible for individuals to submit their records online.

It is clear from the results of the survey that Canadian archival institutions are facing challenges collecting digital material in particular. For instance, a diverse array of technology is being used by archival institutions. These range from tools to capture websites, such as the open-source web crawler Heritrix or the Internet Archive's non-profit web archiving service, Archive-It, to managing born digital content through open-source systems such as Archivematica, to digitizing physical documents with high-resolution cameras.¹⁴ To drive community archiving, some institutions noted that they were turning to the open-source Omeka platform as a way to share past pandemic documents and as a means of collecting material and records from community members who wish to upload and share their documents and experiences.¹⁵ This wide set of digital archiving tools being used by survey respondents demonstrates our concern about a patchwork approach that lacks appropriate supports and funding. For example, many available technologies for digital records preservation are open source or free at the outset, and then expenses are incurred as more memory is used ([Bak 2020](#)). Dedicated servers, secure systems and (or) robust digital infrastructures are needed to support long-term projects, but available resources are insufficient.

In terms of funding, several organizations indicated that they are using their operational budget or current resources to undertake this work. Many respondents indicated they do not have any specific resources to facilitate the preservation of COVID-19 pandemic records. Some additional funds have been made available. Canadian Heritage has provided the "COVID-19 Emergency Support Fund" for heritage organizations, including archives, which is available through the Museums Assistance Program ([Government of Canada, Culture, History and Sport 2020](#)). This program provides \$53 million of emergency financial assistance for the preservation and presentation of heritage collections and is intended for temporary relief so that these institutions can make plans for the future. The idea is to help maintain jobs and support business continuity for organizations that have been negatively affected by COVID-19. This fund could be the basis for encouraging archives to collect COVID-19

¹⁴Indeed, the SCCA survey demonstrated a wide array of technology: from institutions using commercial services such as Dropbox, WeTransfer, and Google to store and transfer documents, to digital cameras, as well as physical infrastructure such as external hard drives and servers.

¹⁵Omeka has been used to capture community experiences in times of crisis in the United States for Example. See the September 11 Digital Archive at the [Roy Rosenzweig Center for History and New Media and American Social History Project/Center for Media and Learning \(2002–2020\)](#), and the Omeka site that captures the stories of Katrina and Rita: [Roy Rosenzweig Center for History and New Media \(2005–2020\)](#) which contains more than 13 000 items uploaded by community members.

records. However, as we will see below, COVID-19 collecting requires additional labour—and ongoing budgetary resources—given the volume of collecting needed on top of existing activities. In general, in the past archives have not been very good at articulating their need for ongoing funds to preserve legacy analogue records as well as new ongoing funds to deal with the enormous influx of digital records. This places them in a poor position to deal with the onslaught of digital pandemic records.

Now we will turn to two types of records that can assist in capturing a more comprehensive COVID-19 record: records published on the World Wide Web and academic research records. Both kinds of records provide insight across society broadly, including among marginalized populations, and they are areas in which Canadian archivists presently have the tools, practices, and theory to capture and preserve today.

4. Case study one: specific challenges facing comprehensive collecting of pandemic web records

The coronavirus pandemic will leave behind a largely digital record. With social distancing, digital media has become more important than ever for many of our interactions with colleagues, friends, and loved ones. Canadians anxiously update social media feeds in anticipation of case count numbers, engage with their government representatives, and close out their evenings by “doom scrolling” through an ever-negative torrent of information. Many digital trends, from the exponential growth in Zoom subscriptions to changing information-seeking behaviour, can be ascribed to the ongoing pandemic ([Kastrenakes 2020](#); [Watercutter 2020](#)). It is clear 2020 will be a year that we will look back on for some time, both in general due to the start of the pandemic as well as more specifically in terms of how society transformed its relationship to technology and social media.

Yet these are mostly accelerations of established trends. Canadians have been using social media and other digital technologies to create records for several decades, and the preservation of digital information has long required prompt attention from memory institutions ([The Expert Panel on Memory Institutions and the Digital Revolution 2015](#)). Whereas nondigital information is vulnerable in its own ways, it can be read by somebody without technological mediation—and, it can last years in a box or on a shelf ([Rothenberg 1999](#)). Imagine: a printed government document about Canada’s pandemic response can sit in a filing cabinet and its importance can be determined years later.

Digital content on a website, however, presents different challenges.¹⁶ For example, a Government of Canada COVID-19 response page may be updated or altered on a daily or even hourly basis; deliberate and continuous capture is required if a full record is to be preserved. Furthermore, if it is removed, deleted, or a web hosting fee is not paid, the document quickly disappears. Seemingly ephemeral data—daily case counts for provinces presented via interactive visualization; social media praise for, or complaints about, local public health officers; or pictures of empty toilet paper shelves which in turn incite panic buying—are all core to any understanding of the pandemic yet may quickly disappear. Even before the pandemic sent many white-collar workers to home offices, information was increasingly produced and disseminated in a distributed fashion. Widespread remote working has further entrenched this.

¹⁶While there are many diverse types of digital records about the pandemic being produced, in this section we focus on the specific example of web archives. By web archiving, we refer to the process of capturing web-based content for long-term preservation. For example, to preserve a copy of the federal government’s COVID-19 modelling page as of a given date, ensuring that in the future it can be replayed more or less as a visitor would have seen it at the time. This is especially important as web-based documents are going to both be a common and indeed increasingly typical record type created during the pandemic, and thus require preservation.

When it comes to web archives, some countries, such as the United Kingdom, France, and Denmark, mandate their national libraries, through the expansive power of legal deposit, to capture a comprehensive digital record of national life. These libraries do so by both mandating the periodic collection of all websites within their national web domains, as well as by empowering teams of curators to selectively harvest material across the broader web (i.e., activist movements, social media feeds, newspaper websites, and prominent personal pages). This ensures both the collection of a wide and diverse array of content, as well as the targeted collection of particular, selected material. Balancing broad collection with further specific targeting can complement each other well.

Canada, of course, faces some unique challenges due to its vast geography as well as internet bandwidth limitations in rural and especially remote northern areas. Various digital divides—of connectivity, of hardware and software, of literacy—effectively reduce digital participation among specific communities and in much of rural and northern Canada (Haight et al. 2014). This means that not all individuals experience the pandemic online in the same way, and crucially, the dramatic limits on upload speeds in communities dependent on satellite connections to the internet means that individuals in those communities are far less likely to share material via the internet. Further, while the World Wide Web is a publisher-centric medium, social media, while user-centric, is complicated by a legal context in which most data on these social media platforms is owned by for-profit companies and not social media users, creating difficulties for harvesting. Thus, this web archiving will not necessarily cover all members of racialized and marginalized communities. Community archiving and academic researchers will have to supplement these efforts.

In Canada, while LAC undertakes web archiving collection (as do countless university libraries, archives, and provincial organizations), it is happening on a patchwork basis across the country. Moreover, when web archiving does happen, the resulting collections are often archived in cloud-based solutions that sometimes store Canadian archival data on servers located outside of Canada. In recent years the US nonprofit Internet Archive's Archive-It program and infrastructure has emerged as the solution of choice for many Canadian university and governmental archives, including LAC. Much of this cultural material ends up being stored in the United States, due to technical obstacles and the lack of local infrastructure to "repatriate" this data. These sorts of noncustodial solutions reflect the eroded funding of Canadian archives, requiring hard choices in meeting archival mandates. Preserving Canadian digital archives on non-Canadian servers makes them subject to non-Canadian data laws and represents a clear threat to Canadian data sovereignty.¹⁷ This is true whether the archives are Web archives, social media archives, research data archives, or any other form of digital record. While major cloud computing providers, such as Amazon Web Services and Microsoft Azure, now offer Canadian data centres, they are often more expensive on a per-gigabyte nature than their American counterparts. More funding and support are necessary to ensure that Canadian institutions can steward Canadian data in this country.

Coordination is a key issue facing archivists and librarians when it comes to documenting the pandemic. The Canadian Web Archiving Coalition (CWAC) fulfills a coordinating role.¹⁸ CWAC has further negotiated crucial long-term storage and discounted services with the Internet Archive's subscription service Archive-It. There are bright spots of coordination between institutions throughout Ontario as well as parts of British Columbia, reflecting existing institutional ties. In general, the

¹⁷For instance, after 9/11 there was the understanding that the Department of Homeland Security in the United States would be able to access any servers, including those holding Canadians' personal information held on American servers, without having to get a warrant.

¹⁸For more on CWAC, see carl-abrc.ca/advancing-research/digital-preservation/cwac/. Other national, regional and local networks of archivists and librarians could assist with this coordinating role.

reality is that long-term collection and preservation of digital data and records reflects institutional ties to local communities.

For example, the University of Saskatchewan, reflecting deep connections with the province and a community-focused ethos within its mission, takes an expansive view of its collection mandate and is thus attempting to comprehensively archive the pandemic experience of Saskatchewan.¹⁹ Yet even these impressive local efforts can wane as dramatic memories of the first pandemic wave—desolate streets, confusion, business closures—dissipate. Subsequent waves of the pandemic will be terrible, but may not represent that sudden moment of shock and dislocation that many felt in March 2020. Just as Canadians suffer from “COVID fatigue,” in the absence of a strong mandate so too may our memory institutions. Archivists and librarians have many demands on their time, especially as existing workload pressures are compounded by the pandemic. The informal coordination between institutions was an advantage during fast-moving developments as the pandemic appeared on the horizon for many Canadians in March 2020, but the lack of formal commitments and connections will hurt as during the longer, “marathon-not-a-sprint” pandemic stage.

Compounding this problem is the issue of digital collecting being only a fractional part of the job descriptions of those responsible. Many archives and libraries relegate this critical web archiving task to a quarter or half of a staff member’s job description, supported if they are fortunate by a co-op student.²⁰ While the digital record is arguably the most important aspect of the pandemic documentary record, digital collections and web archiving are too often disconnected from other core operational elements of many archives and libraries. This needed reassessment before the pandemic. Today, without substantial investment and organizational change, it means that our cultural record is jeopardized.

What will happen if we do not act? What will the history of the year 2020 look like in a quarter century? (a point broadly explored in Milligan (2019)). Will we have available documentation of this born-digital record? Imagine a history of the pandemic that relies only on fragmented collecting. We might have one municipality’s coronavirus response webpage here, but not another; a dashboard from one university documenting a spreading outbreak but not those of a dozen other institutions; the voices of a few influential politicians, rather than the daily throb of social media discussions around testing queues, positivity rates, or social distancing regulations. The live-tweeted experiences of Canadians in testing queues, amongst back-to-school stresses, could tell future historians and policymakers much about this moment that might not be captured in the “official” record. Having a comprehensive record of our country’s web activity is not a “moonshot” demand, but something that citizens in many countries around the world have as a matter of course. No record will be perfect, and historians will still need to deal with inevitable gaps and lapses in coverage. This is inevitable for any archival record that encompasses both private and public records. Coordinated, widespread collection will, however, replace patchwork effort and dramatically improve the fidelity of the historical record.

We accordingly recommend three priorities for the preservation of digital records. First, while governments and institutions have long recognized the value of born-digital records, we need to bolster that recognition with an investment commensurate to the challenge that they bring. Second, we urge the development of a systematic program that can facilitate formally coordinated web archiving at the

¹⁹See covid19archive.usask.ca.

²⁰In the United States, the National Digital Stewardship Alliance’s 2017 “Web Archiving in the United States” survey indicated that the vast majority of web archiving institutions in the United States (80%) employed less than one full-time equivalent employee to web archiving. While an equivalent survey for Canada does not exist, this has been confirmed on CWAC calls as well as participation in the web archiving community. This is an under-resourced field.

municipal, provincial, and federal level. And, finally, we call for the empowerment and funding of LAC so that they can carry out long-term, recurring, and comprehensive crawls of the Canadian web domain. Through all of this, we will enable the collection of a robust digital record of 2020—and beyond.

5. Case study two: from “destruction by default” to “archive by design,” the establishment of research processes to promote retention and reuse of scholarly research records through archiving

During the pandemic federal granting councils have made funds available specifically to encourage academic researchers to study medical, scientific, and social aspects of the pandemic and our collective, community and individual responses to it. Capturing the research records that emerge from and support these varied studies of COVID-19 can significantly enrich future understandings of the pandemic and enable additional studies.

“Archive by design” describes data and records that are created and managed with the intention of deposit in an archives, to be accessed and used today and a century from today (Saaman 2020).²¹ This could be accomplished through revisions to The Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2) (Government of Canada, Panel on Research Ethics 2018).²²

Tri-Council policies on research data creation, keeping, and use promote the reuse of research data and records. The SSHRC Research Data Archiving Policy, for example, notes “Sharing data strengthens our collective capacity to meet scholarly standards of openness by providing opportunities to further analyze, replicate, verify and refine research findings. Such opportunities enhance progress within fields of research, avoid duplication of primary collection of data, as well as support the expansion of interdisciplinary research” (SSHRC 2016). TCPS2 explicitly states “REBs [research ethics boards] should not automatically impose a requirement that researchers destroy the research data.” (Government of Canada, Panel on Research Ethics 2018; 5.3)

To achieve archiving by design for Tri-Council funded research records and data, however, researchers need to be made fully aware of the already clear guidance in TCPS2 on securing consent from participants for ongoing secondary use and reuse of research data and records, and both researchers and institutional REBs need clearer guidance on the distinction between secondary use and archiving of research records and data. Further, archives and data services require expanded resources and infrastructure to retain these records for the long term and to make them available on demand, now, and in the future. And finally, researchers need to discuss transferring records to

²¹ As noted in the section on web archives, the acquisition, management, preservation, and accessibility of archival research data can be a shared responsibility between archives and many departments, including libraries and data centres.

²² This discussion does not include TCPS2 Chapter Nine, which addresses research with Indigenous peoples. While recommendations for consent and community participation in Chapter Nine exceed those elsewhere in TCPS2, they do not contradict them. Here we are addressing minimum necessary requirements for the creation, use, secondary use and reuse of research records and data in TCPS2, but does not extend to the special treatment of data and records of Indigenous research. Among the most significant aspects of Chapter Nine is its discussion of community consent. This is particularly important to consider with regard to the long-term implications of archiving research data and records, and should likely be considered in relation to many communities, and not only Indigenous communities. When thinking about records and data produced by, or with the participation of, Indigenous people and communities, it is important to go beyond TCPS2 and think about Indigenous-authored and -controlled protocols such as the *First Nations Principles of OCAP*[®] (ENIGC 2020) and the *National Inuit Strategy on Research* (Inuit Tapiriit Kanatami 2018). McCallum (2017) provided an essential demonstration of the interweaving of many and various protocols into Indigenous research processes.

potential archives prior to the creation of records to ensure that the archives have the capacity to take the records and to ensure that records are created in appropriate formats.

We encounter an additional problem of research ethics applied to born-digital information such as social media and web archives. As currently written, TCPS2 offers insufficient guidance on how to ethically carry out online research, forcing researchers to rely on a mixture of local and disciplinary practices. In many cases, a tweet or a website is considered a “publication” and thus exempt from formal ethical review. Yet a tweet from the Prime Minister of Canada is different than using a tweet from a 16-year-old teenager sharing their personal thoughts about COVID-19 or an Indigenous activist organizing a protest. They require different levels of consent, contextualization, and ethical use despite being posts on the same platform.²³

The Tri-Council’s Policy Statement ([Government of Canada, Panel on Research Ethics 2018](#)) requires that consent to participate in research be free, informed, and ongoing, and sets stringent requirements for the secondary use of research data, whether by the initial researcher or others. It is not clear how this guidance relates to the deposit of research records and data in archives. In TCPS2, Article 2.2 excludes archival research from consideration and by the REBs that apply the policy. Secondary use, discussed in Chapter Five, occurs under the authority of a REB. This applies to secondary use by the original researcher or by later researchers, who presumably might gain access through personal contacts among research teams. Archives have for centuries served as a means of sharing the kinds of records discussed in TCPS2 Chapter Five, including “health care records, school records, . . . vital statistics registries or unemployment records”, as well as research records and data. Access to records in archives is governed by the access policies of the archives, written in accordance with local and national laws and regulations. Some university archives have already begun collecting and providing access to research records and data, with REB support, but this is not recognized in TCPS2. Logically, TCPS2 might address archival deposit of research data and records in Chapter Five Section D, but it does not. While some individual researchers forge relationships with archives and special collections to deposit research data, this is more the exception than the rule and REBs may vary in their openness to this arrangement.

TCPS2 defines archives as “national, provincial or municipal.”²⁴ ([Government of Canada, Panel on Research Ethics 2018](#); Article 2.2) The SSHRC Research Data Archiving Policy identifies the researcher’s “postsecondary institution’s or organization’s library or data service” as a potential repository for research data, but does not offer guidance on how to deposit research data or records with libraries or data services in a way that is compliant with TCPS2. Remarkably, the SSHRC Research Data Archiving Policy does not address archives. Given the sheer amount of research data being collected about the COVID-19 pandemic, from oral histories to surveys, this is a pressing concern.

The limited engagement with archives in TCPS2, including the specification that archives are “national, provincial or municipal”, contrasts with the treatment of biobanks. TCPS2 Chapter 12 ([Government of Canada, Panel on Research Ethics 2018](#)) notes “the collection and retention of human biological materials in biobanks creates an ongoing resource for research” and makes

²³Scholars who work in this space turn to the Association of Internet Researchers (AoIR) ethical guidelines on online research. Context, trying to account for the expectations of creators, is especially key when working in this space. In other scholarship, we have framed these discussions as the “start and not the end of a discussion.” ([Lin et al. 2020](#)) We are also informed by ongoing discussions from the [Documenting the Now Project \(2020; docnow.io\)](#), which has engaged in considerable community engagement around how best to respectfully and ethically use born-digital online sources.

²⁴Corporations and nongovernmental organizations are unlikely to take these research records because of their mandates, but postsecondary institutions, Indigenous groups, and community-controlled archives are likely and appropriate repositories for these records.

allowance for biobanks that range in size, coverage, and administrative control by governments or by public or private organizations (Section D). Responsibility for ensuring appropriate “physical, administrative and technical safeguards” for the biobank is recognized as the obligation of the sponsoring organization “in accordance with applicable standards”. Thus, a range of administrative arrangements are acknowledged for biobanks, subject only to whether or not they follow appropriate standards and practices. Consent for deposit of biological materials in biobanks is the responsibility of the researcher in the first instance, and the biobank upon deposit, which might require further negotiations of consent after deposit depending on the circumstances.

To bring the secondary use and reuse of research records and data into alignment with the secondary use and reuse of biological materials would require: the identification of archives, generally, as the logical means for ensuring that research records and data can be discovered and accessed by other research teams; TCPS2 expanding its definition of archives to include many types of archives; and the identification of compliance with appropriate professional practices, standards, regulations and laws as key criteria for determining what archives might qualify as appropriate repositories, rather than their location within government. In light of the infrastructure and storage costs of preserving and providing access to research data and records, researchers should consider including some of these costs in grant budgets, and negotiate with archives prior to records creation. While some researchers already deposit their records and data in archives, it is a small number. Appropriate guidance, written into TCPS2, would ensure this happens routinely. It should be acknowledged however that not all research data will be or should be archived, depending on the circumstances of the data’s creation.

Archives of postsecondary institutions, community archives, and Indigenous archives are logical and appropriate sites for the long-term preservation and access of research data and records, including those of research into the myriad impacts of COVID-19 on racialized and minority communities. Archives have appropriate practices, standards, policies, and technologies for this work, but they require strengthened mandates that clearly extend to this task as well as expanded resources and infrastructure to be able to ingest and make available the large bodies of almost exclusively digital research records that are produced by Tri-Council-funded research teams today (Bak 2016b). Ensuring that Canadian archives have the infrastructure, resources, and mandate to accept, preserve and provide access to research data and records is a precondition for archiving by design.²⁵ With this infrastructure in place, the next step is for researchers to negotiate with appropriate archives ahead of a research project, and for research grant applications to include funding for the preservation of research data and records.

6. Collecting in times of crisis: training, tools, and support

There are many challenges to the work that is before us. Social media in the past dozen years has created opportunities to capture, in some cases, the moment-by-moment experiences of a diversity of individuals’ experiences living through the pandemic across the land. Skills and tools needed to capture this information should be shared widely and across memory institutions.

Beyond technical challenges, archivists increasingly need to consider the ethical dimensions of collecting material from everyday Canadians (Lomborg 2018; Lin et al. 2020). Social media, for example, may be considered as ephemeral by users but ends up being preserved for perpetuity in Canadian collections. Should this material be collected without consent? If so, how should access be managed? While this remains an unsettled area of scholarship and conversation, archivists are increasingly

²⁵Note that for academic institutions, the archives will be working closely with many players on the library side to accommodate digital research records.

attuned to such pressing questions, particularly with regard to Indigenous records.²⁶ In much of this literature, consent has emerged as the key issue. While archives have a long tradition of applying appropriate limitations on access based on legal and regulatory requirements, cultural norms, and donor agreements, the notion of consent has sometimes been undertheorized in our society and in archival policies and thinking. For example, we are slowly realizing the implications of allowing individual consent for DNA analysis, which has allowed private companies to create massive stores of DNA that is common to families and communities (Creet 2020). Similarly, personal consent to the archiving of data and records that relate to families and communities—regardless if the individual is a member of a community or not—has in the past resulted in sensitive information passing outside of community control.²⁷

Fortunately, the challenges of consent are well explored in TCPS2, where consent to participating in research processes, and to research data and record retention, is specified as being voluntary, informed and ongoing. The guidance on consent however may need to be augmented for collecting social media archives. Chapter Nine of TCPS2 offers a nuanced exploration of the interrelated nature of individual, familial and community consent, though it is specified as only applying to Indigenous research. In short, bringing archival work into alignment with TCPS2 could help to surface ethical considerations in digital archiving.

The work of archiving by design pandemic material is not limited to a 2020 project but will require ongoing support. In addition to a website listing ongoing COVID-19 projects, a literature review of the measures being undertaken to capture municipal, provincial, and federal responses to document responses to the pandemic would support this work.

Building on guidelines established by SSHRC, clear guidelines, resources, and tools can be further refined and shared. This is necessary to ensure the safety of materials collected and preserved and of those who are undertaking the management of this difficult work.²⁸

7. Conclusion

The challenge of preserving a rich and diverse record of the COVID-19 pandemic in Canada should concern future historians, archivists, records keepers, and policymakers alike. Over the last year, Canadians have seen a flurry of federal, provincial, and municipal government schemes. These have included national programs such as the Canada Emergency Response Benefit (CERB) or the Canada Emergency Wage Subsidy (CEWS), to local initiatives such as Toronto's CafeTO program to encourage outdoor patios. Amidst all this, Canadians have unevenly returned to work (the

²⁶See, for example: Steering Committee on Canada's Archives. July 2020. Response to the report of the Truth and Reconciliation Commission Taskforce. A reconciliation framework for Canadian archives. Draft for Public Review [online]: Available from archives2026.files.wordpress.com/2020/07/reconciliationframeworkforarchives_july2020_en.pdf; International Council on Archives. 25 October 2019. Tandanya: Adelaide Declaration [online]: Available from ica.org/sites/default/files/tandanya_adelaide_declaration_eng.pdf; First Archivists Circle. 4 September 2007. Protocols for Native American archival materials [online]: Available from www2.nau.edu/libnap-p/protocols.html.

²⁷The literature on this problem is vast, particularly with regard to Indigenous archives. A good starting point is William Hagan, "Archival captive—the American Indian," *The American Archivist*, 41 (1978): 135–142. This is not only a problem for Indigenous communities. For an example from an LGBTQ2S perspective, see Steven Maynard, "The burning, wilful evidence": lesbian/gay history and archival research, *Archivaria*, 33 (1991): 195–201.

²⁸An excellent point of departure would be building on the work of the Society of American Archivists and their documentation and resources that support the crisis response work underway across the country. See: Society of American Archivists, "Documenting in times of crisis: a resource kit" (available from www2.archivists.org/advocacy/documenting-in-times-of-crisis-a-resource-kit).

“she-cession,” has been described by economists and Deputy Prime Minister Chrystia Freeland alike), are witnessing dramatic changes in local real estate markets, and we are seeing a patchwork of business closures. As our society is reshaped in so many ways, we will need to draw on vibrant documentary records to see what changes resulted directly from the pandemic, as opposed to those which may have been percolating in the background and perhaps just being accelerated. This pandemic will end. Social scientists, humanists, and policymakers will need information to see what has worked, what has not, and how we can equitably and effectively rebuild the Canadian economy.

Even before the pandemic, digital records brought considerable challenge to memory institutions across the country. Not only does the processing of nondigital records from decades past remain a considerable and ongoing challenge, but to this task must be added new and emerging media types and electronic records, from government discussions to social media conversations. Ultimately, acquiring, preserving, and making available digital records is not a cheap or easy task, either in terms of infrastructure costs or personnel.

Strong leadership and coordination towards preservation should be provided by LAC, supported through the provision of federal funding to governmental and private memory organizations. As noted in *The Royal Society report The Future Now* (2014, p. 193) “to be effective, collaboration requires agreed-upon policies and best practices”. Those practices should be easily accessible to nonexperts, and bolstered by skills development and support. Otherwise, the final result will be a haphazard agglomeration of recording preservation that will favour those who have the means, the time, and the support to produce documentation about the pandemic. The voices of the majority, and of minority groups who wield limited social and economic power, are easily lost without a shared social commitment to preventing the next “forgotten pandemic”.

8. Policy recommendations

1. Strengthen available resources and infrastructure in the archival sector to preserve the historical record of COVID-19:
 - Encourage university and college, Indigenous, community (including racialized and marginalized community), religious, and other nongovernmental archives to preserve records documenting society’s response to COVID-19 through policy leadership at the federal level.
 - Support them in doing so through the provision of a federal funding stream, such as the extension of the COVID-19 Emergency Support Fund or the Documentary Heritage Communities Program. These grants could potentially be distributed using the Canadian Council of Archives’ already well-established allocation infrastructure.²⁹
 - Provide targeted resources to community archives to allow them to preserve the records of their own communities.
 - Provide capacity-building support and guidance for the archival sector through LAC, as recommended by *The RSC Expert Panel* (2014) such as online training resources for how to collect and process pandemic records within a community, sample forms for donation, manuals to apply copyright rules to gathered materials and descriptive processes, and so on.

²⁹Government of Canada, Culture, History and Sport (2020) and LAC (2020b). The Canadian Council of Archives (2011) has served as the conduit for a number of funding programs over the years. See: archivescanada.ca/FinancialAssistance.

- Encourage the creation of a dedicated web-based resource tool to help the public and researchers locate and access pandemic records across Canada through this funding stream.
2. Create targeted capacity-building measures for digital records preservation:
 - Build on the recommendations in [UNESCO's \(2015\)](#) Recommendation Concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form which Canada signed on to.
 - Request the Government of Canada to provide a new “Born-Digital Preservation Program” to provide on-going funding to public and community archives. Using a coordinated approach, specifically encourage these archives through this funding to hire dedicated personnel to oversee the collection and preservation of websites, social media, and other forms of born-digital records. This would include Canadian material on websites on.net,.org,.com and other such domains.
 - Formally coordinate web archiving at the municipal, provincial, and federal levels. Given the often specialist nature of web archiving, a systematic program would help Canada build capacity in this vital area.
 - Empower and provide ongoing funding from the Government of Canada for LAC so that they can meet a long-term objective of continually acquiring and preserving a crawl of the entire Canadian worldwide web (specifically the.ca domain) and retain it on Canadian digital infrastructure so as to protect Canadian data sovereignty.
 - Provide targeted funding for the preservation of other born-digital records in Canada. This will require additional funding for either cloud-based storage or further investment in robust national digital infrastructure for long-term storage.
 3. Ensure the preservation of research governed by ethical procedures (TCPS2):
 - Revise TCPS2 to: identify archives as the mechanism by which the secondary use and reuse of research data and records is effected; expand its consideration of archives beyond those of “national, provincial, or municipal” governments; and establish compliance with appropriate practices, standards, regulations, and laws as the key indicator of whether an archives might serve as a site of deposit, preservation, and access of research data and records.
 - Ensure that research grants include funding for the archiving of research data and records, and that researchers negotiate with archives for the deposit of their research records and data in advance of creating research records and data, as part of the ethical review process.
 - Strengthen the infrastructure and resources of archives that are capable of serving as centres for the deposit, preservation, and access of scholarly research data and records through the provision of funding.

Author contributions

EWJ, SS, IM, GB, and J-AM conceived and designed the study. EWJ, SS, IM, GB, and J-AM performed the experiments/collected the data. EWJ, SS, IM, GB, and J-AM analyzed and interpreted the data. EWJ, SS, IM, GB, and J-AM contributed resources. EWJ, SS, IM, GB, and J-AM drafted or revised the manuscript.

Competing interests

The authors have declared that no competing interests exist.

Data availability statement

All relevant data are within the paper.

References

Archive-It. 2020. Welcome to Archive-It! [online]: Available from archive-it.org/.

Archives & Special Collections, Brock University Library. 2020. COVID-19 in Niagara [online]: Available from exhibits.library.brocku.ca/s/COVID-Niagara/page/home.

Association of Canadian Archivists and Association des archivistes du Québec. 2020. COVID-19: the duty to document does not cease in a crisis, it becomes more essential. Association of Canadian Archivists [online]: Available from archivists.ca/Latest-News-Announcements/9335695.

Bak G. 2016a. Trusted by whom? TDRs, standards culture and the nature of trust. *Archival Science*, 16: 373–402. DOI: [10.1007/s10502-015-9257-1](https://doi.org/10.1007/s10502-015-9257-1)

Bak G. 2016b. How soon is now? Writings on digital archiving in Canada from the 1980s to 2011. *The American Archivist*, 79(2): 283–319. DOI: [10.17723/0360-9081-79.2.283](https://doi.org/10.17723/0360-9081-79.2.283)

Bak G. 2020. Collaboration through open source software. Digital Preservation Coalition Blog [online]: Available from dpconline.org/blog/wdpd/blog-greg-bak-wdpd.

Burnett K. 2012. Race, disease, and public violence: smallpox and the (un)making of Calgary's Chinatown, 1892. *Social History of Medicine*, 25: 362–379. DOI: [10.1093/shm/hkr111](https://doi.org/10.1093/shm/hkr111)

Canadian Council of Archives. 2011. CCA—financial assistance. ArchivesCanada.ca [online]: Available from archivescanada.ca/FinancialAssistance.

Canadian Mennonite University. 2017. Mennonite Heritage Centre Archives & Gallery to continue under new structure. News Releases [online]: Available from media.cmu.ca/mhcarcarchivesandgallery.

Carleton University, Corporate Records and Archives. 2020. Carleton COVID-19 archival collection.

Caswell M. 2019. Dusting for fingerprints: introducing feminist standpoint appraisal. *Journal of Critical Library and Information Studies*, 3: 1–36.

City of Ottawa Archives. 2020. COVID-19 donations [online]: Available from ottawa.ca/en/arts-heritage-and-events/city-ottawa-archives/covid-19-donations.

Consultative Group on Canadian Archives. 1980. Canadian Archives: report to the Social Sciences and Humanities Research Council of Canada. Social Sciences and Humanities Research Council of Canada, Ottawa, Ontario.

Cook T. 2011. “We are what we keep; we keep what we are”: archival appraisal past, present and future. *Journal of the Society of Archivists*, 32(2): 173–189. DOI: [10.1080/00379816.2011.619688](https://doi.org/10.1080/00379816.2011.619688)

Creet J. 2020. *The genealogical sublime*. University of Massachusetts Press, Amherst, Massachusetts.

Crosby AW. 1976. *Epidemic and peace, 1918*. Greenwood, Westport, Connecticut.

Crosby AW. 1989. *America's forgotten pandemic: the influenza of 1918*. Cambridge University Press, Cambridge, UK.

Documenting the Now Project. 2020. DocNow [online]: Available from docnow.io.

Drees LM. 2013. Healing histories: stories from Canada's Indian hospitals. University of Alberta Press, Edmonton, Alberta.

Ex Libris Association. 2018. Library and Archives Canada service decline after 2004—Ex Libris Association Timeline. Ex Libris Association [online]: Available from exlibris.ca/doku.php?id=activities:letters:ex_libris_association_timeline_on_library_and_archives_canada_servive_decline_after_2004.

Eyford RC. 2006. Quarantined within a new colonial order: the 1876–1877 Lake Winnipeg smallpox epidemic. *Journal of the Canadian Historical Association/Revue de la Société historique du Canada*, 17(1): 55–78. DOI: [10.7202/016102ar](https://doi.org/10.7202/016102ar)

First Nations Information Governance Centre (FNIGC). 2020. First Nations principles of OCAP(R) [online]: Available from fnigc.ca/index.php.

Flynn K. 2020. Black Canadians and pandemics. Origins: Current Events in Historical Perspective [online]: Available from origins.osu.edu/connecting-history/black-canadians-influenza-covid-pandemics.

Geddes G. 2017. Medicine unbundled: a journey through the minefields. Heritage House Publishing, Victoria, British Columbia.

Government of Canada, Culture, History and Sport. 2020. Emergency Support Fund for Cultural, Heritage and Sport Organizations [online]: Available from canada.ca/en/canadian-heritage/services/funding/information-covid-19/emergency-support-fund.html.

Government of Canada, Panel on Research Ethics. 2018. Tri-council policy statement: ethical conduct for research involving humans—TCPS 2 [online]: Available from ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2018.html.

Haight M, Quan-Haase A, and Corbett BA. 2014. Revisiting the digital divide in Canada: the impact of demographic factors on access to the internet, level of online activity, and social networking site usage. *Information, Communication & Society*, 17(4): 503–519. DOI: [10.1080/1369118X.2014.891633](https://doi.org/10.1080/1369118X.2014.891633)

Harris V. 2002. The archival sliver: power, memory, and archives in South Africa. *Archival Science*, 2(1): 63–86. DOI: [10.1007/BF02435631](https://doi.org/10.1007/BF02435631)

International Council on Archives. 2020. COVID-19: The duty to document does not cease in a crisis, it becomes more essential [online]: Available from ica.org/en/covid-19-the-duty-to-document-does-not-cease-in-a-crisis-it-becomes-more-essential.

Inuit Tapiriit Kanatami. 2018. National Inuit strategy on research [online]: Available from itk.ca/wp-content/uploads/2018/04/ITK_NISR-Report_English_low_res.pdf.

Jones EW. 2007. Influenza 1918: disease, death, and struggle in Winnipeg. University of Toronto Press, Toronto, Ontario.

Kastrenakes J. 2020. Zoom saw a huge increase in subscribers—and revenue—thanks to the pandemic. *The Verge* [online]: Available from theverge.com/2020/6/2/21277006/zoom-q1-2021-earnings-coronavirus-pandemic-work-from-home.

Library and Archives Canada (LAC). 2015. Quarterly financial report for the quarter ended December 31, 2012. Library and Archives Canada [online]: Available from bac-lac.gc.ca/eng/about-us/quarterly-financial-report/Pages/qfr-december-2012.aspx.

Library and Archives Canada (LAC). 2019a. Indigenous heritage action plan. Library and Archives Canada [online]: Available from bac-lac.gc.ca/eng/discover/aboriginal-heritage/initiatives/Pages/actionplan.aspx.

Library and Archives Canada (LAC). 2019b. Library and Archives Canada launches funding and services to help preserve Indigenous culture and language recordings. Government of Canada [online]: Available from canada.ca/en/library-archives/news/2019/04/library-and-archives-canada-launches-funding-and-services-to-help-preserve-indigenous-culture-and-language-recordings.html.

Library and Archives Canada (LAC). 2020a. Annual Report 2019–2020 [online]: Available from bac-lac.gc.ca/eng/about-us/annual-reports/annual-report-2019-2020/Pages/Annual-Report-2019%E2%80%932020.aspx#tab10.

Library and Archives Canada (LAC). 2020b. Documentary heritage communities program. Library and Archives Canada [online]: Available from bac-lac.gc.ca/eng/services/documentary-heritage-communities-program/Pages/dhcp.aspx.

Lin J, Milligan I, Oard DW, Ruest N, and Shilton K. 2020. We could, but should we?: ethical considerations for providing access to GeoCities and other historical digital collections. In CHIIR '20: Proceedings of the 2020 Conference on Human Information Interaction and Retrieval. ACM, New York, New York. pp. 135–144 [online]: Available from dl.acm.org/doi/abs/10.1145/3343413.3377980.

Lomborg S. 2018. Ethical considerations for web archives and web history research. In SAGE handbook of web history. Edited by N Brügger and I Milligan. SAGE, London, UK. pp. 99–111.

Lux MK. 2016. Separate beds: a history of Indian hospitals in Canada, 1920s–1980s. University of Toronto Press, Toronto, Ontario.

Mawdsley SE. 2019. Borders and blood fractions: gamma globulin and Canada's fight against polio, 1950–55. Canadian Bulletin of Medical History, 36: 444–468. PMID: [31518178](https://pubmed.ncbi.nlm.nih.gov/31518178/) DOI: [10.3138/cbmh.365-052019](https://doi.org/10.3138/cbmh.365-052019)

McCallum MJL. 2017. Laws, codes, and informal practices: building ethical procedures for historical research with Indigenous medical records. In Sources and methods in Indigenous studies. Edited by C Andersen and JM O'Brien. Routledge, New York, New York. pp. 274–285.

McCallum MJL, and Perry A. 2018. Structures of indifference: an Indigenous life and death in a Canadian City. University of Manitoba Press, Winnipeg, Manitoba.

Millar L. 1998. Discharging our debt: the evolution of the total archives concept in English Canada. Archivaria, 46(Fall): 103–146.

Milligan I. 2019. History in the age of abundance?: how the web is transforming historical research. McGill-Queen's University Press, Kingston, Ontario.

Momryk M. 2001. "National significance": the evolution and development of acquisition strategies in the Manuscript Division, National Archives of Canada. Archivaria, 52: 151–174.

Muir C. 2012. Library and Archives Canada reality in 2012. Paper presented at the Annual Meeting of the Association of Canadian Archivists, Whitehorse, Yukon, 8 June 2012 [online]: Available from bac-lac.gc.ca/eng/news/speeches/Pages/8-june-whitehorse.aspx.

Pettigrew E. 1983. *The silent enemy: Canada and the deadly flu of 1918*. Western Producer Prairie Books, Saskatoon, Saskatchewan.

Rothenberg J. 1999. *Ensuring the longevity of digital information*. Revised edition. CLIR, Arlington, Virginia [online]: Available from clir.org/wp-content/uploads/sites/6/ensuring.pdf.

Roy Rosenzweig Center for History and New Media. 2005–2020. Collecting and preserving the stories of Katrina and Rita [online]: Available from hurricanearchive.org/.

Roy Rosenzweig Center for History and New Media and American Social History Project/Center for Media and Learning. 2002–2020. The September 11 Digital Archive [online]: Available from 911digitalarchive.org/.

Saaman E. 2020. Archiving by design. Nationaal Archief [online]: Available from nationaalarchief.nl/en/archive/knowledge-base/archiving-by-design.

Schwartz JM, and Cook T. 2002. Archives, records, and power: the making of modern memory. *Archival Science*, 2: 1–19. DOI: [10.1007/BF02435628](https://doi.org/10.1007/BF02435628)

Smith WI. 1972. Introduction. In *Archives: mirror of Canada past*. University of Toronto Press, Toronto, Ontario. pp. 2–25.

Social Sciences and Humanities Research Council (SSHRC). 2016. Research data archiving policy [online]: Available from sshrcc-crsh.gc.ca/about-au_sujet/policies-politiques/statements-enonces/edata-donnees_electroniques-eng.aspx.

Society of American Archivists. 2005–2020. fonds. Dictionary of Archives Terminology [online]: Available from dictionary.archivists.org/entry/fonds.html.

Steering Committee on Canada's Archives [2016]. n.d. Canada's archives: a new blueprint [online]: Available from archives2026.files.wordpress.com/2017/05/en_canadas-archives.pdf.

Sweeney S. 2010. Lady sings the blues: the public funding of archives, libraries, and museums in Canada. In *Better off forgetting? Essays on archives, public policy, and collective memory*. 1st edition. Edited by C Avery and M Holmlund. University of Toronto Press, Toronto, Ontario. pp. 17–36.

Symons THB. 1975. *To know ourselves: the report of the commission on Canadian studies*. Association of Universities and Colleges of Canada, Ottawa, Ontario.

The Expert Panel on Memory Institutions and the Digital Revolution. 2015. *Leading in the digital world: opportunities for Canada's memory institutions*. Project report. Council of Canadian Academies, Ottawa, Ontario, Canada.

The Royal Society of Canada (RSC) Expert Panel. 2014. *The future now: Canada's libraries, archives, and public memory*. The Royal Society of Canada, Ottawa, Ontario.

UNESCO. 2015. Recommendation concerning the preservation of, and access to, documentary heritage including in digital form [online]: Available from portal.unesco.org/en/ev.php-URL_ID=49358&URL_DO=DO_TOPIC&URL_SECTION=201.html.

UNESCO. 2020. Turning the threat of COVID-19 into an opportunity for greater support to documentary heritage [online]: Available from en.unesco.org/news/turning-threat-covid-19-opportunity-greater-support-documentary-heritage.

University of Manitoba Archives & Special Collections. 2020. Ukrainian National Home Association fonds [online]: Available from umlaarchives.lib.umanitoba.ca/ukrainian-national-home-association-of-winnipeg-manitoba-fonds.

University of Ottawa Library. 2020. COVID-19 telling her stories [online]: Available from biblio.uottawa.ca/omeka2/her-stories-covid-19/ (English); biblio.uottawa.ca/omeka2/elle-histoires-covid-19/ (français).

University of Saskatchewan Archives and Special Collections. 2020. Documenting the Saskatchewan COVID-19 experience [online]: Available from covid19archive.usask.ca/.

Vielfaure N. 2015. Medical records redefined: the value of the archival record in medical research. M.A. thesis, University of Manitoba [online]: Available from mspace.lib.umanitoba.ca/xmlui/handle/1993/30727.

Wallace I. 2013. Komagata Maru revisited: "Hindus," hookworm, and the guise of public health protection. *BC Studies*, 178: 33–50.

Watercutter A. 2020. Doomscrolling is slowly eroding your mental health. *Wired*, 25 June [online]: Available from [wired.com/story/stop-doomscrolling/?utm_source=onsite-share&utm_medium=email&utm_campaign=onsite-share&utm_brand=wired](https://www.wired.com/story/stop-doomscrolling/?utm_source=onsite-share&utm_medium=email&utm_campaign=onsite-share&utm_brand=wired).

Western University Archives and Special Collections. 2020. Canadian Tire heritage collection [online]: Available from lib.uwo.ca/archives/findingarchivalmaterial.html.

X A, Campbell T, and Stevens M. 2010. Love and lubrication in the archives, or rukus!: a black queer archive for the United Kingdom. *Archivaria*, 68: 271–294 [online]: Available from [archivaria.ca/index.php/archivaria/article/view/13240](https://www.archivaria.ca/index.php/archivaria/article/view/13240).

Zeheter M. 2015. *Epidemics, empire, and environments: cholera in madras and Quebec City, 1818–1910*. University of Pittsburgh Press, Pittsburgh, Pennsylvania.

Zinn H. 1977. Secrecy, archives, and the public interest. *The Midwestern Archivist*, 2: 14–26.

Appendix 1

Ongoing COVID-19 community engagement and partnerships

About · 20/20 Distance: A COVID-19 Digital Archive. 2020distance.omeka.net/

Archive-It—COVID-19 Web Collection. archive-it.org/collections/13662

COVID-19 Collection | Ontario Jewish Archives. ontariojewisharchives.org/Programs/Current-Projects/COVID-19-Collection

COVID-19 Documentation Project | Ontario Jewish Archives. ontariojewisharchives.org/Programs/COVID-19-Documentation-Project

COVID-19 Collection—The City of Red Deer. reddeer.ca/about-red-deer/history/archives/covid-19-collection/

Jewish Museum & Archives of British Columbia. jewishmuseum.ca/

Jewish Museum & Archives of British Columbia. JMABC Covid-19 Community Collection, 16 April 2020. jewishmuseum.ca/jmabc-covid-19-community-collection/

The Queerantime Project—Call for Submissions. archives.ca/newsfeed/the-queerantime-project-call-for-submissions/

Ryerson University. How COVID-19 Impacts Indigenous Communities. ryerson.ca/news-events/news/2020/05/how-covid-19-impacts-indigenous-communities/

University-based projects

Institutional Records, Athabasca University. COVID-19 Memory Archive Project. archives.athabascau.ca/covid-19-memory-project/index.php

Home · Documenting COVID-19 in Niagara · Brock University Library. exhibits.library.brocku.ca/s/COVID-Niagara/page/home

Items · Documenting COVID-19 in Niagara · Brock University Library. [exhibits.library.brocku.ca/s/COVID-Niagara/item#?c=&m=&s=&cv=.](https://exhibits.library.brocku.ca/s/COVID-Niagara/item#?c=&m=&s=&cv=)

Carleton COVID-19 Archival Collection—Corporate Records and Archives. carleton.ca/records/carleton-covid-19-archival-collection/

Digital Preservation Program and Covid-19 Web Collection. (Concordia) concordia.ca/content/concordia/en/offices/archives/historical-archives/digital-preservation-initiative-and-covid-19-web-collection.html

COVID-19 Pandemic Collections—Lakehead University Archives. archives.lakeheadu.ca/index.php/pandemic

Submit Digital Material · Western Libraries. verne.lib.uwo.ca/s/covid19/page/submission

Welcome · Western Libraries. verne.lib.uwo.ca/s/covid19/page/welcome

Telling Her-Stories in Canada: Documenting COVID-19 in Your Voice. biblio.uottawa.ca/omeka2/her-stories-covid-19/

COVID-19 Collecting Community Experience Project | University of Toronto Archives & Records Management Services (UTARMS). utarms.library.utoronto.ca/covid-19

Documenting COVID-19 Related Work on Campus | University of Toronto Archives & Records Management Services (UTARMS). utarms.library.utoronto.ca/covid-19/documenting-covid-19-work-on-campus

Pandemics past

Current Exhibits. chilliwackmuseum.ca/exhibitions/current-exhibits/

Canada's Last Pandemic Wasn't 1918. It Started in 1982. archives.ca/newsfeed/canadas-last-pandemic-wasnt-1918-it-started-in-1982/

Galt Museum & Archives. Pandemic at Home: The 1918–1919 Flu. galtmuseum.com/exhibit/pandemic-at-home

Ryerson University. From SARS to COVID-19: Putting the Spotlight on Anti-Asian Racism. ryerson.ca/news-events/news/2020/05/from-sars-to-covid-19-putting-the-spotlight-on-anti-asian-racism/

Libraries and museums

CAMH. COVID-19 Updates. camh.ca/en/camh-news-and-stories/novel-coronavirus-update

HPL: Local History & Archives | Love Your City Share Your Stories. hamiltonstories.ca/hpl-local-history-archives (Hamilton Public Library)

Thunder Bay Museum. COVID-19 Pandemic Historical Documentation Project. thunderbaymuseum.com/artifacts-archives/covid-19-stories/

Dartmouth Heritage Museum. Make COVID-19 History, 24 March 2020. dartmouthheritagemuseum.ns.ca/make-covid-19-history/

NBM-MNB. Pandemic Stories, 20 August 2020. nbm-mnb.ca/pandemic-stories/ (New Brunswick)

Submit Your COVID-19 Stories | Love Your City Share Your Stories. hamiltonstories.ca/covid19-submissions

CMHR. Share Your Story. humanrights.ca/stories/share-your-story

Collecting Community Responses to the COVID-19 Pandemic—Archives. simcoe.ca/Archives/Pages/Collecting_Community_Responses_to_COVID-19.aspx

Collecting Stories of COVID—At The Museum. museum.simcoe.ca/Pages/Collecting-Stories-of-COVID.aspx

In addition to these shared URLs, a review of Canadian memory institutions revealed several other projects that are currently being undertaken to document COVID-19:

Royal BC Museum and Archives: royalbcmuseum.bc.ca/tell-us-your-covid-19-story

St. Mary's University: communityconservation.net/wp-content/uploads/2020/12/Nova-Scotian-Communities-and-COVID-19-2020.pdf

Prince Edward Island Public Archives and Records Office: princeedwardisland.ca/en/information/education-and-lifelong-learning/public-archives-covid-19-project

University of Manitoba: archive-it.org/collections/13745

University of Ottawa: biblio.uottawa.ca/omeka2/her-stories-covid-19/

University of Toronto Archives & Records Management Services: utarms.library.utoronto.ca/covid-19

University of Waterloo: uwaterloo.ca/library/news/archiving-covid-19-experiences

University of Winnipeg: archive-it.org/collections/14088

Wellington County Museum & Archives: wellington.ca/en/discover/MUS-donatetoorcollections.aspx

Note that Library and Archives Canada in concert with several partners are currently crawling targeted websites in Canada for information on COVID-19.