NLCHI Mortality System 2021 v.1.0 Master Methodology October 2022



This page is blank.

Copyright Notice

This document is copyright protected by the Newfoundland and Labrador Centre for Health Information

Reproduction, in its original form, is permitted for background use for private study, educational instruction and research provided appropriate credit is given to the Centre for Health Information. Citation in editorial copy, for newsprint, radio and television is permitted. The material may not be reproduced for commercial use or profit, promotion, resale, or publication in whole or in part without written permission from the Centre for Health Information.

Newfoundland and Labrador Centre for Health Information 70 O'Leary Avenue St. John's NL, A1B 2C7

Phone: 709-752-6000 www.nlchi.nl.ca

Mortality Master Methodology Document Document Control Record

Version	Author	Date	Change(s) Made
2011 v.1.0	Rosalie Haire and	March 30, 2012	Annual Review and Updates
	Michele Bishop		Add: Storage and Retrieval
			Updates: Changes are minor e.g.,
			grammar.
			Deletion: No sections or significant
			text were deleted.
2012 v.1.0	Michele Bishop	June 12, 2013	Annual Review
			Added: Item 4.2: Data Quality
			Results Table
			Updates:
			Data Dictionary
			Appendix 6 – revised/updated
			Deletion:
			No sections or significant text
			were deleted
2013 V.1.0	Rosalie Haire	March 22, 2014	Annual Updates
2016 V.1.0	Beatrice Pittman	August 14, 2017	Annual Updates
2017 V.1.0	Trevor Greeley	October 1, 2018	Annual Revision and
			Normalization
			Added the results of the
			incomplete data fields (item non-
			response)
2020 V.1.0	Trevor Greeley and	January 11, 2021	Annual Revision (2020)
	Kaylah Mercer		
2021 V.1.0	Kaylah Mercer/Kerry	October 12, 2022	Annual Revision (2021)
	Critch		

Table of Contents

1	Mortality System1
	1.1 Introduction1
	1.2 Description of Dataset1
	1.3 Purpose of Dataset2
	1.4 Population Reference Coverage2
	1.5 Reporting Period2
	1.6 Years Available2
	1.7 Live Birth/Mortality Advisory Committee2
2	Data Source(s)3
	2.1 Origin of Data3
	2.2 Flow of Data
	2.3 Data Collection and Processing Timelines4
3	Data Dictionary/Elements4
4	Data Quality Processes4
	4.1 Edit and Correction Process4
	4.2 Data Quality Results5
	4.3 Maintenance Process
5	Uses of Data6
6	Comparisons to Other Holdings7
	6.1 NLCHI Holdings
	6.2 Other Holdings7
7	Changes to Dataset
	7.1 Methodological/Revision History7
	7.2 Other Significant Changes
	7.3 Reference Materials
8	Data Quality Limitations
	8.1 Contributors Impact on Data Quality8
9	Access
	9.1 Access to Dataset
	9.2 Storage/Retrieval
	9.3 Privacy and Confidentiality Responsibilities

9.4 Authority to Access	10
9.5 Privileges Permitted for Each Type of User	10
9.6 Audit Trail	10
10. De-identification Process	10
11. Education	10
Appendix 1: Live Birth/Mortality Advisory Committee Terms of Reference	11
Appendix 2: NLCHI Mortality System Data Dictionary	13
Appendix 3: NLCHI Mortality Edits	20
Appendix 4: 2021 Form	22
Appendix 5: Dataset Naming Convention	23
Appendix 6: Active Fields for 2021 De-identified Mortality File	26
Appendix 7: Glossary	28

1. Mortality System

1.1 Introduction

This internal document is considered the primary reference for Centre staff working with the NLCHI Mortality System. It is intended to provide staff with information related to the collection, processing, storage, use and disclosure of information contained within this key provincial health information system.

The contents of this document provide detailed guidance for staff in the day-to-day data management tasks of the NLCHI Mortality System, fulfilling the role of a procedure manual.

This document is reviewed annually and revised as needed to ensure it remains current and useful. Feedback from readers is welcomed. Suggestions for future updates can be sent to:

Manager, Clinical and Administrative Standards Newfoundland and Labrador Centre for Health Information 70 O'Leary Avenue St. John's, NL A1B 2C7 Phone 709 752-6000

1.2 Description of Dataset

This longitudinal dataset has 106 data elements that contain demographic, administrative and clinical data related to all deaths that occur in the province, both resident and non-resident. Some of these fields have become inactive over the years; for 2021, there are 92 active fields (see Appendix 6 for field list).

The Registration of Death form contains multiple sections. Responsibility for completion of the sections varies as noted in the table below:

Section	Responsibility for Completion
Registration	Vital Statistics
Information on Deceased	Health Care Professional/Funeral Home
Parental Information	Health Care Professional/Funeral Home
Informant	Health Care Professional/Funeral Home
Place of Death	Health Care Professional
Medical Certification	Health Care Professional
Disposition	Funeral Home
Office Use	Vital Statistics

Data in the NLCHI Mortality System are retained in a longitudinal file to facilitate efficient retrieval and creation of statistical data and research reports. The longitudinal file is updated annually to include the previous year's data.

1.3 Purpose of Dataset

This dataset is used primarily for analytical information regarding deaths which occur within the province of Newfoundland & Labrador and to provide aggregate statistical information. It is also used to cross reference other datasets for quality assurance and verification purposes.

The Data and Information Services (DaIS) department at the Newfoundland and Labrador Centre for Health Information (the Centre) provides mortality statistical information and reports to government agencies, health care managers, clinicians, etc. to assist in making evidence-based decisions.

1.4 Population Reference Coverage

Under the Vital Statistics Act (2009) all deaths occurring within the province of Newfoundland and Labrador must be reported to Vital Statistics, by the funeral home, within a 5 day period. All funeral homes in Newfoundland and Labrador submit Registration of Death (RD) forms to Vital Statistics in compliance with the Act.

1.5 Reporting Period

The reporting period for deaths is the calendar year, January 1st to December 31st.

1.6 Years Available

Data is available for the years 1991-2021.

1.7 Live Birth/Mortality Advisory Committee

The Live Birth/Mortality Systems Advisory Committee is comprised of internal and external stakeholders. This committee's mandate is to advise the Manager, Clinical Standards and Information on stakeholder information needs, data collection, and other relevant issues. One of this committee's responsibilities is to perform an annual review of the RD form and make recommendations regarding data collection requirements.

The Live Birth/Mortality Advisory Committee members are responsible for bringing forward issues or concerns from their respective organizations, providing key expertise, seeking input and circulating decisions made by the committee.

The following organizations, facilities or agencies have representatives on the Live Birth/Mortality Advisory Committee:

- Vital Statistics, Service NL
- Newfoundland and Labrador Provincial Perinatal Program
- Women's Health Program, Eastern Health
- Department of Health and Community Services
- Newfoundland and Labrador Funeral Services Association
- Newfoundland and Labrador Centre for Health Information
- Regional Health Authorities

Appendix 1 contains the terms of reference for the NLCHI Live Birth/Mortality Systems Advisory Committee.

2. Data Source(s)

2.1 Origin of Data

Data is collected at the funeral home responsible for the disposition of the remains.

Origin of death data can vary:

- If death occurs in a health care facility, the data originates from the facility.
- If the death is suspicious or undergoes an autopsy the data originates from a medical examiner.
- If an expected death occurs at home, the data originates from the last attending health care provider.

No matter where the data originates, the funeral home director is responsible for obtaining the Registration of Death (RD) form prior to accepting the remains for disposal.

2.2 Flow of Data

The RD forms are initiated by the medical professional responsible for certifying the death. When remains are accepted by the funeral home, staff obtain both the Vital Statistics and the Centre's copy of the form, funeral home staff complete demographic and disposition data, and forward both completed copies to Vital Statistics.

Vital Statistics adds administrative data before forwarding a copy to the Centre's DalS department.

Prior to 2020, RD forms were received from Vital Statistics, via courier, on a weekly basis. Accompanying the forms was a Records Transfer Sheet, on which Vital Statistics indicated which type of form was enclosed (Live Birth, Registration of Death, Registration of Stillbirth, Revisions, etc.) as well as the registration numbers. Upon receipt of the documents, the HIM analyst or Data Entry Operator checked each batch of forms to ensure all registration numbers recorded on the transfer sheet had been received. Once verified, the transfer sheet was dated and signed by the Health Information Management (HIM) analyst and emailed to Vital Statistics as confirmation of receipt of the documents. Beginning in 2020, the RD forms are scanned monthly to the Centre via Secure File Transfer. The Data Entry Operator ensures all forms are scanned and follows up with Vital Statistics for missing forms.

Beginning in 2017, demographic and administrative data elements that are captured electronically at Vital Statistics from the paper forms are transmitted to the Centre via the Office of the Chief Information Officer (OCIO), into the Centre's Cloverleaf interface. The files are received business-daily and are stored in NIMS. Once received, the Data Entry Operator loads the files into the Centre's Vital Events 3M HDM platform. Once loaded, the data is verified against the paper forms, and any missing or incorrect information is updated.

The Centre's Health Information Management (HIM) analyst assigns the medical codes. As of January 1, 2003, medical codes are based upon the ICD-10-CA classifications; prior to 2003, ICD-9 classification system was used. The data entry operator completes demographic coding and data entry. The demographic coding includes Standard Geographical Code (SGC) and institution code for location of death.

An edit and correction process is completed by DaIS staff after all known RD forms have been received, coded and entered into the database. Once closed, the file is appended to the longitudinal dataset and is ready for use by stakeholders.

2.3 Data Collection and Processing Timelines

- Daily: funeral homes are legally required to report deaths to Vital Statistics within 5 days after death.
- Weekly: Vital Statistics completes the administrative section of the form and forwards a copy to the Centre.
- Monthly: Forms requiring revisions and/or coding queries are completed.
- Annually: all RD forms are received at the Centre by mid-April for the previous calendar year.
- April 30, YYYY: the annual cycle of demographic and medical coding, data entry and corrections for the previous data year is scheduled for completion.
- May 31, YYYY: the mortality longitudinal file is scheduled to be uploaded with the previous calendar edited year data.

3. Data Dictionary/Elements

Data elements on the RD form are those identified by the Live Birth/Mortality Systems Advisory Committee as required data by one or more stakeholders. Of the total elements on the RD form, a select number of fields is entered into the system. The Mortality System Data Dictionary (Appendix 2) contains the list of data elements, element details and the reference year.

NOTE: Estimated Date of Death Data Element: When a range of dates is documented, the last date listed in the range is entered as the estimated date of death.

4. Data Quality Processes

4.1 Edit and Correction Process

The NLCHI Mortality System contains a series of edit checks which have been designed to automatically flag data elements that are incomplete, illegible or contain incorrect data.

All NLCHI Mortality edits are conducted internally and are performed in mid-April. The edit process consists of logic and classification edits. These include edits such as: date of death must be greater than the date of birth, postal code edits, and sorting files within the applicable

regional health authority. After all edits and corrections are completed a validation of MCP numbers is performed. Appendix 3 lists the edits performed on mortality data.

The data extraction process is scheduled to be completed by May 31, YYYY for the previous year's data. If Vital Statistics indicates that all deaths have not been reported in a timely manner, there may be a delay in meeting the May 31, YYYY target.

4.2 Data Quality Results

The table below displays the annual results of data quality measures for the NLCHI Mortality database (based on total number of errors):

Results of Data Quality Measures for the NLCHI Mortality System									
Year	Total #	Total #	Total #	Total #	Total #	Outstanding	Number of		
	Records	Errors	Corrections	Corrections	Outstanding	Error Rate	Records with		
	Edited**	Identified	Using	Using External	Errors After		one or more		
			Internal	Resources***	Corrections		outstanding		
			Resources				errors		
2010	4481	601	372	N/A	229	38%	N/A****		
2011	4521	308	238	N/A	70	22%	70		
2012	4623	224	198	N/A	26	11%	26		
2013	4859	205	152	N/A	53	26%	53		
2014	4987	260	218	N/A	42	16%	42		
2015	5224	438	402	N/A	36	8%	36		
2016	5003	420	389	N/A	31	7%	31		
2017	5148	127	127	N/A	0	0%	0		
2018	5246	96	96	N/A	0	0%	0		
2019	5266	42	42	N/A	0	0%	0		
2020*	5421	1210	1209	N/A	1	0.02%	1		
2021	5854	335	334	N/A	1	0.02%	1		

*In 2020, additional errors were noted with incorrect facility numbers being entered.

**The total number of records edited may not always reflect the total number of records received each year due to late receipt of records after the file has been closed.

***Currently, edits to the Mortality database are performed on an internal basis only.

****Capture of the number of records containing errors began in 2011.

4.3 Maintenance Process

The Live Birth/Mortality Advisory Committee members are responsible for bringing forward issues or concerns from their respective organizations, providing key expertise, seeking input and circulating decisions made by the committee.

This is a dynamic dataset; therefore, users should be aware of past data element changes and the fact that changes are likely to occur in the future. Due to these ongoing changes data elements have been added, revised or classified as inactive. Data elements that are deemed inactive are no longer entered into the dataset. However, for historical purposes these data elements and their values remain in the dataset (for the applicable years).

Whenever it is discovered that Vital Statistics inadvertently omitted a form or a funeral home failed to report a death, these revisions are retrospectively added to the longitudinal file.

When corrections are required after the year-end file is closed, the revisions are made and the changes are documented, including the rationale for the changes. The revised dataset is updated following the NLCHI Dataset Naming Convention (see Appendix 5).

For example, in 2008 data entry screens were redesigned and standardized to assist with data quality on input; the date format validation as MM/DD/YYYY was implemented.

End users of mortality data may identify data quality issues. When an issue is reported to DaIS staff, corrective and/or preventative action is taken.

Process Schedule for Codi	ng, Keying, Editing and Im	porting of Vital Statis	stics Data	
Registration of Death				
Process	Position Responsible	Start Timeframe	Start Date	Completion Date
Medical Coding	HIM Analyst	Within 10 days		
		after receiving		
		from Vital		
		Statistics		
		Minimum Target		
		150 a week		
Social Coding	Data Entry Operator	Within 5 days		
		after receiving		
		from HIM Analyst		
		Minimum Toward		
		150 a week		
Keying	Data Entry Operator	Within 10 days	January to	End of Month
		after social coding	December	February to January
		Minimum Target		
		150 a week		
Edit Process	HIM Analyst/Data	Within 10 days	April	April
	Entry Operator	after keying		
		completed for		
		year		
MCP Verification and	Database Analyst	Within 15 days	May	May
Annual Database Import		after Edit Process		

5. Uses of Data

The Data and Information Services (DaIS) Department at the Centre provides mortality statistical information and reports to government agencies, health care managers, clinicians, etc. to assist in planning and evidence-based decision making. Stakeholders include the following organizations and agencies:

• Department of Health and Community Services

- Department of Education
- Newfoundland and Labrador Statistical Agency–Community Accounts
- Regional Health Authorities
- Researchers
- Vital Statistics

Data may be disclosed to researchers in accordance with the Centre's security policies upon request and approval by the Secondary Uses Committee.

The Centre also uses this data to cross reference with other datasets for quality assurance and verification purposes.

6. Comparisons to Other Holdings

6.1 NLCHI Holdings

Comparability across years in the Mortality System and with other Centre datasets is possible using variables such as the deceased's Health Care Number (HCN).

6.2 Other Holdings

Comparison between Statistics Canada and Vital Statistics mortality databases is possible using the death registration number.

7. Changes to Dataset

7.1 Methodological/Revision History

There have been no significant changes to the dataset structure since its inception in 1991.

From 1991 to 1999 Vital Statistics began their registration numbers with 1001. Since 2000 the numbering system was changed to begin with number 1.

Prior to 1990 Newfoundland and Labrador was assigned code 12 by Statistics Canada, in June 1990 the code was changed to 10.

In 2003, the RD form underwent changes to the format and data elements collected. Documentation related to changes and general information on the Mortality System prior to 2003 is minimal.

The following versions of Statistics Canada SGC codes were used for social coding:

1991 to 2007 SGC version 1991 was used. 2007 to 2009 SGC version 2001 was used. 2007 to 2011 SGC version 2006 was used. 2012 to 2016 SGC version 2011 was used. 2017 to 2021 SGC version 2016 was used. Appendix 6 lists all active fields for the de-identified data file.

7.2 Other Significant Changes

In 2008, the responsibility of the Mortality System was transferred from the Centre's R&E Department to the Data Quality and Standards Department. Both departments merged to become HAES in 2017. After the Shared Services Organization was created in 2019, the department became, and is now known as, Data and Information Services (DaIS).

In 2017, the process of data entering information solely from the paper forms transitioned to a new process where electronic information in transferred from Vital Statistics via the OCIO to the Centre. The information is then loaded into the Centre's Vital Events 3M HDM platform, where missing or incorrect information is updated, and medical coding is completed.

Beginning in 2020, during the Global Coronavirus Pandemic, the paper forms were scanned, and transferred to NLCHI via a Secure File Transfer Process; and paper copies were no longer received. The original paper copies are held at Vital Statistics as per their scheduled retention period.

7.3 Reference Materials

Reference materials available from the DaIS include:

- Copy of RD form(s), 1989-2021.
- The Guide to the Completion of Registration of Death and Registration of Stillbirth. This document is produced by Vital Statistics as a reference document for those responsible for completing the registration form.
- Mortality System edit information.

8. Data Quality Limitations

8.1 Contributors Impact on Data Quality

Historically, the only reference source available to assist with quality assurance activities was the Vital Statistics paper form, which is also the source of origin. Since 2009, DalS staff has been authorized to access the provincial Client Registry and the MCP Beneficiary Registration Database to cross reference key administrative and demographic data elements to improve data quality.

Rarely will a funeral home refuse to comply with submission of RD forms; however, it is not uncommon for a late response thus delaying the completion timeframe of March 31st.

Due to significant investments in quality assurance processes in recent years, the file years 2003-current are more accurate than those of previous years.

9. Access

9.1 Access to Dataset

Internally, access by Centre staff to this database is granted when DaIS directors or managers grant permission on an individual basis, based on job responsibilities. Authorized users will be required to use a unique username and password in order to access the file, which is housed in the NLCHI Information Management Solution (NIMS) secure environment.

Positions that have access to the dataset:

- Manager, Clinical and Administrative Standards
- Health Information Management Analyst
- Data Entry Operator
- Database Analyst
- Manager, Analytics
- Data Management Consultant
- Epidemiologists
- Research/Business Analysts

9.2 Storage/Retrieval

Source documents used to create the dataset are kept for 5 years and then securely shredded.

The electronic dataset is maintained indefinitely and is stored on a secure server at the Centre.

Only the Infrastructure Department's staff has access to the backup files. The Centre uses the Grandfather-Father-Son (GFS) method to backup data. The backups are organized into Daily, Weekly, and Monthly files. The Daily tapes are retained for 1 week. Weekly tapes are retained for 5 weeks, and Monthly tapes are retained for 1 year. The Centre also performs an annual backup with no specified retention period. The annual tapes are archived and are not reused.

The Mortality System data has a standardized naming convention to provide easy identification and prompt retrieval of data. The naming convention rules can be found in Appendix 5.

9.3 Privacy and Confidentiality Responsibilities

The Centre's Secondary Uses Committee reviews applications for the use of record level death data for research and data quality purposes. A strong component of this committee is adherence to privacy and confidentiality legislation.

It is the responsibility of all users of death data to ensure complete confidentiality of the information. It is expected that all users adhere to polices outlined by the Centre.

Researchers will be granted access to de-identified data only unless their research specifically requires identifiable data.

9.4 Authority to Access

Access to the mortality dataset is by authorization from the DaIS manager/directors.

9.5 Privileges Permitted for Each Type of User

Authorized users will be allowed privileges as required to perform their duties as authorized by their director/manager.

DalS, Database Analyst	unlimited access
Manager CAS	unlimited access to the 3M system
DaIS HIM Analyst	unlimited access to the 3M system
DalS, Data Entry Operator	unlimited access to the 3M system
DalS Analytics Staff	read only access to the longitudinal file

9.6 Audit Trail

An audit trial is maintained on NLCHI's Mortality System for DaIS staff with access; a record of each user's access and the additions, revisions or deletions performed are logged. Additional audit requirements for all datasets managed in NIMS are outlined in the *Audit Plan NIMS-DL* guidance document.

10. De-identification Process

The mortality data is de-identified post editing before it is made available for use. Access to identifiable information is only provided when absolutely necessary.

Once the data is ready for use, the Database Analyst or designate performs the de-identification process. Each record with a valid Health Care Number (HCN) will have a unique de-identification identifier (DID) assigned and the file will be stripped of identifiable data, such as name and HCN. In the event that re-identification of a record is required, the Database Analyst or designate will be responsible to re-identify records (only possible to provide HCN). In some cases, records may not be re-identifiable e.g., the original data did not have a valid HCN so they are assigned a generic DID.

11. Education

When the need for education related to the Mortality dataset is identified the Centre will develop and deliver appropriate education. Where applicable, this will be done in conjunction with Vital Statistics.

Appendix 1: Live Birth/Mortality Advisory Committee Terms of Reference

PURPOSE

The purpose of this committee is to ensure data is collected accurately and shared appropriately to meet federal and provincial Vital Statistics information needs; to support the Live Birth Notification, Death Registration and Stillbirth Registration for health service delivery; and to support the NLCHI Live Birth, Mortality and Stillbirth systems.

OBJECTIVES

- Perform an annual review of Live Birth Notification, Stillbirth and Death Registration forms and make recommendations regarding data collection requirements
- Revise form format as required to support accurate and efficient data collection and distribution.
- Collaborate and assist in the development and maintenance of Reference Manuals for each type of form published by Vital Statistics (death and stillbirth) and the Centre (live birth).
- Work collaboratively to ensure the requirements for Live Birth, Stillbirth and Death information for each member's organization are met.
- Ensure data is collected and provided to stakeholders in accordance with current legislation and Vital Statistics and the Centre policies regarding privacy and security of health information are met.

MEMBERSHIP

Membership is comprised of representatives from the primary stakeholders of this information: Vital Statistics Division (Government of Newfoundland and Labrador, Service NL, Department of Health and Community Services, Perinatal Program NL, Regional Health Authorities, Funeral Directors Association, NLCHI and others.

- Manager, Clinical and Administrative Standards, NLCHI, Chair
- Registrar, Vital Statistics Division
- Deputy Registrar, Vital Statistics Division
- Divisional Manager, Children's and Women's Health, Eastern Health
- Clinical Educator, Women's' Health Centre, Eastern Health
- Representative, Department of Health and Community Services
- President, Newfoundland and Labrador Funeral Services Association (ad hoc)
- Epidemiologist, NLCHI
- Health Records Analyst, NLCHI

Members may appoint a designate to attend a meeting on their behalf if they are unable to attend a meeting of the committee.

REPORTING

The committee members report to their respective director/manager or association.

MEETING FREQUENCY

Meetings are held approximately 7-10 times per year; monthly between March and September with additional meetings held at the call of the Chair. Action items may be circulated for review via e-mail. Meetings will take place in person or virtually (e.g., Microsoft Teams).

MINUTES

Minutes are recorded by the Chair and distributed to all members. Members are responsible for sharing the minutes and related documents with others within their respective organizations.

REVISION HISTORY

Revised: February 9, 2009 Approved: June 9, 2009

Revised: April 8, 2014 Approved June 10, 2014

Revised: May 24, 2016 Approved: May 24, 2016

Revised: September 21, 2018 Approved: September, 2018

Revised: January 11, 2021 Approved: January 11, 2021

Appendix 2: NLCHI Mortality System Data Dictionary

Note: Items in grey are variables which are no longer collected and/or valid. Variable names preceded by an asterisk () are identifiable fields and have been removed from the de-identified dataset.

Variable Name	Label	Value/Example	Туре	Length	Applicable Year(s)	Comments
W_PAT_ID	DW Unique Patient identifier		Numeric	8	1991-2021	Used in DW for linkage of patient records
DID_KEY	NIMS Unique Patient Identifier		Numeric	8	1991-2021	NIMS De- identification Key used for data linkage
regisnum	Registration Number	Year-Province - Accession Number YYYY/NL/12345 10 = Newfoundland and Labrador	Numeric	8	1991-2021	
Year	Year of Death	Value: YYYY	Numeric	8	1991-2021	
Sex	Sex	1=Male 2=Female 98=Unknown 99=System Missing	Numeric	8	1991-2021	
*deadname	Name of Deceased (Surname, Given Names)	None	String	40	1991-2021	Removed from the DID file
*maiden_n	Maiden Name of Deceased, if applicable	None	String	35	1991-2021	Removed from the DID file
dob	Date of Birth (YYYY/MM/DD)	None	Date YYYY/MM/DD	8	1991-2021	
dob_derived	Date of Birth derived from validated MCP number (YYYY/MM/DD)	None	Date YYYY/MM/DD	8	1991-2021	
age_yrs	Age (Years)	None	Numeric	8	1991-2021	
age_yrs_derived	Age (Years) derived from derived Date of Birth	None	Numeric	8	1991-2021	
dod	Date of Death YYYY/MM/DD	None	Date	8	1991-2021	When a range of dates is documented, the last date listed in the range is entered as the estimated date of death.
est_days	Estimated Day of Death	None	Numeric	8	1991-2021	

Variable Name	Label	Value/Example	Туре	Length	Applicable Year(s)	Comments
est_mths	Estimated Month of Death	None	Numeric	8	1991-2021	
est_yrs	Estimated Year of Death	None	Numeric	8	1991-2021	
age_mths	Age (Months)	For deaths under 1 year of age	Numeric	8	1991-2021	
age_days	Age (Days)	For deaths under 1 year of age	Numeric	8	1991-2021	
age_hrs	Age (Hours)	For deaths under 24 hours	Numeric	8	1991-2021	
age_mins	Age (Minutes)	For deaths under 24 hours	Numeric	8	1991-2021	
time_dth	Time of Death For deaths less than 1 year of age	For deaths ≤ 1 year of age (24 hr clock)	Numeric	8	2008-2021	To only be used for deaths ≤ 1 year of age
marsta	Current Legal Marital Status of Deceased	1=Never Married 2=Legally Married and not Separated 3=Legally Married but Separated 4=Divorced 5=Widowed 98=Unknown 99=System Missing	Numeric	8	2017-2021	
*mcp	HCN Number	None	String	12	1991-2021	This variable is kept in Master File, but not in the de-identified Longitudinal file.
*mcp_validated	Validated HCN Number	MCP # checked and verified by NLCHI	Numeric	8	1991-2021	New in 2009, but all MCP numbers in Longitudinal File validated also. Removed from the DID file.
sgc_res	SGC for Usual Residence	7-digit sgc code	Numeric	8	1991-2021	New for 2009, but all MCP numbers in Longitudinal File validated also.
sgc	SGC – Derived	Truncated to 4-5 digits (e.g., 1001519 To 1519)	Numeric	8	1991-2021	

Variable Name	Label	Value/Example	Туре	Length	Applicable Year(s)	Comments
pcode	Postal Code	None	String	8	1993 2001-2021	
province	Deceased Province of Residence	NEWFOUNDLAND AND LABRADOR	String	26	2017-2021	
country	Deceased Country of Residence	CANADA	String	44	2017-2021	
town	Deceased Town of Residence	DEER LAKE	String	45	2017-2021	
hth_auth	Regional Health Authority	1=Eastern 2=Central 3=Western 4=Labrador-Grenfell 9=Out of Province 98=Unknown 99=System Missing	Numeric	8	1991-2021	Derived from sgc
comm_brd	Health & Community Services Board	1=St. John's 2=Eastern 3=Central 4=Western 5=Labrador 6=Grenfell 9=Out of Province 98=Unknown 99=System Missing	Numeric	8	1991-2016	Derived from sgc
inst_brd	Institutional Health Board	1=St. John's 2=Avalon 3=Central East 4=Central West 5=Grenfell 6=Labrador 7=Peninsulas 8=Western 9=Out of Province 98=Unknown 99=System Missing	Numeric	8	1991-2016	Derived from sgc
*momname	Mother's Maiden Surname & Given Names	None	String	35	1991-2006 2008 2013	Data partially available Removed from the DID file.
hospital	Hospital Code	3 digit provincially assigned facility number	Numeric	8	1991-2021	
facility	Hospital Name	Name associated with the provincially assigned number	String	35	1998-2002 2004-2021	Derived from Hospital Code
locality		1=Hospital 2=Private Home 3=Other Health Care Facility				

Variable Name	Label	Value/Example	Туре	Length	Applicable	Comments
	Locality of Death	4=Other 98 = Unknown	Numeric	8	Year(s) 2007-2021	
		99=System Missing				
location_other	Locality of Death Other, Specify	Free text	String	255	2007-2021	
Statscan_cause_d	Statistics Canada – Underlying Cause of Death		String	4	1993-2020	Field added through linkage with Statistics Canada's Death dataset. From 1991 to 1999, ICD-9 was used. From 2000 onwards, ICD- 10 is used. (StatCan uses ICD-10; NLCHI uses ICD-10- CA.)
chapter	Underlying Cause of Death ICD Chapter Number	1-20	Number	2	1996-2021	Provides the ICD chapter number associated with the Statistics Canada Underlying Cause of Death Code
chapter_desc	Underlying Cause of Death ICD Chapter Name	Example: Diseases of the Nervous System	String	78	1996-2021	Provides the ICD chapter name associated with the Statistics Canada Underlying Cause of Death Code
icd_a	Immediate Cause of Death (ICD code)	None	String	6	1991-2021	ICD-9 used in 1991-2002 ICD-10-CA used in 2003- 2012
icd_atxt	Immediate Cause of Death (Text)	None	String	78	2017-2021	
icd_b icd_c icd_d				_		ICD-9 used in 1991-2002
icd_e		None	String	6	1991-2021	

Variable Name	Label	Value/Example	Туре	Length	Applicable Year(s)	Comments
icd f	Antecedent Cause of				1001(0)	ICD-10-CA
icd_r	Death – Other Significant					used in 2003-
icd h	Condition)					2012
icd i	conditiony					2012
icd i						icd h to
icd k						icd m added
icd I						in 2017
icd m						-
icd btxt	Antecedent Cause of					
icd_ctxt	Death – Other Significant					
icd_dtxt	Condition (Text)					
icd_etxt		None	String	78	2017 -2021	
icd_ftxt			_			
icd_gtxt						
icd_htxt						
icd_itxt						
icd_jtxt						
icd_ktxt						
icd_ltxt						
icd_mtxt						
oth_con1	Condition-1 (ICD code)					ICD-9 used in
oth_con2	Condition-2 (ICD code)					1991-2002
oth_con3	Condition-3 (ICD code)					ICD-10-CA
oth_con4	Condition-4 (ICD code)	None	String	8	1997-2021	used in 2003-
oth_con5	Condition-5 (ICD code)					2012
oth_con6	Condition-6 (ICD code)					
oth_con7	Condition-7 (ICD code)					oth_con7-12
oth_con8	Condition-8 (ICD code)					added in
oth_con9	Condition-9 (ICD code)					2017
oth_con10	Condition-10 (ICD code)					
oth_con11	Condition-11 (ICD code)					
oth_con12	Condition-12 (ICD code)					
oth_con1txt	Condition-1(ICD text)					
oth_con2txt	Condition-2(ICD text)		<u>.</u>	70	2017 2021	
oth_con3txt	Condition-3(ICD text)	None	String	/8	2017-2021	
oth_con4txt	Condition-4(ICD text)					
oth constat	Condition S(ICD text)					
oth con7tyt	Condition-71/ICD text)					
oth constat	Condition-8(ICD text)					
oth con9tyt	Condition-9(ICD text)					
oth con10tyt	Condition-10/ICD text)					
oth con11txt	Condition-11(ICD text)					
oth con12txt	Condition-12(ICD text)					
		If deceased is a				
	Duration of Pregnancy	female, did the				
dur preg	(Weeks)	death occur:	Numeric	8	1991-2009	
		During Pregnancy				
dur preg davs	Duration of Pregnancy	U Within 42 days				
, 0 /*	(Days)	thereafter Or 🗆	Numeric	8	2007-2009	
		If deceased is a				
		female, did the				
		death occur:				

Variable Name	Label	Value/Example	Туре	Length	Applicable Year(s)	Comments
		between 43 days and 365 days thereafter.				
gest_weeks	Gestational Age in Weeks if newborn death due to Prematurity	Used for NB death due to prematurity	Numeric	8	1991-2005 2008-2021	
gest_days	Gestational Age in Days if newborn death due to Prematurity	Used for NB death due to prematurity	Numeric	8	1991-2005 2008-2021	
weight	Birth Weight (grams)	None	String	4	1991-2002	
medterm	Medical Termination of Pregnancy	1= Yes 2= No 98=Unknown 99=System Missing	Numeric	8	2008-2021	
death_dueto	Was this death due to	1=Natural Causes 2=Accident 3=Suicide 4=Homicide 5=Undetermined 97 = Other 98=Unknown 99=System Missing	Numeric	8	2003-2021	
death_duetospecify	Was this death due to(Other specified)	None	String	100	2007-2021	
autopsy	Autopsy	1=Yes 2=No 98=Unknown 99=System Missing	Numeric	8	1993-2021	
disposit	Disposition	1=Burial 2=Cremation 3=Other 98=Unknown 99=System Missing	Numeric	8	2003-2010	
disp_oth	Disposition (Other)	None	String	50	1993-2010	
medinjury	Maternal Injury	1 = Yes 2 = No 98=Unknown 99=System Missing	Numeric	8	1991-2021	
dec_female	Female Death	1 = During pregnancy 2 = Within 42 days of pregnancy 3 = Between 43 and 365 4 = Not pregnant within the last year	Numeric	8	1991-2021	

Variable Name	Label	Value/Example	Туре	Length	Applicable Year(s)	Comments
		98 = Unknown 99 = Unknown				
OOP_HCN	Out of Province Identifier	1 = OOP	Numeric	8	2017-2021	
comments	Comments	None	String	255	1991-2021	
DBA_comments	These are comments from the data base analyst and will be removed before making file available for use.	None	String	50	1991-2021	

Appendix 3: NLCHI Mortality Edits

Prior to the edit process, NLCHI staff will contact Vital Statistics to confirm receipt of all registrations for the year.

Note: Mortality edits are not sent back for correction, they are resolved using internal resources.

Edits have been designed for various data elements to flag potential incomplete, inaccurate or missing data. The following describes the current edits run against the values entered into specific data fields.

All edits are run in the 3M system, additional edits may be run SAS. Many of the edits listed below are completed during data entry. The edits below are run again in SAS to ensure none were missed by the 3M system.

MCP VALIDATION

The Database Analyst (DBA) performs this step prior to the start of the edit process in order to validate the MCP number of on each record. The MCP numbers in the database are linked with the MCP Master Key in order to confirm that the number is valid. Any erroneous records are investigated and corrected, wherever possible, to at least 95% accuracy. Any fields that have Health Care numbers (HCN) that do not meet the criteria are deleted so that the field is blank for those records. This would include records with out of province HCN. This process results in the creation of a new variable entitled: mcp_validated and is used in the remaining edit process to confirm data, and to derive and confirm additional data elements such as age at time of death, etc. If the health care number is not a valid MCP number (i.e., missing, out of province, etc.) the field 'mcp_validated' will be blank. In these instances, the age and date of birth for the deceased as originally data entered will be used.

BREAKDOWN OF VALIDATED MCP

This process is performed within the 3M system to verify the gender, date of birth (DOB), check digit and length of the validated MCP. All possible corrections are performed prior to completion of remaining edits.

1) CORRECT NUMBER OF RECORDS

This edit is performed once the entire years' worth of data has been received and entered.

a) Search for duplicate registration numbers by using the "identify duplicate cases" feature of SAS.

b) Syntax will search for missing registration numbers. Gaps in the sequential record numbers are identified by the creation of a new variable entitled: 'seq'. If there are records listed in this new variable, this indicates that there are missing registration numbers.

<u>Action Taken</u>: The Data Entry Operator will examine file, pull forms, and confirm correct information – records missed, or entered twice. The database will be updated appropriately.

2) SEARCH FOR MISSING VALUES

Each keyed field will be sorted ascending and descending to search for missing values. <u>Action Taken:</u> The Data Entry Operator will obtain missing information by pulling the files, or by checking the CR if applicable.

3) REGIONAL HEALTH AUTHORITIES

Syntax will be run to sort all records into the appropriate Regional Health Authority (RHA), by using the SGC to derive theses variables.

<u>Action Taken</u>: Following this process, the Data Entry Operator will sort to identify any missing data. Any fields that identify Out of Province SGC codes, or any which are Unknown, will be entered manually.

Once all edits are performed, the Database Analyst (DBA) will extract the file and merge it with the Mortality Longitudinal File.

Appendix 4: 2021 Form

nesilounda Labrado	Government of New Digital Government REGISTRAT	found land and Lab radior and Service NL, Vital Stati ION OF DEATH 2	stics Division 021	1. Registration Number	er 10 Department Use Only	
Privacy Holice Periodical Libraria amendother vita If you have anyon	ation contained on this form is calleded of event eccels, and provide extends or a question satural the calledion or use of th	nder theauthol typoff the Vital Statistics Act each notices for administrative, at at lation, is information, piesee contacts Vital Statist Ph. Dis 2 and 20 bits of the Vital Statist	1009, and will be used to executly, medical and law los Client Representative	register the death, update or rectionsement purposes, at the following locations	Wind Startisette Digital Generationentand S P.C. St. Johnfe, NL. Cannad T (2004)	Clivia lo Indice N R cx RPt A1R 43 7219 300
THIS IS A P	DRD MUST BE COMPLETED	AND FILED WITH THE REGIS	AND COMPLETE	ALLITEMS.		
2. Sumame		INFORMATION Al Given Name(a)	I ON DECEASE	D	4. Date of Dirth	
1.0		All Charachiners in high K differ	and then shows		MM DD Y	YY
					11-11-11	11
Age	Funder 1 year, months	days if under	26 hours hours_	minutes	_ 🛱 🕫 🖓	nknow
7. Health Car	Number 0. Charts	9 SIN	10. Dirthpi	lace (Town / Prov. / Cou	untry)	
11. Usual Hon	me Address (Frural give exact loca	ation e.g. steet name not P.O. Box)	CityTownProvince/C	ounity) SGC code	Postal Code	
12. Current La	egal Martal Status Marrieri Levally Marrie	d and Not Senarated Lense	Married but Seconds	nt Diversed		-
13. Emaried,	widowed, divorted or separated g	ive full name of spouse; including ma	den <u>aumame</u> if spour	ue is female.		
		PARENTAL	NFORMATION			
14. Sumame	and Given Name(s) of Fathen() the	r Paannt	15. Dirtiplace of Fat	her/Other Parent (Town	/ Prov. / Co untry)	
16. Maidan Sa	amame and Given Name(s) of Mot	her	17. Dirtiplace of Mo	ther (Town / Prov. / Cou	intry)	
		INFO	RMANT			
10. Name of I	norman		15. Relationship to D Spouse	Child Parent	Other (specify)	
20. Complete	Maling Addess	PLACE	DEDEATH	PostalCode	Telephone #	11
21.Locality of	f Death (Please select one only)					
22 House			Constrained of Second	77 nos (City, Municipality)	(Place)	
ALL PROPERTY C	r Health Cam Fadily Name	Hospital Code	23 Place of Occurre			
24. Date of De 27. a) Was need	er Health Cam Fadilly Name each MM DD YYY	Hospital Code MEDICAL CERTIFICATION 25. If Specific date of D b) Was newborn deth	See Instructio set Uninown, Estima If yes, requ	ns on Reverse ted Date 20. F B	Pro VF ANT up to 1 Year, record Time with due to premietarity, pieces at	r: NL d'Dead
24. Date of De 27. a) Was ne b a me of pregr 20. If decase during within	r Heath Cae Fadily Neme with NM DD YYY when death dia dict territorion With NM DD YYY anxy? at loss territorion With the set properties? Expensions reported of doast following the end of program	Hospibl Code MED (CALL CHERNIE) CALE Section 25, If Specific data of D b) Was needed data of D b) Was needed data b) Was needed data b) Was needed data b) Was needed data	23. Place of Occurre See Instruction add Unincern, Edmo If yes, require If yes, require	ns on Roverse tectost 20. F B othe amber 65 days pranty artigo ber bri he birby?	Pro WF ANT up to 1 Year, record Time sath due to prematurity, please at the weeks not pregnent within the last year uninceen if pegnent within the last	r: NL d Dead n , days styaat
24. Date of Dy 27. a) Was not b a mar- b a	r Heath Cae Fadily None with MM DD YYY when death da when death da is a ternate of the death occur: preparacy? Eao, requires report 142 death locart; preparacy? Eao, requires report 142 death locart; Death:	Plospibil Code VIEID (CALL CHERN THE CALL CHERN THE CALL CHERN THE CALL CHERN CHE	23. Place of Occurre 3ce Instruction ach Uninown, Exting If yea, require No reporting to Medical Extension, main of pro- marked of pro- marked and of pro- marked address and a discovery attention, main of marked address attention, marked address attenion, marked address	Inte on Roverse Intel Date 26. If B anitate contract anitate E5 days promoty	Pro IF ANT up to 1 Year, record Time anth due to prematurity, please at anth due to prematurity, please at anth due to prematarity, please at anth due to prematarity at anthe due to prematarity at a	r: NL f Deal h .days stynas stynas death
24. Date of D 27. a) Was ne of pregn 20. If decase (India 28. Cause of	rr Heath Case Facility Neme webm death dae cleal termbotion Wa Ne archi a female of dithe death occur: preprincip? Elso, requires reportin 42 daystrollowing the end of preprin cal abortion, miscorringe, edopic pre Death: Instruction cause, of death.	Plospibl Code Iso (CALE (H E & TE PCATION 25. # Specific date of D b) Was reaction death c) Was c) Was reaction death c) Was c) Was c) Was	23. Place of Occurre See Instruction ash Unknown, Esting If yea, require the second second second second If year, required the second second second second second the second second second second second second second second second second second second second second se	Ins on Roverse ted Date 20. If B diffes () Freeborn d partialized B5 days printing Diffes bits Diffes	Pro IF ANT up to 1 Year, record Time anth due to prematurity, please at ant due to prematurity, please at ant pregnant within the last year ant pregnant within the last Approximate in between onset il	r: NL f Deal da , days styna dauth
24. Date of D 27. a) Was needs a me of progr 20. If decaase during within 29. Cause of Partil	r Heath Can Fadily Nerse auth MM DD YYY when fasth das close tempation Wa Ne tanty? at a finale, did the death occur: preprint and the death occur: preprint the death occur: to death occurs, the occurs of Death: Immediate cause, of death. Arthoedert causes, then, and the death occurs in the order of the	Plaspibl Code VIEU)(CAUL CESTIEDCATION (VIEU)(CAUL CESTIEDCATION (VIEU)(CAUL CESTIEDCATION b) Was newborn death b) Was newborn death b) Was newborn death (VIEU)(CAUL CESTIEDCATION (PLEASE PRI a) (Are to or as a consequence of (Are to or as a consequence of	23. Place of Occurre See Instanced asth Unknown, Estim If yea, require No If yea, require No If yea, require Notified to Seleving to diverse of ore required atomic seleving to diverse of ore seleving to diverse of ore se	Ins on Roverse ted Date 20. F B det and the sambar () Freeborn d particloned a particloned	Pro VF ANT up to 1 Year, record Time seath due to prematurity, pieces at weeks not pregnant within the last year not pregnant within the last Approximate within the last between onset &	r: NL d Deal in days styles styles styles
24. Date of D 27. a) Was not b a me of prog 20. 7 decause (India 29. Cause of Part I	r Heath Case Fadily Nerve acth NM DD YYY when death dia cleat termination \\ \\ \\ \\ \\ tax \\ \\ \\ \\ tax	Plospibl Code VIE0 (CAUCHER TIE) CATION 25. # Specific date of D b) Was newborn death dise to minimal injury go the Wedkat Examiner (PLEASE PR A) (date to or assistment and examples d) (date to or assistment and examples d)	23. Place of Occurre See Instances() See Instances() Bed of the second secon	Ins on Roverse ted Date 20. F B 20. F	Pro WF AINT up to 1 Year, record Time Reath due to prematurity, please a to PO weeks not program within the last year uninown if pegnant within the la Approximate within the la	r: NL d Deal da daya atyea death
24. Date of D 27. a) Was needed b a me b a me d preg 20. If decease in the 20. Cause of Part I	r Heath Can Fadily Norma auth MM DD YYY whom death dia cleat termination with the DD YYY whom death dia cleat termination with the DD YYY authors and the DD YYY whom death dia programs of the death occur: program by the death occur: d Casystoloumg the and of program and and the death occur: Death: <u>Remediath causes</u> of death. <u>Actionation causes</u> of death. <u>Colors also beam marks and the pro-</u> Colors also <u>and the second the pro-</u>	Plospibil Code VIEID (CALLICH EXTINCT) 25. If Specific data of D b) Was newborn death b) Was newborn death intry good to the Wedical Examiner (PLEASE PR (A = to or as a consequence d (A = to or as a conseque	21. Place of Occurre - Solo Instantial Course - Solo Instantia - Solo Instantial Course - Solo Instantial Course - So	Inte on Rovense Intel Date 20. If B ansature () If newborn d gestational a gestational a participation () Brown () gestational a gestational a ges	Pro IF ANT up to 1 Year, record Time anth due to prematurity, please at anth due to prematurity, please at antiper weeks antiper within the last year antiper within the last between prostructs in between prostructs	r: NL d Dead in , days atysaa nyai death
24. Dam of D 27. a) Was no b a mo b a mo change 20. F decause 20. F decause 20. Cause of Partil Partil	r Heath Case Facility Nerve auch MM DD YYY whom death das death	Plospibil Code VIEID (CALL (C EX) E (CALL (C EX) E (CALL (C EX) E (CALL (C EX) C EX) 25. If S pacific data of D b) Was resolver dath dea to makernal industry glotthe Wedical Eleminar (PLEASE PR: (QLEASE PR: (QLEASE PR: (QLEASE PR: (QLEASE C R: (QLEASE R:	21. Place of Occurre String Instantial Constraints If year, reporting to Medical Ex- Service of String Instantial Service	Ins on Roverse ted Date 20. If B diffs. () Freeborn d patielonial a patielonial a E5 days prints PT patient ar line ar line	Pro IF ANT up to 1 Year, record Time acth due to prematurity, please at acth due to prematurity, please at action of pregnant within the last year action of pregnant within the last action of pregnant within the last action of the second of	r: NL d Dead da daya atyear arya death
24. Dam of D 24. Dam of D 27. a) Was ne b a me b a me c of prog 20. If docume (induce 29. Cause of Partil Partil 20. a) Autome	r Heath Case Facility Nerve auch MM CDD YYY when death das is a terrate of the death occur: prepared is a terrate of the death occur: prepared is a terrate of the death occur: prepared is a terrate, of of the death occur: is a terrate, of of the death occur: is a terrate, of the immediate course (i), above, stating the underdying cause, if way, phing the to do grade. is a terrate in the immediate course (i), above, stating the underdying cause, if way, phing the to the immediate course (i), above, stating the underdying cause joint. Course the immediate course (i), above, stating the underdying cause joint. Course the course is a set of the death and course like in the course the re- vy (b) if you course the re-	Idea to a secone querce of (a - to a secone querce of	21. Place of Occurre Strong Lett hypologic and Unincern, Estim If yas, reporting to Read call in solvement Ad days and 3 solvement Ad days a	Ins on Roverse ted Date 20. F B diffes () Freeborn d gestational a Bid days grandry Diff Dr He birth(7) ar line ar line ar line	Pro IF ANT up to 1 Year, record Time sath due to prematurity, pieces at out operaturity, pieces at out pregnant within the last year out pregnant within the last year out of pregnant within the last Approximate in between onset of advantation between onset of output o	r: NL d'Dead da da da da tryal death
24. Dam of D 24. Dam of D 27. a) Was ne b a ne b a ne d duing D f docume (India 29. Cause of Part II 30. a) Autops 30. a) Autops 10. a) Autops	T Health Case Facility Nerves auch NMM DD YYY where feath clas clast entransion _Na _Na clast entransion _Na _Na clast entransion d as finally clast the death occur: preprinted the feath occur: preprint the second of the death clast entransion Clast the later class of death. Articodent causes of death. Articodent causes and the class of the class contributing cause later. Charter Clast the later class and the class of the class contributing cause later. Control of the death file aude shifts the class of the class control of the death but not resulting the underlying cause liters for the class the class the class aude shifts of the death but not resulting the underlying cause liters account information	Interplation Code Interplation Code Interplation Interplatin Interplation Interplation Interplation Interplat	22. Place of Occurre 22. Place of Occurre Even Arc Lystol.co ash Unincere, Estim Tysa, regulated and Es ash unin Add and Es ash unit Add and Add Add and Add Add Add Add Add Add Add Add Add A	Ins on Roverse ted Date 20. F B data ambre () Freebornd gestational a ambre () Freebornd gestational a Bit days grando Diff Dri he bit ()? ar line ar line ar line () Putther Information exp on cause batue of desire	Pro VF ANT up to 1 Year, record Time sath due to prematurity, pieces at out operaturity, pieces at out operaturity which the last year out on pregnent within the last year out on pregnent within the last out operature operator Approximate in between operator pected attr?YearNoUn	r: NL d Deal a _days stywa cleath cleath
24. Date of D 27. a) Was no b a me b a me prog pr	T Health Case Facility Nerne auch MM DD YYY whom death due cleat entrated on	Plospibil Code VIEIDICALE (C ESTIFICATION 20. If Specific data of D b) Was restore dath b) Was restore dath b) data to maternal inter? grouts Medical Examiner (PLEASE PR (0.4 to or as a consquence d (1.4 to or as a consquence d (0.4 to or as a cons	22. Place of Occurre Strol (an Instance) Strol (an Instance) If yes, repring to Monomore, Estim Monomore, Estim Monomore, Estim Monomore, Estim Monomore, Strol Monom	ins on Roverse ind Date 20. If B	Pro IF ANT up to 1 Year, record Time acth due to prematurity, please at acth due to prematurity, please at activity of the second secon	r: NL d Dear as days asysta death death
24. Date of D 24. Date of D 27. a) Was no b a me constraint of D 20. If decause (indic 29. Cause of Partil 20. a) Astops Why Partil 30. a) Astops Why D 10. a) Astops Why D 10. a) Astops Why D 10. a) Astops No D 10. a) Astops No D	r Heath Case Fadily Nerve auch MM DD YYY when death das icle termination _Na _Na response icle termination _Na response icle termination icle	Risephil Code VIES ICALE (C EST IT ELEANT (C)) 20. If Specific data of D b) Was reaction dath dea to maternal idury? glot the Wedical Examiner (PLEASE PR (dath for two state torrespondent d) (dath for as a torrespondent (dath for as a torrespondent d) (dath for as a to	21. Place of Occurre String International Control of Cocurre If year, reporting to Read and Darwork of Correspondence of Cocurre Read and Darwork of Correspondence of Cocurre String Part Programmers, with Place String Part Programmers, with Place String Part Programmers, with Place String Part Programmers, with Place String Part Place String P	c) Date of injuny	Pro NF ANT up to 1 Year, record Time seth due to prematurity, please at point weeks	r: NL d Daal in _days stywa tryal daath daath
24. Dam of D 24. Dam of D 27. a) Was ne b a m b a m (bduing 29. F document (bduing 29. F document (bduing 29. Cause of Partil 20. a) Autopre 30. a) Autopre 31. a) is this of b) if not document b) if not documen	r Heath Case Fadily Nerve acth MM DD YYY when death das death case Fadily Nerve when death das death case of the death occur preproncy? Han, requires reportin de as female, did the death occur preproncy? Fan, requires reportin death cases death death cases death occur preproncy? Teacher Immediate cases of death occur death occur for the immediate cases made bit cases death occur for the immediate cases for the immediate for the immedia	Integrited Code VIESDICALE (C EST ITELECATE CODE VIESDICALE (C EST ITELECATE OF C 20. If Specific data of C b) Was resolver death deate to makernal idury? groundy attribute of the bits by (PLEASE PR (BLEASE PR (CLEASE PR (CLEAS	22. Place of Occurre 22. Place of Occurre Even Architecture, Estim If yea, reporting to Red call Ex Server Architecture, Server Architecture, Televise Televised of ore Training of devices, reporting to Red call Ex Server Architecture, reporting Instanty are degradely	Ins on Roverse ted Date 20. F B 20. F	Pro IF ANT up to 1 Year, record Time anth due to prematurity, piewe at the due to prematurity, piewe at the due to prematurity, piewe at the due to prematurity within the last year the due to prematurity piewe within the last year the due to premature due to prematurity piewe within the last year the due to prematurity piewe within the last year the due to premature due to premate year	r: NE. of Dead of Dead and clays anyour clay
24. Dam of D 24. Dam of D 27. a) Was ne b a ne b a ne (bdd) 29. I docume (bdd) 29. Cause of Part II Part II 30. a) Autops (bdd) 29. Cause of Part II 30. a) Autops (bdd) 29. Cause of (bdd) 29. Cause of (bdd) 20. Cause of	r Heath Case Fadily Nerve acth MM DD YYY whom death due dica termination \\ Wa \N No No No	Heapbel Code VIERUICALE (CERTIFICATION 25.875 peetic date of D b) Waa newborn death date to maternal inguy? gource, still bith or its bath (F (CERASE PR (PLEASE PR (CERASE PR (CERA	22. Place of Occurre 22. Place of Occurre 23. Place of Occurre 17 yea, regulated 24. Place of Occurre 17 yea, regulated of Occurre 24. Place o	Ins on Revenue ted Date 20. F B ted Date 20. F B ted Date 20. F B particular (Prevenue of a particular (Prevenue of a parti	Pro NF ANT up to 1 Year, record Time anth due to prematurity, pieces at anth due to prematurity, pieces at anti- ant pregnent within the last year anti- antipregnent within the last year antipregnent within the last an	v: NL # Dead as days stysaa daath daath daath
24. Dam of D 24. Dam of D 27. a) Was ne b a ne of prog 20. f docume (noise) 29. Cause of Part II 20. a) Autopro Part II 20. a) Autopro 29. Cause of Part II 20. a) Autopro 30. b) If not di 31. b) If not di 32. B THE M 33. Designade I carefy th	r Headb Case Fadily Nerve acth MM DD YYY when death das dia termination \\ \% \\ \% \\ \% \\ MM DD YYY when death das dia termination \\ \% \\ MM DD YYY when death das dia termination \\ \% \\ MM DD YYY when death das dia termination \\ \% \\ MM DD YYY when death das dia termination \\ Wa \\ Na \\ MM DD YYY when death das dia termination \\ MM DD YYY when death das dia termination \\ MM DD YYY when death das dia termination \\ MM DD YYY when death das dia termination dia termination dia termination dia termination termination dia termination termination dia termination data termination dia termination data termination deater disease clocally of high dia termination data termination deater disease clocally of high dia termination data termination deater disease clocally of high dia termination disease clocally of high distribution deater disease clocally high distribution deater disease clocally high disease disease clocally diseas	Ideaphil Code VIESUCALE (CES) (ISL(CALE (CES)) 20. If Specific data of D 20. If Specific data 20. If Specific data of D 20. If Specific data 20. If Specific data of D 20. If Specific data 20. If Specific data of D 20. If Specific data of D 20. If Specific data 20. If Specific	21. Place of Decure Strategies and Linkown, Estimation of the second se	Ins on Roverse ted Date 20. F B 20. F	Pro IF ANT up to 1 Year, record Time anth due to prematurity, piewe at the set of the set year the set of the set o	r: NL di Desari in digozi stywar rrval death incorn
24. Dam of D 24. Dam of D 27. a) Was ne b a ne b a ne (Induity 29. F document (Induity 29. Cause of Part II 20. a) Autops (Induity 29. Cause of Part II 30. a) Autops 31. a) In this of 31. a) In this of 32. IS THEE M 33. Designature	r Heath Case Fadily Nerve acth MM DD YYY whom death due did termination \\ Wa \\ No No No	Iteraphic Code VIESUCALE (C ESA II E (CAT (C)) 20. If Specific data of D b) (Was reaction death dea to maternal idury? goods and the set of the set	21. Place of Occurre Strong Act Lypol. Co and Unincere, Estim Plane reporting to Red all Estimation of the reporting to Red all Estimation of the reporting to and of the reporting to an of the reporti	Ins on Revenue ted Date 20. F B Anthe 20. F B 20. F B	Pro #F ANT up to 1 Year, record Time auth due to prematurity, piewe at weeks weeks unicover if perpart within the last year unicover if perpart within the last vector of perparts vector of per	r: NL d Dead in days stynastynastynastynastynastynastynastyna
24. Dean of D 24. Dean of D 27. a) Was no b a mu b a mu pact of the second pact	Theath Case Facility Nerves Anthe DD YYY where death das cleat termination WM DD YYY where death das cleat termination WM DD YYY where death das cleat termination Was Net Propriet Sector	Idea to make a dealer of the second sec	22. Place of Occurre = Sore Inclured of asthe Unincent, Estim Yea, repring to Ked all Estimates of the Red all Estimates of the reprint of the the the the inclusion of the the settime of the the inclusion of the the inclusion of the the settime of the the inclusion of the the settime of the the inclusion of the inclusion	Ins on Revenue tead Dates 20. F to detail 20. F to 20. F to 20	Pro RF ANT up to 1 Year, record Time math due to prematurity, please at 2 P P P P P P P P P P P P P P P P P P P	r: NL f Daaf a days atywaa daaf daaf coaf
24. Dean of D 24. Dean of D 27. a) Was no b a mu b a mu b a mu b a mu c and b a mu part I 29. Cause of Part I 30. a) Autopa (b a mu part I 30. a) Autopa (b a mu b a mu part I 30. a) Autopa (b a mu b a mu b a mu b a mu part I 30. a) Autopa (b a mu b a m	Treath Case Facility Name Auto DD YYY whom death das cleat entration whom death das cleat entration whom death das cleat entration whom death das cleater data cleater cleat	Idea to a second s	22. Place of Decurs	Ins on Roverse ted Date 20. F B 20. F	Pro	r: NL f Deal at year death death nevel death nevel death
24. Date of D 24. Date of D 25. Date of D 26. Date of D 27. a) Was no b a no b a no (b d) 29. If document (b d) 29. Cause of Part II 29. Cause of Part II 29. Cause of 29. Cause of 29	Theath Case Facility Nerve auth MM DD YYY when death dia dia termination \\ We \\ WM DD YYY when death dia dia termination \\ We \\ When death dia dia termination When death dia Committing the and of program cases When death cases of death. Arresolution and the termination cases \\ Monodiate cases of death. Arresolution and the termination cases \\ Monodiate cases of death. Arresolution cases \\ Monodiate cases of the death cases the termination cases the cases cases the termination cases the termination cases the termination cases the termination cases the cases	Heapbel Code VIES UCALL CERTIFICATION 25. # 5 pactic data of D b) Was reschore death b) Use reschore death interval interval interval (PLEASE PR	22. Place of Occurre State Linkown, Estim State Linkown, Estim Second Company, Estim Second Company, Estim Second Company, State Second Company, State Se	Ins on Reverse ted Date 20. F 2 ted Date 20. F 2 20. F	Pro #F ANT up to 1 Year, record Time auth due to prematurity, please at auth due to prematurity, please at authouse f pegnet within the last year uninown if pegnet within the last approximates Approximates authouse at a second seco	r: NE. # Dead an . days atystat deadh trysal deadh

Appendix 5: Dataset Naming Convention

To facilitate and maintain ease of identifying, accessing and retrieving data a structured and standardized naming convention has been developed.

The naming convention methodology includes:

- Clear structure of each component
- Logic that can be easily understood
- Standardized naming rules
- Document record control

The format and description of each component of the dataset naming convention is as follows:

Format:

Master Files: Dataset name/acronym, underscore, file year, underscore, file status (MASTER), underscore (if applicable), identifiable status (If applicable), underscore, version control number (if applicable), underscore, period and the file extension. Due to the file name length limits of SAS and other analytic software, working files names must be limited to 32 characters, excluding file extension.

Working files: At a minimum, the file must have the dataset name/acronym. Identifiable files must be identified as such; otherwise, the name/acronym will be the minimum (i.e. Identifiable - MS_ID; de-identified – MS). If a longitudinal file is provided annually, the file name will not include the years of data; however, if individual file years are provided as working files, the file year(s) must be included. Versioning will not be included in working files – if a new version is provided, the earlier version becomes transitory and can be disposed of.

For the NLCHI Mortality System, the following convention will be used.

Example:

Master Identifiable single year file MS_2021_Master_ID_v0_1.mdb

Example and Order of Dataset Naming Components		
Component	Example	
Name	MS	
Year	2021	
Dataset Status	Master	
Identifiable Status	ID	
Version	v0.1	
Extension (database type)	mdb	

Master Identifiable longitudinal file MS_CY1991_2021_Master_ID_v0_1.sas7bdat

Example and Order of Dataset Naming Components		
Component	Example	
Name	MS	
Year	Calendar Years 1991-2021	
Dataset Status	Master	
Identifiable status	ID – identifiable	
Version	v0.1	
Extension (database type)	sas7bdat	

Master De-identified longitudinal file MS_CY1991_2021_Master_v0_1.sas7bdat

Example and Order of Dataset Naming Components		
Component	Example	
Name	MS	
Year	Calendar Years 1991-2021	
Dataset Status	Master	
Identifiable status	De-identified	
Version	v0.1	
Extension (database type)	sas7bdat	

Working identifiable longitudinal file MS_ID.sas7bdat

Example and Order of Dataset Naming Components		
Component	Example	
Name	MS	
Identifiable status ID - identifiable		
Extension (database type)	sas7bdat	

Working de-identified longitudinal file MS.sas7bdat

Example and Order of Dataset Naming Components		
Component	Example	
Name	MS	
Identifiable status	De- identified	
Extension (database type)	sas7bdat	

Process

When a master copy is made it will initiate a Dataset Control Record. For each dataset, there will be a document control record to indicate:

- Name of Dataset (including version)
- Requestor
- Date
- Change(s) Made
- Rationale for Change
- Database Analyst
- Pertinent Documentation

If it is necessary to update a master file the database analyst is responsible for:

- Making the changes
- Completing the Dataset Control Record
- Uploading the revised dataset with new version number
- Notifying applicable managers in DaIS of the update and copy of Dataset Control Record

Appendix 6: Active Fields for 2021 De-identified Mortality File

Variable Name	Label
W_PAT_ID	DW Unique Patient identifier
DID_KEY	NIMS Unique Patient Identifier
regisnum	Registration Number
year	Year of Death
sex	Sex
dob	Date of Birth
dob_derived	Date of Birth derived from validated MCP number
age_yrs	Age (Years)
age_yrs_derived	Age (Years) derived from derived Date of Birth
dod	Date of Death
est_days	Estimated Day of Death
est_mths	Estimated Month of Death
est_yrs	Estimated Year of Death
age_mths	Age (Months)
age_days	Age (Days)
age_hrs	Age (Hours)
age_mins	Age (Minutes)
time_dth	Time of Death For deaths less than 1 year of age
marsta	Current Legal Marital Status of Deceased
sgc_res	SGC for Usual Residence
sgc	SGC – Derived
pcode	Postal Code
province	Deceased Province of Residence
country	Deceased Country of Residence
town	Deceased Town of Residence
hth_auth	Regional Health Authority
hospital	Hospital Code
facility	Hospital Name
locality	Locality of Death
location_other	Locality of Death Other, Specify
chapter	Underlying Cause of Death ICD Chapter Number
chapter_desc	Underlying Cause of Death ICD Chapter Name

icd_a	Immediate Cause of Death
icd_atxt	Immediate Cause of Death (Text)
icd_b-m	Antecedent Cause of Death – Other Significant Condition (Code)
icd_btxt - mtxt	Antecedent Cause of Death – Other Significant Condition (Text)
oth_con1 - 12	Condition-1 (ICD code)
oth_con1txt - 12txt	Condition-1(ICD text)
gest_weeks	Gestational Age in Weeks if newborn death due to Prematurity
gest_days	Gestational Age in Days if newborn death due to Prematurity
medterm	Medical Termination of Pregnancy
death_dueto	Was this death due to
death_duetospecify	Was this death due to(Other specified)
autopsy	Autopsy
medinjury	Maternal Injury
dec_female	Female Death
OOP_HCN	Out of Province Identifier
comments	Comments

Appendix 7: Glossary

Client Registry

The Client Registry is maintained at the Centre and contains data including resident demographic information such as name, address, date of birth and administrative information such as date of birth registration, MCP number, etc. It is the first foundational registry of the Newfoundland and Labrador Electronic Heath Record (EHR). The Client Registry enables the accurate identification of individuals in the provincial EHR by linking person-specific information from clinical information systems to the correct person. It is currently used throughout the health care system to accurately identify clients.

Hospital Code

This code identifies a Newfoundland and Labrador health care facility. A hospital code in the Mortality System consists of a four characters, starting with an alpha followed by three numbers. This code identifies a Newfoundland and Labrador health care facility.

MCP Number

A 12 digit number issued to residents of the province by Newfoundland and Labrador Medical Care Plan.

Medical Coding

The International Statistical Classification of Diseases, Injuries, and Causes of Death, Ninth Revision (ICD-9) and the International Classification of Diseases and Related Health Problems, Tenth Revision, Canada (ICD-10-CA), this system consists of codes to classify diseases and health problems.

Office of the Chief Information Officer (OCIO)

The OCIO provides Information Technology and Information Management capability aligned to support the business of government and the citizens of Newfoundland and Labrador.

Secondary Uses Committee

This Committee provides advice to the Chief Privacy Officer, who is accountable for the approval of new uses and disclosures of personal health information. Any committee member who has requested the new uses or is a party to the request for disclosure of data/information shall state the conflict of interest at the beginning of the discussion on the request. There shall be between three and seven members. Membership shall include expertise in research, data quality, and privacy

Geographic Coding

This is a code that identifies a place of residence. The Standard Geographical Classification (SGC) is Statistics Canada's official classification of geographic areas in Canada. The SGC provides unique numeric codes for three types of geographic areas: provinces and territories, census divisions (counties, regional municipalities), and census subdivisions (municipalities).