



NB-IRDT

New Brunswick Institute for
Research, Data and Training

NB Insulin Pump Program DH14

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How to Obtain More Information

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- visit our website at <https://www.nbirdt.ca/>
- email us at nb-irdt@unb.ca
- call us at 506-447-3363 Monday to Friday, 8:30am to 4:30pm

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About this Codebook

This reference guide is intended for users of the NB Insulin Pump Program DH14 data set, provided by the New Brunswick Department of Health. This guide provides an overview of the data, the general methodology used in its creation, and important technical information, such as table and field descriptions. The development of this document is an ongoing process and will receive updates when changes occur in the NB Insulin Pump Program database.

This data product is provided 'as is,' and NB-IRDT makes no warranty, either express or implied, including but not limited to warranties of merchantability and fitness for a particular purpose. In no event will NB-IRDT be liable for any direct, special, indirect, consequential, or other damages, however caused.

Due to the operational nature of administrative data sets, there is potential for discrepancies between the names of variables and their corresponding definitions. In the case of such a discrepancy, the variable definition should be considered the most accurate representation.

Overview

The NB Insulin Pump Program data set contains the application details of individuals under 25 years of age living with diabetes, who are medically eligible and have applied for insulin pump therapy through the Insulin Pump Program.

Sample Universe

Eligible NB Insulin Pump Program participants, who are New Brunswick residents, under 25 years of age, living with type 1 diabetes.

Date Range

2011-04-01 – 2019-03-31 (Fiscal Years)

Data Source

New Brunswick Department of Health

How to Cite this Codebook

New Brunswick Institute for Research, Data and Training. (2021). NB Insulin Pump Program DH14 Codebook for Years 2011-2019. Fredericton, NB: New Brunswick Institute for Research, Data and Training.

Acknowledgements

The NB Insulin Pump Program database is used with permission from the New Brunswick Department of Health.

About this Product

Purpose of the Product

The purpose of the NB Insulin Pump Program DH14 Database Codebook is to provide information on the linkable New Brunswick Insulin Pump Program data held at the New Brunswick Institute for Research, Data and Training (NB-IRDT). This data is accessible to researchers and is particularly relevant for topics related to diabetes, health, social policy, and public policy.

Definitions and Concepts

Client – The individual, under 25 years of age, living with diabetes, who applies for the New Brunswick Insulin Pump Program.

IPP Approval Authority Form – An intake form for the New Brunswick Insulin Pump Program (IPP) which is prepared in part by the referring physician, as well as by the client or their parents or legal guardians. The form is composed of five sections and collects information about a client's demographics, program eligibility, required devices and supplies, financial contributions, and consent for sharing details regarding their participation in the program
(see: <https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/Diabetes/Approval-Authority-Form.pdf>).

Approved Vendor List – A list, maintained by the Insulin Pump Program Business Office, of devices that are eligible for support through the program
(see: <https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/Diabetes/Approved-Vendors.pdf>).

Insulin Pump Family Contribution Calculator – An online tool used for determining a client's (or their family's) contributions toward the costs of the Insulin Pump Program
(see: <https://www.gnb.ca/0053/phc/nbphc/index-e.asp>).

IPP Business Office – An entity within the New Brunswick Department of Health that administers the Insulin Pump Program.

IPP Administrator – The member of the IPP Business Office who processes the IPP Approval Authority Forms.

IPP Coordinator – The member of the IPP Business Office who liaises with insulin pump vendors and program clients.

Content

The New Brunswick Insulin Pump Program data contains the application details of clients, under 25 years of age, living with diabetes, who are medically eligible and have applied for insulin pump therapy through the Insulin Pump Program.

General Methodology

The primary data collection mechanism for the New Brunswick Insulin Pump Program is the IPP Approval Authority Form, which has five sections:

Section 1 – Basic Demographic

Section 2 – Medical Criteria and Confirmation of Eligibility

Section 3 – Device and Supplies Requested

Section 4 – Financial Contribution Assessment

Section 5 – Release of Information

Sections 1-3 are completed by the referring physician with approval from the client or their parents or legal guardians. Sections 4 and 5 are completed by the client or their parents or legal guardians.

The form is received by the IPP Business Office, where the IPP Administrator processes it and generates additional variables. The IPP Coordinator then arranges for the order and delivery of the equipment from the approved vendor specified in Section 3.

Insulin Pump Program clients are required to renew their participation periodically and undergo regular A1c tests.

Limitations

The NB Insulin Pump Program data set does not capture Section 3: Device and Supplies Requested, which contains mostly free text. In addition, the referring physician, despite being a signatory on the IPP Approval Authority Form, is not directly identifiable from the Insulin Pump Program data.

Comparison to Other Products/Versions

The NB Insulin Pump Program DH14 data set resembles the Canadian Chronic Disease Surveillance System (CCDSS) Diabetes DH01c08 data – a longitudinal data set that tracks the diagnoses of diabetes using defined algorithms over time – in the sense that individuals in the data set are diagnosed with diabetes. The CCDSS Diabetes data requires at least two consecutive years of data for a given individual to be captured, while the Insulin Pump Program data is restricted to program participants who must be under the age of 25, living with type 1 diabetes, and require use of an insulin pump.

Using with Other Products

DH01c08 – CCDSS Diabetes Data – The Canadian Chronic Disease Surveillance System for Diabetes contains longitudinal records about chronic health conditions, such as diabetes, flagged using algorithms and administrative data. Linking Insulin Pump Program and CCDSS data may provide insights about the history and progression of diabetes as well as resources for managing the disease.

DH05 – Discharge Abstract Data – The Discharge Abstract Data (DAD) is a collection of records of hospitalizations in New Brunswick and contains details regarding patient characteristics, diagnoses, interventions, and healthcare providers. Linkages between the Insulin Pump Program and DAD would allow the identification and comparison of Insulin Pump Program participant records with those of non-participants.

DH08 – NB Physician Billing – The NB Physician Billing data set contains claims for services rendered by healthcare providers, that were paid for through New Brunswick Medicare. Claims associated with the Insulin Pump Program clients can be linked directly using scrambled patient identifiers; however, physician identifiers are not readily available. It may be possible to establish linkages with referring physicians by identifying the claim for the consultation during which the IPP Approval Authorization Form was signed. This would entail matching the claim date and signing date as well as the client's patient identifier.

DH09 – Provider Registry – The Provider Registry contains information about healthcare providers in New Brunswick, such as their age, gender, specialties, and practice location. Unfortunately, the New Brunswick Insulin Pump Program data does not contain physician identifiers and cannot be directly linked with the Provider Registry.

DH10 – Citizen Database – The Citizen Database is a longitudinal data set of individuals living in New Brunswick, based on their eligibility for provincial Medicare. Combining the Citizen Database with Insulin Pump Program data may reveal insights about the characteristics, mobility, and treatment of individuals living with diabetes in New Brunswick.

Record Layouts and Data Descriptions

Overview

The NB Insulin Pump Program (IPP) data are stored in two tables. However, the variables they contain are presented as distinct sub-sections in order to enhance understanding of their provenance. A majority of these variables are collected from the NB Insulin Pump Program Approval Authorization Form (AAF)¹, which is completed when the client first enrolls, whereas others are gathered by the IPP Business Office at various times during the client's enrollment in the program.

| # | Name | Unit of Observation | Variables |
|---|----------------|------------------------------|-----------|
| 1 | Applicant Data | Client (Program Participant) | 30 |
| 2 | Income Data | Client (Program Participant) | 16 |

Section 1: Basic Demographic

The first section of the AAF records the client's basic demographic information and is completed by the referring physician with approval from the client or their parents or legal guardians.

Section 2: Medical Criteria and Confirmation of Eligibility

The second section of the AAF documents the client's medical condition and eligibility for the IPP – in accordance with the policies and procedures outlined in the Administration Manual² – and is completed by the referring physician with approval from the client or their parents or legal guardians.

Section 3: Device and Supplies Requested

The third section, although not part of the NB Insulin Pump Program database, captures the equipment and supplies requested for the client by their referring physician.

Section 4: Financial Contribution Assessment

The fourth section of the AAF determines the client's financial contributions regarding their insulin pump and insulin pump supplies and is completed by the client or their parents or legal guardians.

Section 5: Release of Information

The fifth section of the AAF records the date on which the client or their parents or legal guardians consented to the release of personal information and personal health information related to their participation in the Insulin Pump Program.

¹ See: <https://www.welcomenb.ca/content/dam/gnb/Departments/h-s/pdf/en/Diabetes/Approval-Authority-Form.pdf>

² See: <https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/Diabetes/administration-manual.pdf>

IPP Business Office

Other variables regarding the participation in the IPP, not collected through the AFF, are recorded by the IPP Business Office at various times throughout the client's enrollment in the program.

Applicant Data

The first of two tables that make up the IPP database, the Applicant Data table contains the client's demographic information, medical or personal health information, and details regarding their participation in the program.

| # | Name | Label | Type |
|----|--------------------------|--|------|
| 1 | Scram_Id | Scrambled Identifier | C |
| 2 | DateofBirth | Date of Birth | N |
| 3 | PostalCode | Postal Code | C |
| 4 | LanguageofService | Language of Service | C |
| 5 | Childliveswith | Child Lives With | C |
| 6 | LegalGuardian | Legal Guardian | C |
| 7 | NewApplicantA1c | New Applicant A1c | N |
| 8 | DateofTest | Date of Test | N |
| 9 | DKAepisodes | DKA Episodes | |
| 10 | Last6months | DKA Episodes Last 6 Months | N |
| 11 | Last12months | DKA Episodes Last 12 Months | N |
| 12 | RegAttendance | Regular Attendance for Diabetes Care Appointments | N |
| 13 | Diabetes Mgmt Knowledge | Diabetes Management Knowledge | N |
| 14 | Selfmonitoring | Self-monitoring | N |
| 15 | Attend Pump Orientation | Attend pump orientation | N |
| 16 | AppropriateFamilySupport | Appropriate Family Support | N |
| 17 | Attendsprogramat | Attends Program At | C |
| 18 | SignatureDate | Signature Date | N |
| 19 | ParentSignatureDate | Parent Signature Date | N |
| 20 | Program | Program | C |
| 21 | Participation Date | Participation Date | N |
| 22 | RenewalA1c | First Renewal A1c Test Value | N |
| 23 | Date1 | First Renewal A1c Test Date | N |
| 24 | RenewalA1c2nd | Second Renewal A1c Test Value | N |
| 25 | Date2 | Second Renewal A1c Test Date | N |
| 26 | DateofLastRenewalLetter | Date of Last Renewal Letter | C |
| 27 | Termination | Termination | N |
| 28 | TerminationDate | Termination Date | N |
| 29 | TerminationReason | Termination Reason | C |
| 30 | FromArchiveTable | From Archive Table | N |

Identifier

Scram_Id

Scrambled Identifier. A randomly generated code which uniquely identifies the client (identifier).

Section 1: Basic Demographic

DateofBirth

Date of Birth. The client's date of birth (MM/DD/YYYY).

PostalCode

Postal Code. The 6-Digit Postal Code (A0A 0A0) of the client's residence (text).

LanguageofService

Language of Service. The client's language of service.

Description

English

French

Childliveswith

Child Lives With. The individuals with whom the client (under 19) resides.

Description

Parents

Mother

Father

Other

LegalGuardian

Legal Guardian. The individuals who are the client's legal guardians.

Description

Parents

Mother

Father

Other

Section 2: Medical Criteria and Confirmation of Eligibility

NewApplicantA1c

New Applicant A1c. The client's most recent A1c laboratory value (0-12) at submission of their Approval Authorization Form (numeric).

DateofTest

Date of Test. The date of the client's most recent A1c test at submission of their Approval Authorization Form (MM/DD/YYYY). The data of the client's most recent A1c test (MM/DD/YYYY).

DKAepisodes

DKA Episodes. The number of diabetic ketoacidosis (DKA) episodes the client experienced (numeric).

Last6months

DKA Episodes Last 6 Months. The number of diabetic ketoacidosis (DKA) episodes the client experienced in the previous 6 months (numeric).

Last12months

DKA Episodes Last 12 Months. The number of diabetic ketoacidosis (DKA) episodes the client experienced in the previous 12 months (numeric).

RegAttendance

Regular Attendance for Diabetes Care Appointments. An indicator for whether the client regularly attends their medical appointments for diabetes care.

Description

Yes

No

Diabetes Mgmt Knowledge

Diabetes Management Knowledge. An indicator for whether the client has sound knowledge of how to manage diabetes.

Description

Yes

No

Selfmonitoring

Self-monitoring. An indicator for whether the client appropriately self-monitors and records their blood glucose levels at least four times per day.

Description

Yes

No

Attend Pump Orientation

Attend Pump Orientation. An indicator for whether the client is able to attend a pump orientation offered by a certified pump trainer.

Description

Yes

No

AppropriateFamilySupport

Appropriate Family Support. An indicator for whether the client has appropriate family support.

Description

Yes

No

Attendsprogramat

Attends Program At. The name of the organization at which the client attends a diabetes care program (text).

SignatureDate

Signature Date. The date the client's Approval Authorization Form was signed by their referring physician (YYYY-MM-DD).

ParentSignatureDate

Parent Signature Date. The date the client's Approval Authorization Form was signed by the client or their parent or legal guardian (YYYY-MM-DD).

IPP Business Office

Program

Program. The program in which the client is participating

| Code | Description |
|------|--------------------------------|
| PIPP | Pediatric Insulin Pump Program |
| SD | Social Development |

RenewalA1c

First Renewal A1c Test Value. The laboratory value (0-12) of the A1c test for the client's first renewal (numeric).

Date1

First Renewal A1c Test Date. The date of the A1c test for the client's first renewal (YYYY-MM-DD).

RenewalA1c2nd

Second Renewal A1c Test Value. The laboratory value (0-12) of the A1c test for the client's second renewal (numeric).

Date2

Second Renewal A1c Test Date. The date of the second renewal A1c test (YYYY-MM-DD).

DateofLastRenewalLetter

Date of Last Renewal Letter. The date of the client's previous letter of renewal (YYYY-MM-DD).

Termination

Termination. An indicator for whether the client's participation in the New Brunswick Insulin Pump Program is terminated.

| Description |
|-------------|
| Yes |
| No |

TerminationDate

Termination Date. The termination date of the client's participation in the New Brunswick Insulin Pump Program (YYYY-MM-DD).

TerminationReason

Termination Reason. The reason for termination of the client's participation in the New Brunswick Insulin Pump Program.

| Code | Description |
|------|--|
| 1 | Incomplete AAF (Clinical section) |
| 2 | Incomplete AAF (Family section) |
| 3 | Family moved out of NB |
| 4 | Family no longer wishes to participate |
| 5 | No longer use Pump |
| 6 | Other (see Notes) |
| 7 | Refused to join program |
| 8 | Renewal not received |
| 9 | Cannot reach client |
| 10 | Left program due to age |
| 11 | Pump device only |
| 12 | Insurance coverage adequate |

FromArchiveTable

From Archive Table. Indicates whether the record was obtained from archived data.

Income Data

The second of two tables that make up the IPP database, the Income Data table contains information regarding the clients' or their parents' or legal guardians' income and financial contributions toward the costs of the program, including both equipment and supplies. The Income Data table also holds records of correspondences between the IPP Business Office and clients and vendors.

| # | Name | Label | Type |
|----|----------------------------|----------------------------|------|
| 1 | Scram_Id | Scrambled Identifier | C |
| 2 | Tax Year | Tax Year | C |
| 3 | Parent #1 Line 150 | Parent #1 Line 150 | N |
| 4 | Parent #1 Line 435 | Parent #1 Line 435 | N |
| 5 | Parent #2 Line 150 | Parent #2 Line 150 | N |
| 6 | Parent #2 Line 435 | Parent #2 Line 435 | N |
| 7 | Family Size | Family Size | N |
| 8 | Family Contribution | Family Contribution | N |
| 9 | Family Contribution Supply | Family Contribution Supply | N |
| 10 | Client Accepts | Client Accepts | N |
| 11 | Client Letter Sent | Client Letter Sent | N |
| 12 | Vendor Letter Sent | Vendor Letter Sent | N |
| 13 | Renewal Letter Sent | Renewal Letter Sent | N |
| 14 | Renewal Letter Received | Renewal Letter Received | N |
| 15 | Date Entered | Date Entered | N |
| 16 | FromArchiveTable | From Archive Table | N |

Identifier

Scram_Id

Scrambled Identifier. A randomly generated code which uniquely identifies the client (identifier).

Section 4: Financial Contribution Assessment

Tax Year

Tax Year. The fiscal year on which the client's financial contribution assessment is based (text).

Parent #1 Line 150

Parent #1 Line 150. The total income (line 150) from the income tax notice of assessment of the client's first parent or guardian (numeric).

Parent #1 Line 435

Parent #1 Line 435. The total tax payable (line 453) from the income tax notice of assessment of the client's first parent or guardian (numeric).

Parent #2 Line 150

Parent #2 Line 150. The total income (line 150) from the income tax notice of assessment of the client's second parent or guardian (numeric).

Parent #2 Line 435

Parent #2 Line 435. The total tax payable (line 453) from the income tax notice of assessment of the client's second parent or guardian (numeric).

Family Size

Family Size. The number in of individuals in the client's family including parents, children living in the household, children for whom child support is being paid, and children under 25 years of age who are attending college or university (numeric).

Family Contribution

Family Contribution. The monetary amount contributed by the client's family for the insulin pump (numeric).

Family Contribution Supply

Family Contribution Supply. The monetary amount contributed by the client's family for insulin pump supplies (numeric).

Section 5: Release of Information

Client Accepts

Client Accepts. The date the release of information was signed by the client or their parents or legal guardians (YYYY-MM-DD).

IPP Business Office

Client Letter Sent

Client Letter Sent. An indicator for whether the client letter was sent.

| Description |
|-------------|
| Yes |
| No |

Vendor Letter Sent

Vendor Letter Sent. An indicator for whether the vendor letter was sent.

Description

Yes

No

Renewal Letter Sent

Renewal Letter Sent. An indicator for whether the renewal letter was sent.

Description

Yes

No

Renewal Letter Received

Renewal Letter Received. An indicator for whether the letter of renewal was received.

Description

Yes

No

Participation Date

Participation Date. The effective date of the client's participation in the New Brunswick Insulin Pump Program (YYYY-MM-DD).

Date Entered

Date Entered. The upload date of the client's record (YYYY-MM-DD).

FromArchiveTable

From Archive Table. Indicates whether the record was obtained from archived data.

Document History

| Version | Author | Nature of Change | Date |
|-------------|-------------------|---|-------------|
| 1.0 | Jonathan Boudreau | Initial draft prepared. Requires variable modalities and validation of content. | 2020-04-24 |
| 1.1 | Jonathan Boudreau | Updated the initial draft using data set metadata. | 2020-07-09 |
| 1.2 | Nicholas Larade | Updated project numbers and format. | 2021-04-01 |
| 1.2.1 | Jennifer Hagen | Updated formatting and removed date ranges | 2022-03-25 |
| Approved by | | Approval Date | Review Date |
| Andy Balzer | | April 21, 2021 | |