**Clinical Data Elements for GIRA Generation Implementation Guide**

**2022**



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#  I. Purpose & Scope

The purpose of this document is to guide eMERGE sites in pulling clinical data elements from their electronic medical records for conditions that need additional information than what is included in the participant survey. This data is being pulled for each of the prospective participants in small batches as they are enrolled. Inputting the data can be done through an NPI, manually by individual, or manually in batches. Sites should use this guide to follow the data dictionary, perform quality control and check for outliers, and compare pulled data to example data. Whatever is entered into the R4 is how it will be presented on the GIRA. There will be no unit conversions or editing in general from the CC.

Please note that this is specifically for GIRA generation, and a separate data dictionary will be created for assessing outcomes. For outcomes, more variables will be collected over time for participants.

# II. Demographics

## Notes & Quality Control

Participant demographics will be collected via the survey however participant lab ID, first name, last name, and date of birth will be collected for quality control purposes. The PARTICIPANT\_LAB\_ID will be generated and extracted from R4. Sites can bring data into R4 by downloading the data dictionary for the instrument and fill that data in and then re-upload to REDCap or through CDIS. For each record, there will be a record ID in REDCap as well. Sites are responsible for making sure the PARTICIPANT\_LAB\_ID matches the name and date of birth, and all data are uploaded into the correct record.

## Example Data

| PARTICIPANT\_LAB\_ID | PART\_FIRST\_NAME | PART\_LAST\_NAME | DATE\_OF\_BIRTH |
| --- | --- | --- | --- |
| 27111111 | Paul | Atreides | 1965-08-01 |
| 27222222 | Alaska | Young | 2005-10-06 |

# III. Labs-Allergy & ICD Flag <= 3 yrs

## Notes & Quality Control

The asthma condition lead is applying a validated algorithm as a tool to predict asthma development in young children1. The algorithm is based on family history and demographics, eczema or wheezing before age 3, and sensitization of 2 or more food or aero allergens.

1: Biagini Myers JM, Schauberger E, He H, Martin LJ, Kroner J, Hill GM, et al. A Pediatric Asthma Risk Score to better predict asthma development in young children. J Allergy Clin Immunol. 2019;143(5):1803-10 e2.

Flags will work to distinguish positive allergy tests. The presence or absence of a flag is what is required for R4 and the GIRA.

The flags for eczema or wheezing before age 3 are what is used for the GIRA (the ages at those events are not used for the GIRA, only for interim calculation). Flag = 1 for these if there are diagnoses on 2 separate dates and one of those diagnoses is on or before age 3.

## Labs-Allergy Example Data

| PARTICIPANT\_LAB\_ID | COUNT\_POSITIVE\_ALLERGY | ALLERGY\_TEST\_FLAG |
| --- | --- | --- |
| 27111111 | 0 | 0 |
| 27222222 | 3 | 1 |

## ICD Flag <= 3 yrs Example Data

| PARTICIPANT\_LAB\_ID | Age\_At\_First\_Wheeze\_Event | Age\_At\_Second\_Wheeze\_Event | Age\_At\_First\_Eczema\_Event | Age\_At\_Second\_Eczema\_Event | Wheezing\_Flag | Eczema\_Flag |
| --- | --- | --- | --- | --- | --- | --- |
| 27111111 | 2 | 4 | . | . | 1 | 0 |
| 27222222 | 2 | . | 1 | 2 | 0 | 1 |

# IV. Labs-Numerical

## Notes & Quality Control

Lipid profile variables unit conversions:

* To convert values from **mmol/L** to **mg/dl**, the equations are as follow (PMID 27122601):
* For **total cholesterol** and **HDL**: multiply value in mmol/L by **38.6**.
* For **TG**: multiply value in mmol/L by **88**.

For cutoffs, these are suggestions for a **flag to double check** (do not want to omit values):

* HDL-C: <5 or >200 mg/dl
* Total cholesterol: <50 or >1000 mg/dl
* Systolic BP: <60 mmHg or >240 mmHg
	+ DBP>0; dynamically check DBP<SBP

* A1c test results as percentages:

| **Normal** | Below 5.7% |
| --- | --- |
| **Prediabetes** | 5.7% to 6.4% |
| **Diabetes** | 6.5% or above |

* Range of feasible values for HbA1c to be: 2.0 – 20.0
* For all lab clinical data elements, use the participant’s enrollment date when including a *most recent value*

##

##

## Example Data

| PARTICIPANT\_LAB\_ID | LAB\_NAME | DATE\_AT\_EVENT | MEASUREMENT\_CONCEPT\_ID | VALUE\_MOST\_RECENT |
| --- | --- | --- | --- | --- |
| 27111111 | Diastolic BP | 2021-07-04 | 3012888 | 80 |
| 27111111 | Systolic BP | 2021-07-04 | 3004249 | 120 |
| 27111111 | HDL | 2021-07-04 | 3034482 | 50 |
| 27111111 | Total Cholesterol | 2021-07-04 | 3015548 | 185 |
| 27111111 | Triglyceride | 2021-07-04 | 42868692 | 100 |
| 27111111 | A1C | 2021-07-04 | 3004410 | 5.5 |
| 27222222 | Diastolic BP | 2020-01-01 | 3012888 | 80 |
| 27222222 | Systolic BP | 2020-01-01 | 3004249 | 120 |
| 27222222 | HDL | 2020-01-01 | 3034482 | 60 |
| 27222222 | Total Cholesterol | 2020-01-01 | 3015548 | 215 |
| 27222222 | Triglyceride | 2020-01-01 | 42868692 | 150 |
| 27222222 | A1C | 2020-01-01 | . | . |

# V. Data Dictionary

## Demographics

| **VARNAME** | **VARDESC** | **TYPE** | **UNITS** | **MIN** | **MAX** | **REPEATED MEASURE** | **REQUIRED** | **COMMENT1** | **COMMENT2** | **VALUES** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PARTICIPANT\_LAB\_ID | Autogenerated de-identified ID that maps back to PERSON\_ID and is used by the labs to identify participants; generated upon consent | String | Decimal | N/A | N/A | No | Yes | Identified participant lab ID that can be extracted from R4 |  |  |
| PART\_FIRST\_NAME | Participant first name | String | N/A | N/A | N/A | No | Yes |  |  |  |
| PART\_LAST\_NAME | Participant last name | String | N/A | N/A | N/A | No | Yes |  |  |  |
| DATE\_OF\_BIRTH | Participant date of birth | Date | YYYY-MM-DD | N/A | N/A | No | Yes |  |  | 1900-01-01=missing |

##

## Labs-Allergy

##

| **VARNAME** | **VARDESC** | **TYPE** | **UNITS** | **MIN** | **MAX** | **REPEATED MEASURE** | **REQUIRED** | **COMMENT1** | **COMMENT2** | **VALUES** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PARTICIPANT\_LAB\_ID | Autogenerated de-identified ID that maps back to PERSON\_ID and is used by the labs to identify participants; generated upon consent | String | Decimal | N/A | N/A | No | Yes | Identified participant lab ID that can be extracted from R4 |  |  |
| COUNT\_POSITIVE\_ALLERGY | Number of positive unique allergy tests in record | Integer | N/A | N/A | N/A | No | No |  |  |  |
| ALLERGY\_TEST\_FLAG | Flag=1 if [COUNT\_POSITIVE\_ALLERGY>=2] OR [1 COUNT\_POSITIVE\_ALLERGY and 1 COUNT\_POSITIVE\_ DISTINCT\_ICD\_ Allergen\_Group] OR [COUNT\_POSITIVE\_ DISTINCT\_ICD\_ Allergen\_Group >=2] ; Flag =0 otherwise | Integer, encoded value | N/A | 0 | 1 | No | Yes | 1 = Positive - if lab result greater than or equal to 0.35 kU/L for allergen0 = Negative | ICD count = distinct ICD code groups (grouped by allergen), not dates/encounters | -9=missing value |

| **Allergy Labs Concept IDs:** |
| --- |
| **LAB\_NAME** | **LOINC\_code** | **LOINC\_name** | **LOINC\_Component** | **Omop\_concept\_id** | **ICD allergy group** |  |
| Allergen, Tree, Elm Tree IgE | 6109-3 | White Elm IgE Ab [Units/volume] in Serum | Ulmus americana Ab.IgE | 3007757 | Allergy to eggs | ICD9 V15.03 or ICD10 Z91.012 |
| Allergen, Tree, Acacia Tree IgE | 6015-2 | Wattle IgE Ab [Units/volume] in Serum | Acacia longifolia Ab.IgE | 3037831 | Allergy to Peanuts | ICD9 V15.01 or ICD10 Z91.01 |
| Allergen, Tree, Mountain Cedar Tree IgE | 6178-8 | Mountain Juniper IgE Ab [Units/volume] in Serum | Juniperus sabinoides Ab.IgE | 3016459 | Allergy to milk products | ICD10 Z91.011 |
| Allergen, Tree, Oak Tree IgE | 6189-5 | White Oak IgE Ab [Units/volume] in Serum | Quercus alba Ab.IgE | 3006734 | Food additives allergy status | ICD10 Z91.02 |
| Allergen, Tree, Olive Tree | 6192-9 | Olive Pollen IgE Ab [Units/volume] in Serum | Olea europaea pollen Ab.IgE | 3014480 | Allergy to seafood | ICD10 Z91.013 |
| Allergen, Tree, Pecan Tree IgE | 6209-1 | Pecan or Hickory Tree IgE Ab [Units/volume] in Serum | Carya illinoinensis tree Ab.IgE  | 3010354 | Allergy to other foods | ICD10 Z91.018 |
| Allergen, Tree, Privet Tree IgE | 7632-3 | Privet IgE Ab [Units/volume] in Serum | Ligustrum vulgare Ab.IgE | 3023543 |  |  |
| Spruce IgE Ab [Units/volume] in Serum | 6857-7 | Spruce IgE Ab [Units/volume] in Serum | Picea excelsa Ab.IgE | 3008374 |  |  |
| Allergen, Tree, Walnut Tree IgE | 33982-0 | California Walnut Pollen IgE Ab [Units/volume] in Serum  | Juglans california pollen Ab.IgE | 3043730 |  |  |
| Allergen, Tree, American Beech Tree IgE | 6038-4 | American Beech IgE Ab [Units/volume] in Serum | Fagus grandifolia Ab.IgE | 3006606 |  |  |
| Cottonwood IgE Ab [Units/volume] in Serum | 6090-5 | Cottonwood IgE Ab [Units/volume] in Serum | Populus deltoides Ab.IgE | 3002527 |  |  |
| Allergen, Tree, Box Elder/Maple Tree IgE | 7155-5 | Boxelder IgE Ab [Units/volume] in Serum | Acer negundo Ab.IgE | 3024149 |  |  |
| Allergen, Tree, White Ash Tree IgE | 6278-6 | White Ash IgE Ab [Units/volume] in Serum | Fraxinus americana Ab.IgE | 3028352 |  |  |
| Red mulberry IgE Ab [Units/volume] in Serum | 7514-3 | Red mulberry IgE Ab [Units/volume] in Serum | Morus rubra Ab.IgE | 3015561 |  |  |
| Allergen, Tree, Palm/Queen Tree IgE | 6222-4 | Queen Palm IgE Ab [Units/volume] in Serum | Syagrus romanzoffianum Ab.IgE | 3015627 |  |  |
| Allergen, Tree, Sweet Gum Tree IgE | 6260-4 | Sweet gum IgE Ab [Units/volume] in Serum | Liquidambar styraciflua Ab.IgE | 3012262 |  |  |
| Allergen, Tree, White Pine Tree IgE | 6282-8 | Eastern White Pine IgE Ab [Units/volume] in Serum | Pinus strobus Ab.IgE | 3027873 |  |  |
| Allergen, Tree, Willow Tree IgE | 6285-1 | Willow IgE Ab [Units/volume] in Serum | Salix caprea Ab.IgE | 3024593 |  |  |
| Allergen, Animal, Cat Dander IgE | 6833-8 | Cat dander IgE Ab [Units/volume] in Serum | Cat dander Ab.IgE | 3023430 |  |  |
| Allergen, Animal, Dog Dander IgE | 6098-8 | Dog dander IgE Ab [Units/volume] in Serum | Dog dander Ab.IgE | 3014133 |  |  |
| Dog epithelium IgE Ab [Units/volume] in Serum | 6099-6 | Dog epithelium IgE Ab [Units/volume] in Serum | Dog epithelium Ab.IgE | 3008136 |  |  |
| Dog dander+Dog epithelium IgE Ab RAST class [Presence] in Serum | 41272-6 | Dog dander+Dog epithelium IgE Ab RAST class [Presence] in Serum | Dog dander+Dog epithelium Ab.IgE.RAST class | 3040439 |  |  |
| American Cockroach IgE Ab [Units/volume] in Serum | 30170-5 | American Cockroach IgE Ab [Units/volume] in Serum | Periplaneta americana Ab.IgE | 3020960 |  |  |
| Cockroach IgE Ab [Units/volume] in Serum | 6078-0 | Cockroach IgE Ab [Units/volume] in Serum | Blatella germanica Ab.IgE | 3001915 |  |  |
| Allergen, Mites, D. farinae IgE | 6095-4 | American house dust mite IgE Ab [Units/volume] in Serum | Dermatophagoides farinae Ab.IgE | 3036780 |  |  |
| Allergen, Mites, D. pteronyssinus IgE | 6096-2 | European house dust mite IgE Ab [Units/volume] in Serum | Dermatophagoides pteronyssinus Ab.IgE | 3023351 |  |  |
| American house dust mite IgE Ab [Units/volume] in Serum | 6095-4 | American house dust mite IgE Ab [Units/volume] in Serum | Dermatophagoides farinae Ab.IgE | 3036780 |  |  |
| Allergen, Mites, G. domesticus IgE | 6126-7 | Glycyphagus domesticus IgE Ab [Units/volume] in Serum | Glycyphagus domesticus Ab.IgE | 3024159 |  |  |
| Mouse Epithelium, IgE | 6179-6 | Mouse epithelium IgE Ab [Units/volume] in Serum | Mouse epithelium Ab.IgE | 3016997 |  |  |
| Mouse urine proteins IgE Ab [Units/volume] in Serum | 6181-2 | Mouse urine proteins IgE Ab [Units/volume] in Serum | Mouse urine proteins Ab.IgE | 3012711 |  |  |
| Mouse Epithelium, IgE | 6179-6 | Mouse epithelium IgE Ab [Units/volume] in Serum | Mouse epithelium Ab.IgE | 3016997 |  |  |
| Egg white IgE Ab [Units/volume] in Serum | 6106-9 | Egg white IgE Ab [Units/volume] in Serum | Egg white Ab.IgE | 3014599 |  |  |
| Whole Egg IgE Ab [Units/volume] in Serum | 7291-8 | Whole Egg IgE Ab [Units/volume] in Serum | Egg whole Ab.IgE | 3018352 |  |  |
| Egg yolk IgE Ab [Units/volume] in Serum | 6107-7 | Egg yolk IgE Ab [Units/volume] in Serum | Egg yolk Ab.IgE | 3015123 |  |  |
| Peanut IgE Ab [Units/volume] in SerumAc | 6206-7 | Peanut IgE Ab [Units/volume] in Serum | Arachis hypogaea Ab.IgE | 3012494 |  |  |
| IgE Peanut w/Component Reflex | 90880-6 | Peanut recombinant (rAra h) 6 IgE Ab [Units/volume] in Serum | Arachis hypogaea recombinant (rAra h) 6 Ab.IgE | 1175134 |  |  |
| Allergen, Insect, Mosquito, IgE | 6177-0 | Aedes mosquito IgE Ab [Units/volume] in Serum | Aedes communis Ab.IgE | 3009165 |  |  |
| Allergen Profile, Food-Milk | 7258-7 | Cow milk IgE Ab [Units/volume] in Serum | Cow milk Ab.IgE | 3001488 |  |  |
| Allergen, Weed, Pigweed IgE | 7604-2 | Common Pigweed IgE Ab [Units/volume] in Serum | Pigweed common Ab.IgE | 3025260 |  |  |
| Allergen, Weed, Russian Thistle IgE | 6234-9 | Saltwort IgE Ab [Units/volume] in Serum | Salsola kali Ab.IgE | 3002187 |  |  |
| Allergen, Grass, Timothy Grass IgE | 6265-3 | Timothy IgE Ab [Units/volume] in Serum | Phleum pratense Ab.IgE | 3003888 |  |  |
| Allergen, Weed, English Plantain IgE | 6110-1 | English plantain IgE Ab [Units/volume] in Serum | Plantago lanceolata Ab.IgE | 3014126 |  |  |
| Alternaria alternata MOLDs | 6020-2  | Alternaria alternata IgE Ab [Units/volume] in Serum | Alternaria alternata Ab.IgE | 3038205 |  |  |
| Aspergillus fumigatus MOLDs | 6025-1 | Aspergillus fumigatus IgE Ab [Units/volume] in Serum | Aspergillus fumigatus Ab.IgE | 3011951 |  |  |
| Cladosporium herbarum MOLDs | 6075-6 | Cladosporium herbarum IgE Ab [Units/volume] in Serum | Cladosporium herbarum Ab.IgE | 3005136 |  |  |
| Penicillium notatum MOLDs | 6212-5 | Penicillium notatum IgE Ab [Units/volume] in Serum | Penicillium notatum Ab.IgE | 3013101 |  |  |
| Cockroach native (nBla g) | 65793-2 | Cockroach native (nBla g) 7 IgE Ab [Units/volume] in Serum | Blatella germanica native (nBla g) 7 Ab.IgE | 40768481 |  |  |
| Candida albicans | 6059-0  | Candida albicans IgE Ab [Units/volume] in Serum | Candida albicans Ab.IgE | 3013766 |  |  |
| Goose feather  | 6129-1 | Goose feather IgE Ab [Units/volume] in Serum | Goose feather Ab.IgE | 3011197 |  |  |
| Pigeon droppings | 6217-4 | Pigeon droppings IgE Ab [Units/volume] in Serum | Pigeon droppings Ab.IgE | 3019658 |  |  |

##

## Labs-Numerical

| **VARNAME** | **VARDESC** | **TYPE** | **UNITS** | **MIN** | **MAX** | **REPEATED MEASURE** | **REQUIRED** | **COMMENT1** | **COMMENT2** | **VALUES** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PARTICIPANT\_LAB\_ID | Autogenerated de-identified ID that maps back to PERSON\_ID and is used by the labs to identify participants; generated upon consent | String | Decimal | N/A | N/A | No | Yes | Identified participant lab ID that can be extracted from R4 |  |  |
| LAB\_NAME | SBP, DBP, total cholesterol, HDL, Triglyceride, or A1C. | String |  | N/A | N/A | Yes | Yes | Most recent value per lab name |  |  |
| DATE\_AT\_EVENT | Date event occurred | Date | YYYY-MM-DD | N/A | N/A | Yes | Yes | Most recent value in record |  |  |
| MEASUREMENT\_CONCEPT\_ID | The MEASUREMENT\_CONCEPT\_ID field is recommended for primary use in analyses, and must be used for network studies. | Integer | N/A | N/A | N/A | Yes | No | A standard, valid OMOP concept ID. It is typically derived from measurement\_source\_concept\_id. The LOINC terminology is the standard for the measurement domain. If your source data does not use LOINC (i.e. in measurement\_source\_concept\_id) then they need to be translated. | Latest systolic blood pressure measure in outpatient setting  | -9=missing value |
| VALUE\_MOST\_RECENT | Pull most recent value in record  | Decimal | N/A | N/A | N/A | No | Yes | lab must be in units specified to be listed below by LOINC codes (or converted to those units), & within the values specified separately, else check the value & correct |  | -9=missing value |

| **Blood Pressure Concept IDs:** |
| --- |
| **Code** | **Description**  |
| 3012888 | Diastolic BP |
| 3004249 | Systolic BP |

| **Labs Concept IDs:** |
| --- |
| **LAB\_NAME** | **LOINC\_code** | **LOINC\_name** | **LOINC\_Component** | **Omop\_concept\_id** | **LOINC Unit**  |
| HDL | 12772-0 | Cholesterol in HDL [Units/volume] in Serum or Plasma by Electrophoresis | Cholesterol.in HDL | 3034482 | mg/dl |
| HDL | 18263-4 | Cholesterol in HDL [Mass/volume] in Serum or Plasma ultracentrifugate | Cholesterol.in HDL | 3013473 | mg/dl |
| HDL | 49130-8 | Cholesterol in HDL [Mass/volume] in Serum or Plasma by Electrophoresis | Cholesterol.in HDL | 3053286 | mg/dl |
| HDL | 35197-3 | Cholesterol in HDL [Mass or Moles/volume] in Serum or Plasma | Cholesterol.in HDL | 3033190 | mg/dl |
| HDL | 12771-2 | Cholesterol in HDL [Presence] in Serum or Plasma by Electrophoresis | Cholesterol.in HDL | 3033638 | mg/dl |
| HDL | 27340-9 | Cholesterol in HDL [Presence] in Serum or Plasma | Cholesterol.in HDL | 3011884 | mg/dl |
| HDL | 14646-4 | Cholesterol in HDL [Moles/volume] in Serum or Plasma | Cholesterol.in HDL | 3023602 | mg/dl |
| Total Cholesterol | 32308-9 | Cholesterol [Moles/volume] in Specimen | Cholesterol | 3015548 | mg/dl |
| Total Cholesterol | 2093-3 | Cholesterol [Mass/volume] in Serum or Plasma | Cholesterol | 3027114 | mg/dl |
| Total Cholesterol | 35200-5 | Cholesterol [Mass or Moles/volume] in Serum or Plasma | Cholesterol | 3031776 | mg/dl |
| Total Cholesterol | 5932-9 | Cholesterol [Presence] in Blood by Test strip | Cholesterol | 3027074 | mg/dl |
| Total Cholesterol | 14647-2 | Cholesterol [Moles/volume] in Serum or Plasma | Cholesterol | 3019900 | mg/dl |
| Total Cholesterol | 48620-9 | Cholesterol [Mass/volume] in Serum or Plasma ultracentrifugate | Cholesterol | 3049873 | mg/dl |
| Triglyceride | 12951-0 | Triglyceride [Mass/volume] in Serum or Plasma by calculation | Triglyceride | 3007943 | mg/dl |
| Triglyceride | 2571-8 | Triglyceride [Mass/volume] in Serum or Plasma | Triglyceride | 3022192 | mg/dl |
| Triglyceride | 3043-7 | Triglyceride [Mass/volume] in Blood | Triglyceride | 3022038 | mg/dl |
| Triglyceride | 35217-9 | Triglyceride [Mass or Moles/volume] in Serum or Plasma | Triglyceride | 3030875 | mg/dl |
| Triglyceride | 28554-4 | Triglyceride [Presence] in Serum or Plasma | Triglyceride | 3012391 | mg/dl |
| Triglyceride | 14927-8 | Triglyceride [Moles/volume] in Serum or Plasma | Triglyceride | 3025839 | mg/dl |
| Triglyceride | 70218-3 | Triglyceride [Moles/volume] in Blood | Triglyceride | 42868692 | mg/dl |
| A1C | 4548-4 | Hemoglobin A1c/Hemoglobin.total in Blood | Hemoglobin A1c/Hemoglobin.total | 3004410 | % as decimal (##.#) |
| A1C | 4549-2 | Hemoglobin A1c/Hemoglobin.total in Blood by Electrophoresis | Hemoglobin A1c/Hemoglobin.total | 3003309 | % as decimal (##.#) |
| A1C | 17856-6 | Hemoglobin A1c/Hemoglobin.total in Blood by HPLC | Hemoglobin A1c/Hemoglobin.total | 3005673 | % as decimal (##.#) |
| A1C | 59261-8 | Hemoglobin A1c/Hemoglobin.total in Blood by IFCC protocol | Hemoglobin A1c/Hemoglobin.total | 40762352 | % as decimal (##.#) |
| A1C | 17855-8 | Hemoglobin A1c/Hemoglobin.total in Blood by calculation | Hemoglobin A1c/Hemoglobin.total | 3007263 | % as decimal (##.#) |
| A1C | 41995-2 | Hemoglobin A1c [Mass/volume] in Blood | Hemoglobin A1c/Hemoglobin.total | 3034639 | % as decimal (##.#) |
| A1C | 71875-9 | Hemoglobin A1c/Hemoglobin.total [Pure mass fraction] in Blood | Hemoglobin A1c/Hemoglobin.total | 42869630 | % as decimal (##.#) |
| A1C | 62388-4 | Hemoglobin A1c/Hemoglobin.total in Blood by JDS/JSCC protocol | Hemoglobin A1c/Hemoglobin.total | 40765129 | % as decimal (##.#) |
| HDL | 2085-9 | Mass/volume in Serum or Plasma | High-density Lipoprotein (HDL), mg/dL | 3007070 | mg/dl |
| Triglyceride | 30524-3 | Molecules/volume - 12h post cfst- in Serum or Plasma | Triglycerides (TG), mg/dL | 3019038 |  |
| Triglyceride | 3048-6 | Mass/volume -post CFst- in Serum or Plasma | Triglycerides (TG), mg/dL | 3027997 |  |
| Triglyceride | 47210-0 | Molecules/volume -post CFst- in Serum or Plasma | Triglycerides (TG), mg/dL | 3048773 |  |

##

## ICD flag first dx<= 3yrs

| **VARNAME** | **VARDESC** | **TYPE** | **UNITS** | **MIN** | **MAX** | **REPEATED MEASURE** | **REQUIRED** | **COMMENT1** | **COMMENT2** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PARTICIPANT\_LAB\_ID | Autogenerated de-identified ID that maps back to PERSON\_ID and is used by the labs to identify participants; generated upon consent | String | Decimal | N/A | N/A | No | Yes | Identified participant lab ID that can be extracted from R4 |  |
| AGE\_AT\_FIRST\_WHEEZE\_EVENT | Age at first occured; Code must be by age 3.0 of the individual  | Numerical; three digit after integer | Year | 0 | 3 | No | No | **Use DOB to only pull codes that occur < /= 3 years of age** | should be 3.0 or below  |
| AGE\_AT\_SECOND\_WHEEZE\_EVENT | Age at second occured; Code can be before or after 3 years of the individual  | Numerical; three digit after integer | Year | 0 | 17 | No | No | **Use DOB to pull codes**  |  |
| AGE\_AT\_FIRST\_ECZEMA\_EVENT | Age at first occured; Code must be by age 3.0 of the individual  | Numerical; three digit after integer | Year | 0 | 3 | No | No | **Use DOB to only pull codes that occur < /= 3 years of age** | should be 3.0 or below  |
| AGE\_AT\_SECOND\_ECZEMA\_EVENT | Age at second occured; Code can be before or after 3 years of the individual  | Numerical; three digit after integer | Year | 0 | 17 | No | No | **Use DOB to pull codes**  |  |
| WHEEZING\_FLAG | Flag=1 when age at first wheezing event < or = 3.0 and age at second event is not null; Otherwise flag=0 | Integer | N/A | 0 | 1 | No | Yes |  |  |
| ECZEMA\_FLAG | Flag=1 when age at first eczema event < or = 3.0 and age at second event is not null; Otherwise flag=0 | Integer | N/A | 0 | 1 | No | Yes |  |  |

| **ICD 9 Codes** |
| --- |
| **Condition Category** | **ICD Code** | **ICD Description** |
| Eczema | 691 | Atopic Dermatitis and related conditions |
| Eczema | 054.0 | Eczema herpeticum |
| Eczema | 373.31 | Eczema of eyelid |
| Eczema | 380.22 | Acute eczematoid otitis externa |
| Eczema | 380.23 | Chronic eczematoid otitis externa |
| Eczema | 684 | Eczema, impetiginous |
| Eczema | 686.8 | Eczema, pustular |
| Eczema | 690.12 | Eczema, Infantile |
| Eczema | 691.8 | Allergic eczema |
| Eczema | 693.1 | Allergic eczema or dermatitis due to egg |
| Eczema | 693.1 | Allergic eczema or dermatitis due to milk products |
| Eczema | 695.89 | Eczema intertrigo |
| Eczema | 696.8 | Psoriasiform eczema |
| Eczema | 703.8 | Dystrophy of nail due to eczema |
| Eczema | 704.8 | Follicular eczema |
| Eczema | 709.9 | Eczematous skin lesions |
| Eczema | V13.3 | H/O acute eczema |
| Wheezing | 466.0 | Acute bronchitis with wheezing |
| Wheezing | 490 | Bronchitis with wheezing |
| Wheezing | 491.9 | Chronic bronchitis with wheezing |
| Wheezing | 519.8 | Wheezing-associated respiratory infection |
| Wheezing | 786.07 | Expiratory wheezing |
| Wheezing | 995.3, 786.07 | Wheezing due to allergy |
| Wheezing | V12.69 | H/O wheezing |

| **ICD 10 Codes** |
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| **Condition Category** | **ICD Code** | **ICD Description** |
| Eczema | L20.xx thru L30.xx | Dermatitis & Eczema |
| Eczema | L20 | Atopic dermatitis |
| Eczema | L26  | Exfoliative dermatitis |
| Eczema | B00.0 | Eczema herpeticum |
| Eczema | H01.13 | Eczematous dermatitis |
| Eczema | H60.54 | Acute eczematoid otitis externa |
| Eczema | H60.6 | Chronic eczematous otitis externa |
| Eczema | H60.8X | Chronic eczematoid otitis externa |
| Eczema | L73.8 | Follicular eczema |
| Eczema | L98.9 | Eczematous skin lesions |
| Eczema | Z87.2 | H/O eczema |
| Wheezing | R06.2  | wheezing NOS |
| Wheezing | J20.9 | Acute bronchitis with wheezing |
| Wheezing | J40 | Bronchitis with wheezing |
| Wheezing | J42 | Chronic bronchitis with wheezing |
| Wheezing | J98.8 | Wheezing-associated respiratory infection |
| Wheezing | R06.2 | Wheezing symptom |
| Wheezing | Z87.898 | History of wheezing |
| Wheezing | R21, R06.2 | Rash with wheezing |
| Wheezing | T78.40XA, R06.2 | Wheezing due to allergy |
| Wheezing | T78.X | Anaphylactic reactions/adverse effects |