



ESP CASE DETECTION ALGORITHM

Diabetes, Type 1 and 2

Document Version 1.3

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Modification History

Version	Date	Modification	By
1.3	8/4/2023	Updated medications	DPM
1.2	10/11/2017	Added ESP Logo and MDPH branding	DPM
1.1	7/5/2016	Placed onto new algorithm template	DPM
1.0	5/29/2014	Initial draft	



1. Overview

The purpose of this document is to describe the criteria used to identify Diabetes, Type 1 and 2 in MDPHnet data.

2. Criteria used to identify cases using ESP data

I. CASE CRITERIA

Criteria for frank diabetes

Any one of the following:

1. Hemoglobin A1C ≥ 6.5
2. Fasting glucose (FG) ≥ 126
3. Random glucoses (RG) ≥ 200 on two or more occasions within a 2-year period
4. Prescription for INSULIN outside of pregnancy
5. ICD9 code for diabetes 250.x or ICD10 code (E10*, E11*, or E14*) on two or more occasions within a 2-year period
6. Prescription for any of the following medications:
 - Acarbose, Albiglutide, Alogliptin
 - Canagliflozin, Chlorpropamide
 - Dapagliflozin, Dulaglutide
 - Empagliflozin, Ertugliflozin, Exenatide
 - Gliclazide, Glimepiride, Glipizide, Glyburide
 - Linagliptin, Liraglutide, Lixisenatide
 - Miglitol
 - Nateglinide
 - Pioglitazone, Pramlintide
 - Repaglinide, Rosiglitazone
 - Saxagliptin, Semaglutide, Sitagliptin
 - Tirzepatide, Tolazamide, Tolbutamide

Classify patient as Type 1 or Type 2 Diabetes

Amongst patients meeting the definition for frank diabetes, define as type 1 if any of the following:

1. C-peptide test < 0.8
2. Diabetes auto-antibodies positive
3. Prescription for URINE ACETONE TEST STRIPS (search on keyword: ACETONE)
4. Ratio of type 1: type 2 ICD9 or ICD10 codes $> 50\%$ and prescription for GLUCAGON
5. Ratio of type 1: type 2 ICD9 or ICD10 codes $> 50\%$ and never prescribed oral hypoglycemic medications

If patient does not meet any of the above criteria for type 1 diabetes then classify as type 2 diabetes.

II. ICD-9/ICD-10 CODES FOR CASE CRITERIA



Diabetes	ICD-9	250.x1	Diabetes mellitus
		250.x3	Diabetes with other coma
	ICD-10	E10	Type 1 diabetes mellitus
		E11	Type 2 diabetes mellitus
		E14	Unspecified diabetes mellitus

III. MEDICATIONS FOR CASE CRITERIA

(See above)

IV. LAB TESTS AND OTHER FOR CASE CRITERIA

Urine ketone test strips* (examples of local lab names, not comprehensive)

KETONE STRIP MC (URINE ACETONE TEST,STRIPS)
CHEMSTRIP K TEST (URINE ACETONE TEST,STRIPS)
KETOSTIX REAGENT STRIP MC (URINE ACETONE TEST,STRIPS)

* use keywords KETONE and ACETONE

Lab tests (examples of local lab names, not comprehensive)

Category	Lab name	Code	Positive
DM-ANTIBODIES	GAD-65 AB	83519-- 3571	>1.0
DM-ANTIBODIES	ICA-512 AUTOANTIBODIES	86341-- 7163	>0.8
DM-ANTIBODIES	ISLET CELL ANTIBODY SCREEN	86341-- 3421	POSITIVE or titre greater than 1:4
DM-ANTIBODIES	ISLET CELL ANTIBODY TITER	86341-- 3422	≥1.25
DM-ANTIBODIES	INSULIN AUTO ANTIBODY	86337-- 2491	≥0.4
DM-ANTIBODIES	INSULIN AB	N1892-- 1655	>0.8
C-PEPTIDE	C-PEPTIDE, PLASMA	84681-- 1245	>1
C-PEPTIDE	C-PEPTIDE	84681-- 5497	>1

Need to adjust the fasting glucose positive threshold to ≥155 if patient pregnant (i.e. fasting glucose a component of OGTT50 or 100)