



ESP CASE DETECTION ALGORITHM

Pre-diabetes

Document Version 1.2

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Modification History

Version	Date	Modification	By
1.2	10/11/2017	Added ESP Logo and MDPH branding	DPM
1.1	7/5/2017	Transferred to new algorithm template	DPM
1.0	9/1/2011	Initial draft	



1. Overview

The purpose of this document is to describe the criteria used to identify Pre-diabetes in MDPHnet data.

2. Criteria used to identify cases using ESP data

I. CASE CRITERIA

Any of the following:

- Hemoglobin A1C between 5.7 and 6.4
- Fasting glucose between 100 and 125
- Two random glucoses >140 and <200

Exclude if:

1. Known frank diabetes ON THE DAY the patient fulfills above criteria for pre-diabetes OR ANY TIME IN THE PAST (including the time period before Jan 1, 2008)

* Pre-diabetes often progresses to become frank diabetes over the course of a few years. A major surveillance goal for this algorithm will be describing the epidemiology of progression from pre-diabetes to frank diabetes so important to detect when a patient first fulfills criteria for pre-diabetes and not let future labs / meds / ICD9s obscure the historical diagnosis.

II. LAB TESTS

Hemoglobin A1C

Heuristic	CPT-comp	Component Name	Prediabetes	Diabetes
A1C	80061--258	GLYCOHEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	80061--2882	HEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	82043--1638	GLYCOHEMOGLOBIN HGB A1C	5.7-6.4	≥6.5
A1C	82043--2882	HEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	82948--2882	HEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	83020--7621	HEMOGLOBIN A1C EXT	5.7-6.4	≥6.5
A1C	83036--1638	GLYCOHEMOGLOBIN HGB A1C	5.7-6.4	≥6.5
A1C	83036--2481	HEMOGLOBIN A1C VARIANT	5.7-6.4	≥6.5
A1C	83036--258	GLYCOHEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	83036--2882	HEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	83036--4859	HEMOGLOBIN A1C PT OF CARE	5.7-6.4	≥6.5
A1C	83036--6978	HGBA1C (SMG OFFICE TEST)	5.7-6.4	≥6.5
A1C	83036--6979	HGBA1C MEAN	5.7-6.4	≥6.5
A1C	83036--7621	HEMOGLOBIN A1C EXT	5.7-6.4	≥6.5
A1C	83036EXT--7621	HEMOGLOBIN A1C EXT	5.7-6.4	≥6.5
A1C	83051--258	GLYCOHEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	85027--2882	HEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	85027EXT--7621	HEMOGLOBIN A1C EXT	5.7-6.4	≥6.5



A1C	83036--1116	GLYCOHEMOGLOBIN	5.7-6.4	≥6.5
A1C	MR0001--258	GLYCOHEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	MR0001--2882	HEMOGLOBIN A1C	5.7-6.4	≥6.5
A1C	MR0001--7621	HEMOGLOBIN A1C EXT	5.7-6.4	≥6.5

Fasting Glucose

Heuristic	CPT-comp	Component Name	Prediabetes	Diabetes
FG	80048--2877	GLUCOSE FASTING	100-125	≥126
FG	80053--2877	GLUCOSE FASTING	100-125	≥126
FG	82947--2877	GLUCOSE FASTING	100-125	≥126
FG	82948--560	GLUCOSE FASTING	100-125	≥126
FG	82951--2876	GLUCOSE FASTING PRE 75 GM	100-125	≥126
FG	82951--2877	GLUCOSE FASTING	100-125	≥126
FG	82951--2943	GLUCOSE FASTING	100-125	≥126
FG	82951--3301	GLUCOSE, FASTING	100-125	≥126
FG	82951--560	GLUCOSE FASTING	100-125	≥126
FG	82951--882	GLUCOSE FASTING, LTT	100-125	≥126
FG	82952--560	GLUCOSE FASTING	100-125	≥126
FG	DMA002--2877	GLUCOSE FASTING	100-125	≥126
FG	N1646--2877	GLUCOSE FASTING	100-125	≥126
FG	N1646--3301	GLUCOSE, FASTING	100-125	≥126
FG	N1646--560	GLUCOSE FASTING	100-125	≥126

Random Glucose

** If patient has a **concurrent** test code 80061--6748 or 82951--7889 or 82947--6748 with result = "FAST*" and NOT EQUAL "*RAND" then consider the random glucose to be a fasting glucose (heuristic FG)**

Heuristic	CPT-comp	Component Name	Prediabetes	Diabetes
RG	82947--111	GLUCOSE, RANDOM I-STAT ANALYZER	≥140	≥200
RG	82947--61	GLUCOSE SER	≥140	≥200
RG	82948--61	GLUCOSE SER	≥140	≥200
RG	82947--1795	GLUCOSE RANDOM SER	≥140	≥200
RG	82948--1795	GLUCOSE RANDOM SER	≥140	≥200
RG	82947--2948	GLUCOSE PT OF CARE	≥140	≥200
RG	82948--2948	GLUCOSE PT OF CARE	≥140	≥200
RG	82962--2948	GLUCOSE PT OF CARE	≥140	≥200
RG	87220--2948	GLUCOSE PT OF CARE	≥140	≥200
RG	82948--2948	GLUCOSE ACCUCHECK	≥140	≥200
RG	83036--2948	GLUCOSE ACCUCHECK	≥140	≥200
RG	82947--6545	GLUCOSE (SMG OFFICE)	≥140	≥200
RG	80004--2523	GLUCOSE	≥140	≥200
RG	80004--3301	GLUCOSE	≥140	≥200
RG	80048--2523	GLUCOSE	≥140	≥200
RG	80051--2523	GLUCOSE	≥140	≥200
RG	80053--2523	GLUCOSE	≥140	≥200
RG	80069--2523	GLUCOSE	≥140	≥200
RG	80076--2523	GLUCOSE	≥140	≥200
RG	81000--2523	GLUCOSE	≥140	≥200
RG	81001--2523	GLUCOSE	≥140	≥200
RG	81002--2523	GLUCOSE	≥140	≥200



RG	81003--2523	GLUCOSE	≥140	≥200
RG	82040--2523	GLUCOSE	≥140	≥200
RG	82272--2523	GLUCOSE	≥140	≥200
RG	82947--2523	GLUCOSE	≥140	≥200
RG	82947--3302	GLUCOSE	≥140	≥200
RG	82947--5758	GLUCOSE	≥140	≥200
RG	82948--2523	GLUCOSE	≥140	≥200
RG	82948--2948	GLUCOSE	≥140	≥200
RG	82948--3301	GLUCOSE	≥140	≥200
RG	82948--3302	GLUCOSE	≥140	≥200
RG	82948--3303	GLUCOSE	≥140	≥200
RG	82948--3305	GLUCOSE	≥140	≥200
RG	82948--3307	GLUCOSE	≥140	≥200
RG	82951--2523	GLUCOSE	≥140	≥200
RG	82951--3301	GLUCOSE	≥140	≥200
RG	82951--3302	GLUCOSE	≥140	≥200
RG	82951--3303	GLUCOSE	≥140	≥200
RG	82951--3305	GLUCOSE	≥140	≥200
RG	82951--3306	GLUCOSE	≥140	≥200
RG	82951--3307	GLUCOSE	≥140	≥200
RG	82951--4506	GLUCOSE	≥140	≥200
RG	82951--4774	GLUCOSE	≥140	≥200
RG	82951--5758	GLUCOSE	≥140	≥200
RG	82962--2523	GLUCOSE	≥140	≥200
RG	84520--2523	GLUCOSE	≥140	≥200
RG	N1460--2523	GLUCOSE	≥140	≥200
RG	N1646--2523	GLUCOSE	≥140	≥200
RG	N2897--2523	GLUCOSE	≥140	≥200

III. CODE MAINTENANCE

Add the following strings to the unmapped lab test search utility:

1. A1C
2. Glyco
3. Fasting
4. Glucose

IV. CODE MAPPING

See the diabetes specification.

V. VALIDATION FILES

Linelist of patients. Include the following fields for all patients:

1. DB number
2. Name



3. MRN
4. DOB
5. Sex
6. Race / ethnicity
7. BMI (closest to date patient first met criteria for prediabetes)
8. Zip code
9. Date patient first met criteria for prediabetes
10. Date patient first met criteria for frank diabetes (if ever)
11. Date of GDM episode 1 (if ever)
12. Date of GM episode 2 (if ever)
13. Maximum A1C calendar year 2006, 2007, 2008, 2009, 2010, 2011, etc. (one field per year)
14. Maximum fasting glucose 2006, 2007, 2008, 2009, 2010, 2011, etc. (one field per year)
15. Two highest random glucoses 2006, 2007, 2008, 2009, 2010, 2011, etc. (one field per year)
16. ICD9 250.x *prior* to development of frank diabetes (yes, no)
17. Prescription for one of the following medications *prior* to development of frank diabetes (yes, no)? Create unique field for each medication.
 - INSULIN
 - GLYBURIDE
 - GLICLAZIDE
 - GLIPIZIDE
 - GLIMEPIRIDE
 - METFORMIN
 - ACARBOSE
 - MIGLITOL
 - PIOGLITAZONE
 - ROSIGLITAZONE
 - REPAGLINIDE
 - NATEGLINIDE
 - MEGLITINIDE
 - SITAGLIPTIN
 - EXENATIDE
 - PRAMLINTIDE