

Table 3: Descriptive characteristics of LMC Diabetes Registry individuals

Descriptive Characteristic	T1D (n=2379)	T2D (n=26,992)
<i>LMC Diabetes Registry Variables</i>		
Male Sex	1,272 (53.5%)	15,098 (55.9%)
Age at Index	40 [28-52[61 [52-69]
Age at Index <25	358 (15.0%)	108 (0.4%)
Age at Index <30	643 (27.0%)	302 (1.1%)
Age at Diabetes Diagnosis*	25 [16-35]	49 [42-58]
Age at Diabetes Diagnosis < 25	1,118 (47.2%)	379 (1.4%)
Age at Diabetes Diagnosis < 30	1,427 (60.2%)	1,110 (4.1%)
Metformin Use	153 (6.4%)	20,462 (75.8%)
Insulin Use	2,322 (97.6%)	11,958 (44.3%)
Non-insulin, non-metformin antihyperglycemic medication	104 (4.4%)	17,342 (64.2%)
<i>Administrative Data Variables</i>		
Insulin†	529 (93.6%)	5,492 (44.7%)
Bolus Insulin†	521 (92.2%)	3,808 (31.0%)
Metformin†	51 (9.0%)	7,084 (57.7%)
Non-insulin, non-metformin antihyperglycemic medication†	26 (4.6%)	7,350 (59.9%)
Any DKA	690 (29.0%)	372 (1.4%)
Hospitalization/ED visit for Type 1 DKA	432 (18.2%)	66 (0.2%)
Hospitalization/ED visit for Type w DKA	105 (4.4%)	277 (1.0%)
Insulin Pump	1,094 (46.0%)	24 (0.1%)
Type 1 ICD-10 hospital code	395 (16.6%)	528 (2.0%)
Type 2 ICD-10 hospital code	690 (29.0%)	13,688 (50.7%)
Diabetes less than age 19	728 (30.6%)	81 (0.3%)
eGFR	101.21 ± 23.24	83.17 ± 24.23
eGFR ≤ 30	27 (1.4%)	644 (3.2%)
eGFR ≤ 45	58 (2.9%)	1,750 (8.7%)

*Age at diagnosis was missing for 8 individuals with T1D and 230 individuals with T2D.

†Denominator for medication use using administrative data was individuals who had any medication claim within ±365 days of index date, since not all individuals have medication data available in administrative data

Table 4: Random Forest Variable Importance Factors

Variable	Mean Decrease Accuracy	Mean Decrease Gini
<i>EMR Data</i>		
Definite T1D in CPP	0.89	131.84
Possible T1D in CPP	0.17	4.22
Definite T2D in CPP	0.61	12.66
Secondary diabetes in CPP	0.07	0.45
Age at index date	0.64	41.73
BMI	0.51	23.98
Insulin	0.78	30.79
Non-insulin, non-metformin antihyperglycemic medication	0.81	23.39
Metformin	0.67	26.87
eGFR	0.32	14.95
Basal insulin only	0.49	3.71
Bolus Insulin	0.64	34.01
<i>Administrative Data</i>		
Bolus insulin	0.65	2.39
T1D DKA	2.03	4.65
Insulin management code	-0.45	1.07
Insulin pump	2.75	12.78
Pancreas Transplant	-0.32	0.32
Partial Pancreatectomy	-0.30	0.12
Pediatric DKA	0.35	0.13
Pediatric Diabetes	1.73	6.99
T2D DKA	0.70	1.01
Glucagon	1.26	4.30
Insulin	0.69	1.86
Metformin	1.71	5.93
Non-insulin, non-metformin antihyperglycemic medication	0.57	1.93
Total pancreatectomy	0.00	0.01
T1D	1.83	4.89
T2D	2.44	16.48
Age at incident diabetes	3.10	57.76
eGFR	1.43	20.77
Age at index	2.27	32.20
Any DKA	1.73	4.27
<i>Combined EMR and Administrative Data</i>		
BMI	0.53	18.68
Age at index	0.51	21.91
Age at incident diabetes	0.71	54.34
eGFR	0.36	11.87
Definite T1D in CPP	0.86	107.69
Possible T1D in CPP	-0.03	2.90
Definite T2D in CPP	0.58	8.06
Secondary diabetes in CPP	0.08	0.22
Any DKA	0.19	4.83
Bolus insulin	0.71	21.98

T1D DKA	0.28	5.87
Insulin	0.79	21.98
Insulin pump	0.65	27.07
Metformin	0.67	18.22
Non-insulin, non-metformin antihyperglycemic medication	0.78	15.95
Pediatric diabetes	0.42	17.55
T2D DKA	0.21	0.85
T1D	0.24	4.28
T2D	0.49	4.43

Table 5: Performance of selected administrative data algorithms in LMC Diabetes Registry

Algorithm Description	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
Pediatric Diabetes or Pump or Type 1 DKA	64.0 (62.0, 65.9)	99.4 (99.3, 99.5)	90.3 (88.8, 91.7)	96.9 (96.7, 97.1)
Pediatric diabetes or pump	58.9 (56.9, 60.9)	99.6 (99.5, 99.7)	93.2 (91.8, 94.4)	96.5 (96.3, 96.7)
[Diabetes incidence <30 + (pediatric diabetes or DKA)] or pump or type 1 DKA	65.4 (63.4, 67.3)	99.3 (99.2, 99.4)	89.5 (87.9, 90.9)	97.0 (96.8, 97.2)
Diabetes incidence <30 or pump or any DKA	79.9 (78.2, 81.5)	94.6 (94.3, 94.9)	56.6 (54.9, 58.3)	98.2 (98.0, 98.3)
Diabetes incidence < 30 or (diabetes incidence < 40 and no T2D hospitalization code) or pump or any DKA	86.6 (85.2, 87.9)	86.7 (86.3, 87.1)	36.4 (35.2, 37.7)	98.7 (98.5, 98.8)

Table 6: Crude and age- and sex-standardized prevalence rates of T1D in Ontario from 2010 to 2017 per 1000 person-years

	Crude			Age- and sex-standardized		
	Rate	95 % Confidence Limits		Rate	95% Confidence Limits	
<i>Algorithm 1: Pediatric diabetes or pump</i>						
2010	1.46	1.44	1.33	1.7	1.68	1.73
2011	1.59	1.57	1.62	1.85	1.82	1.88
2012	1.7	1.67	1.72	1.97	1.94	2.00
2013	1.8	1.78	1.83	2.1	2.07	2.13
2014	1.9	1.87	1.92	2.22	2.19	2.25
2015	1.99	1.97	2.02	2.34	2.31	2.37
2016	2.08	2.05	2.11	2.45	2.42	2.48
2017	2.16	2.14	2.19	2.56	2.53	2.60
<i>Algorithm 2: [age at ODD <30 + (pediatric diabetes or DKA)] or pump or type 1 DKA</i>						
2010	2.13	2.10	2.16	2.38	2.35	2.41
2011	2.27	2.25	2.30	2.54	2.51	2.57
2012	2.39	2.36	2.42	2.67	2.64	2.71
2013	2.51	2.48	2.54	2.81	2.78	2.85
2014	2.62	2.59	2.65	2.95	2.91	2.98
2015	2.73	2.70	2.76	3.07	3.04	3.11
2016	2.84	2.81	2.87	3.2	3.16	3.24
2017	2.94	2.91	2.97	3.33	3.29	3.36
<i>Algorithm 3: age at ODD Incidence < 30 or pump or any DKA</i>						
2010	6.9	6.85	6.95	7.48	7.43	7.54
2011	7.16	7.11	7.21	7.8	7.74	7.86
2012	7.4	7.35	7.45	8.09	8.03	8.14
2013	7.66	7.61	7.71	8.4	8.34	8.46
2014	7.94	7.88	7.99	8.74	8.68	8.79
2015	8.22	8.17	8.27	9.07	9.01	9.13
2016	8.52	8.47	8.58	9.4	9.34	9.47
2017	8.92	8.87	8.98	9.86	9.79	9.92

Table 7: Crude and age- and sex-standardized incidence rates of T1D in Ontario from 2010 to 2017 per 1000 person-years

	Crude			Age- and sex-standardized		
	Rate	95 % Confidence Limits		Rate	95% Confidence Limits	
Admin_{Rule 1}: Pediatric diabetes or pump						
2010	0.1	0.09	0.10	0.1	0.09	0.10
2011	0.07	0.07	0.08	0.07	0.07	0.08
2012	0.06	0.05	0.06	0.06	0.05	0.06
2013	0.05	0.04	0.05	0.05	0.04	0.05
2014	0.04	0.04	0.05	0.04	0.04	0.05
2015	0.04	0.04	0.04	0.04	0.04	0.05
2016	0.04	0.04	0.04	0.04	0.04	0.05
2017	0.03	0.03	0.04	0.04	0.03	0.04
Admin_{Rule 3} [age at ODD <30 + (pediatric diabetes or DKA)] or pump or type 1 DKA						
2010	0.14	0.13	0.15	0.14	0.13	0.15
2011	0.12	0.11	0.13	0.12	0.11	0.13
2012	0.11	0.10	0.11	0.11	0.10	0.11
2013	0.09	0.09	0.10	0.1	0.09	0.10
2014	0.09	0.09	0.10	0.09	0.09	0.10
2015	0.09	0.08	0.09	0.09	0.08	0.09
2016	0.09	0.09	0.10	0.1	0.09	0.10
2017	0.09	0.08	0.09	0.09	0.08	0.10
Admin_{Rule 4}: age at ODD Incidence < 30 or pump or any DKA						
2010	0.45	0.44	0.46	0.47	0.46	0.49
2011	0.43	0.42	0.44	0.45	0.44	0.47
2012	0.43	0.42	0.44	0.45	0.43	0.46
2013	0.42	0.41	0.44	0.44	0.43	0.46
2014	0.45	0.43	0.46	0.46	0.45	0.48
2015	0.45	0.44	0.46	0.47	0.46	0.48
2016	0.5	0.48	0.51	0.51	0.50	0.53
2017	0.58	0.57	0.59	0.61	0.60	0.63)

Table 8: Negative binomial regression for evaluation of prevalence and incidence trends of T1D from 2010 to 2017 (with 2010 as the reference) computed by age-sex strata with follow-up time as an offset

	Prevalence				Incidence			
	Rate Ratio	RR 95% Confidence Limits	p-value	Rate Ratio	RR 95% Confidence Limits	p-value		
Admin_{Rule 1}: Pediatric diabetes or pump								
2011	1.15	1.03	1.29	0.014	0.79	0.67	0.92	0.003
2012	1.29	1.15	1.44	<.0001	0.64	0.55	0.75	<.0001
2013	1.43	1.28	1.60	<.0001	0.53	0.45	0.63	<.0001
2014	1.57	1.41	1.76	<.0001	0.50	0.42	0.59	<.0001
2015	1.72	1.54	1.92	<.0001	0.49	0.41	0.58	<.0001
2016	1.87	1.67	2.09	<.0001	0.50	0.42	0.60	<.0001
2017	2.01	1.80	2.25	<.0001	0.44	0.37	0.52	<.0001
Age 30-49	0.76	0.70	0.82	<.0001	2.86	2.54	3.21	<.0001
Age 50-64	0.23	0.21	0.25	<.0001	1.74	1.54	1.96	<.0001
Age >65	0.07	0.06	0.07	<.0001	0.32	0.28	0.38	<.0001
Male Sex	0.98	0.93	1.04	0.45	1.00	0.92	1.09	0.97
Admin_{Rule 3}: [age at ODD <30 + (pediatric diabetes or DKA)] or pump or type 1 DKA								
2011	1.10	1.01	1.20	0.03	0.90	0.78	1.04	0.16
2012	1.20	1.10	1.31	<.0001	0.82	0.71	0.95	0.01
2013	1.30	1.19	1.42	<.0001	0.76	0.65	0.88	0.00
2014	1.40	1.28	1.53	<.0001	0.76	0.65	0.88	0.00
2015	1.50	1.37	1.64	<.0001	0.71	0.61	0.82	<.0001
2016	1.61	1.47	1.75	<.0001	0.80	0.69	0.93	0.00
2017	1.70	1.56	1.86	<.0001	0.76	0.65	0.88	0.00
Age 30-49	1.12	1.06	1.20	0.00	1.98	1.78	2.20	<.0001
Age 50-64	0.43	0.40	0.46	<.0001	1.49	1.34	1.66	<.0001
Age >65	0.16	0.15	0.18	<.0001	0.74	0.66	0.82	<.0001
Male Sex	1.02	0.98	1.07	0.33	1.15	1.07	1.24	0.00
Admin_{Rule 4}: age at ODD Incidence < 30 or pump or any DKA								
2011	1.06	0.96	1.17	0.29	0.96	0.80	1.15	0.67
2012	1.12	1.02	1.24	0.02	0.96	0.80	1.15	0.67
2013	1.19	1.08	1.31	0.00	0.96	0.80	1.15	0.68
2014	1.27	1.14	1.40	<.0001	1.01	0.84	1.21	0.93
2015	1.34	1.21	1.48	<.0001	1.02	0.85	1.22	0.83
2016	1.43	1.29	1.58	<.0001	1.17	0.98	1.40	0.08
2017	1.53	1.39	1.70	<.0001	1.33	1.11	1.59	0.00
Age 30-49	1.93	1.80	2.07	<.0001	0.23	0.21	0.27	<.0001

Age 50-64	0.53	0.50	0.57	<.0001	0.42	0.37	0.48	<.0001
Age >65	0.43	0.40	0.46	<.0001	0.56	0.50	0.64	<.0001
Male Sex	0.90	0.86	0.95	<.0001	1.06	0.97	1.16	0.23

Table 9: Performance of selected administrative data algorithms in LMC Diabetes Registry stratified by age category

Algorithm	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
<i>Age > 40</i>				
Pediatric Diabetes or Pump or Type 1 DKA	50.6 (47.7, 53.6)	99.7 (99.6, 99.8)	89.1 (86.4, 91.3)	97.8 (97.6, 98.0)
Pediatric diabetes or pump	44.1 (41.2, 47.0)	99.9 (99.9, 100.0)	97.0 (95.1, 98.3)	97.5 (97.3, 97.7)
[age at ODD <30 + (pediatric diabetes or DKA)] or pump or type 1 DKA	52.3 (49.4, 55.2)	99.7 (99.6, 99.7)	88.3 (85.7, 90.6)	97.9 (97.7, 98.0)
<i>Age ≤40</i>				
Pediatric Diabetes or Pump or Type 1 DKA	76.6 (74.1, 78.9)	94.8 (93.6, 95.8)	91.1 (89.2, 92.8)	85.3 (83.6, 86.8)
Pediatric diabetes or pump	73.0 (70.4, 75.5)	95.1 (94.0, 96.0)	91.2 (89.3, 92.9)	83.4 (81.7, 85.0)
[age at ODD <30 + (pediatric diabetes or DKA)] or pump or type 1 DKA	77.7 (75.3, 80.0)	94.1 (92.9, 95.2)	90.2 (88.3, 91.9)	85.8 (84.2, 87.3)

Appendix 1: Abstraction Criteria for Classifying Diabetes as Definite T1D, Possible T1D, or not T1D

- Select [**Def**] if there is a diagnosis of type 1 diabetes recorded in the EMR entry by the family physician or specialist (any medical doctor) and no diagnosis of type 2 diabetes recorded. Terms for type 1 diabetes are: type 1 diabetes, T1D, T1DM, latent autoimmune diabetes in adults (LADA), juvenile diabetes, juvenile-onset diabetes
- Select [**Poss**] if ‘rule out’, ‘R/O’, ‘?’, ‘possible’ or other query term precedes type 1 diabetes or its synonyms
- Select [**Poss**] if there is only documentation by a health care provider that is not a physician
- Select [**Poss**] if there is the following in the **absence** of the term “type 1 diabetes” or “type 2 diabetes”:
 - Diabetic ketoacidosis/DKA
 - Age at diagnosis ≤ 30
 - BMI < 25
 - Insulin pump use
- Select [**Poss**] if both type 1 and type 2 diabetes terms recorded
- Select [**Poss**] if IDDM or insulin-dependent DM is recorded and no type 1 diabetes terms
- Select [**Poss**] if the terms type 1 diabetes or type 2 diabetes are not mentioned the EMR entry.
- Select [**No**] if type 2 diabetes recorded and no type 1 diabetes terms

Appendix 2: Codes used for administrative data variables

Variable	Database	Definition
Index Date	EMRALD	Date of last visit with family physician in EMRALD to be provided by EMRALD data. Index date = EMRALD last visit date + 30 days All variables should use data prior to the first of either Sept 30, 2015 or subject's index date with only exception being OHIP plus
Diabetes diagnosis date	ODD	Date on which criteria for incident ODD first met. (dxdate in ODD)
Age at diagnosis	ODD, RPDB	Age on ODD incidence date
Age at diagnosis ≤30	ODB, RPDB	If age at diagnosis is ≤30 then yes; if age >30 then no; If age at diagnosis not available then missing
Age at diagnosis ≤25	ODB, RPDB	If age at diagnosis is ≤25 then yes; if age >25 then no; If age at diagnosis not available then missing
Age on index date	RPDB	Age on index date
Index date age ≤30	RPDB	Categorized age variable
Index date age ≤25	RPDB	Categorized age variable
Sex	RPDB	Male= 0 or Female =1
ODD Flag	ODD	ODD Flag =yes if ODD incident date is prior to or on index date ODD Flag = no if not in ODD or ODD incident date is later than index date
ODB Flag	ODB	For all subjects in cohort, do 1 year lookback from index date and 1 year look-forward from index date (2 year time window in total). In those 2 years, look for any medication claim in ODB using plantype A, C, D, F, K, L, M, N, T, Y. Exclude the following PINs: 93899979, 93899981, 93899982, 93899983, 93899984 93899985, 93899986, 93899987, 93899988, 93899989 93899991, 93899992, 93899993, 2346850, 2223929 2362384, 2015986, 93899941, 93899942, 93899943 93899944, 93899945, 93899946 If there is a clam then ODBFlag = Yes If there is no claim then ODBFlag = No
Insulin Use	ODB	- Missing if ODB flag is no - Yes if any prescription for insulin in 365 days prior to index date - No if no insulin prescription in 365 days prior to index date
Metformin Use	ODB	- Missing if ODB flag is no - Yes if any prescription for metformin in 365 days prior to index date - No if no metformin prescription in 365 days prior to index date
Non-meformin	ODB	- Missing if ODB flag is no

oral hypoglycemic exposure		<ul style="list-style-type: none"> - Yes if any prescription for non-metformin oral hypoglycemic agent in 365 days prior to index date - No if no non-metformin oral hypoglycemic agent prescription in 365 days prior to index date
Glucagon	ODB	<ul style="list-style-type: none"> - Missing if ODB flag is no - Yes if any prescription for glucagon in 365 days prior to index date - No if no glucagon prescription in 365 days prior to index date
Insulin Management Code	OHIP	Yes if G500 or G514 or G520 after incident ODD date. No if none of these.
Insulin Management Code Date	OHIP	Date of first eligible dxcode for insulin management
Basal insulin only	ODB	<ul style="list-style-type: none"> - Missing if ODB flag is no <p>See accompanying excel file ‘Insulin DINs’ If patient has insulin use then check for Basal Insulin Only In Insulin DINs.xlsx basal insulin = 0 and bolus insulin = 1 If subject has only basal insulin (only insulins that = 0 and none of the insulins that = 1) then basal insulin only = yes If subject has any insulins assigned 1 then basal insulin only = no</p>
Bolus Insulin	ODB	<ul style="list-style-type: none"> - Missing if ODB flag is no - If any insulins =1 then bolus insulin = yes
Any DKA	DAD	ICD9: 2501 If ICD9 code for DKA or either of the DKA codes below, then any DKA = yes. No DKA codes then DKA = no.
Hospitalization or Emergency Visit for Type 1 DKA	DAD/NACRS	ICD10: E100, E101 Provide date of first eligible code.
Hospitalization or Emergency Visit for Possible Type 1 DKA	DAD	ICD10: E110, E111, E130, E131, E140, E141 Provide date of first eligible code.
Insulin Pump Use	ADP	If IKN appears in ADP Insulin then pump = yes
Type 1 ICD10 Code	DAD/NACRS	ICD10: E102, E103, E104, E105, O24001-O24093, O24501-O24504 Provide total number of these from April 1, 2002 to index date Also provide yes/no if any code
Type 2 ICD10 Code	DAD/NACRS	ICD10: E11x, O24101-O24199, O24601-O24604 Provide total number of these from April 1, 2002 to

		index date Also provide yes/no if any code
Pediatric Diabetes: 4 physician service codes in any 1 year \leq age 18	OHIP	250 Provide first date criteria met (date = 1 st of the 4 codes)
Pediatric DKA: inpatient admission or emergency department visit for DKA \leq age 18	DAD/NACRS	ICD10: E100, E101, E110, E111, E130, E131, E140, E141 Provide date of first eligible code.
Creatinine	OLIS	Serum Creatinine (LOINC = 14682-9) - Creatinine value for most recent creatinine
Creatinine date	OLIS	Date of most recent creatinine value
eGFR	OLIS Assume all subjects are of non-black race	$eGFR = 141 \times \min(S_{cr}/\kappa, 1)^\alpha \times \max(S_{cr}/\kappa, 1)^{-1.209} \times 0.993^{Age} \times 1.018$ [if female] S_{cr} is serum creatinine in mg/dL , κ is 0.7 for females and 0.9 for males, α is -0.329 for females and -0.411 for males, min indicates the minimum of S_{cr}/κ or 1, and max indicates the maximum of S_{cr}/κ or 1 https://www.niddk.nih.gov/health-information/communication-programs/nkdep/laboratory-evaluation/glomerular-filtration-rate-calculators/ckd-epi-adults-conventional-units <u>Provide eGFR \leq30 yes/no</u> <u>Provide eGFR \leq45 yes/no</u>
Partial Pancreatectomy	DAD CCI Codes	1OJ87DA 1OJ87LA 1OJ87VC 1OJ87VK 1OK87LA 1OK87VZ 1OK87WA 1OK87XN
Partial pancreatectmy date	DAD CCI	1 st Date for above code
Total Pancreatectomy	DAD CCI Codes	1OJ89LA 1OJ89VZ 1OK89LA 1OK91LA 1OK91XN
Total	DAD CCI	1 st Date for above code

pancreatectmy date		
Cystic Fibrosis	OHIP DAD	OHIP dx code 277 ICD10: any code beginning with E84 If either OHIP or ICD10 then CF = yes
CF Source	OHIP DAD	If CF = yes then indicate if met criteria based on OHIP or based on DAD or both
CF Date	OHIP DAD	1st date for CF (1 st of either DAD or OHIP)
CFDR Flag1	CFDR	If in CFR then CFDR Flag1 = yes, unless dispositionkey = 6 (determined not to have CF). If not in CFDR or if dispositionkey = 6 then CFDR Flag1 = no.
CFDR Flag2	CFDR	If in CFDR and ComplicationKey = 4 (diabetes) then CFDR Flag 2 = yes. If not in CFDR or Complications do not include diabetes then CFDR Flag 2= no.
Islet Cell Transplant	DAD CCI Codes	1OJ83WKXXXA 1OJ85GRXXXK 1OJ85HAXXL 1OJ85WKXXXK
Islet cell transplant date	DAD CCI	1 st Date for above CCI code
Pancreatic Transplant	DAD CCI Codes	1OK85TLXXXK 1OK85TMXXXK 1OK85TNXXXK 1OK85XTXXXK 1OK85XUXXXK 1OK85XVXXXK 1OK87LA 1OK87VZ 1OK87WA 1OK87XN
Pancreatic transplant date	DAD CCI	1 st Date for above CCI code
Diabetes After Other transplant	DAD CCI	ODD incident date occurs any time after one of the following codes: Any codes beginning with 1GR85, 1GT85 (lung), 1HY85 (heart + lung), 1HZ85 (heart), 1OA85 (liver), 1PC85 (kidney); 1LZ19HHU7A, 1LZ19HHU7J, 1LZ19HHU8A, 1LZ19HHU8J (stem cell) 1WY19HHXXXA, 1WY19HHXXI, 1WY19HHXXXJ, 1WY19HHXXM (bone marrow) If any of the above codes present then other transplant = yes
Metformin	ODB	subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes metformin
Insulin	ODB	subclnam starts with "INSULIN"

		for basal versus bolus insulin see excel file 'insulin DINS'
Non-metformin oral hypoglycemic	ODB	<p>subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes troglitazone or rosiglitazone or pioglitazone</p> <p>subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes sitagliptin or saxagliptin or linagliptin or alogliptin</p> <p>subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes acarbose</p> <p>subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes canagliflozin or dapagliflozin or empagliflozin</p> <p>subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes glyburide or chlorpropramide or gliclazide or glipizide or glimepiride</p> <p>subclnam = "ORAL ANTI-GLYCEMICS" and drugname includes repaglinide or nateglinide</p> <p>subclnam = "ANTI-DIABETIC AGENTS: MISCELLANEOUS"</p>
Glucagon	ODB	Sbuclname = pancreatic hormones and drugname includes glucagon