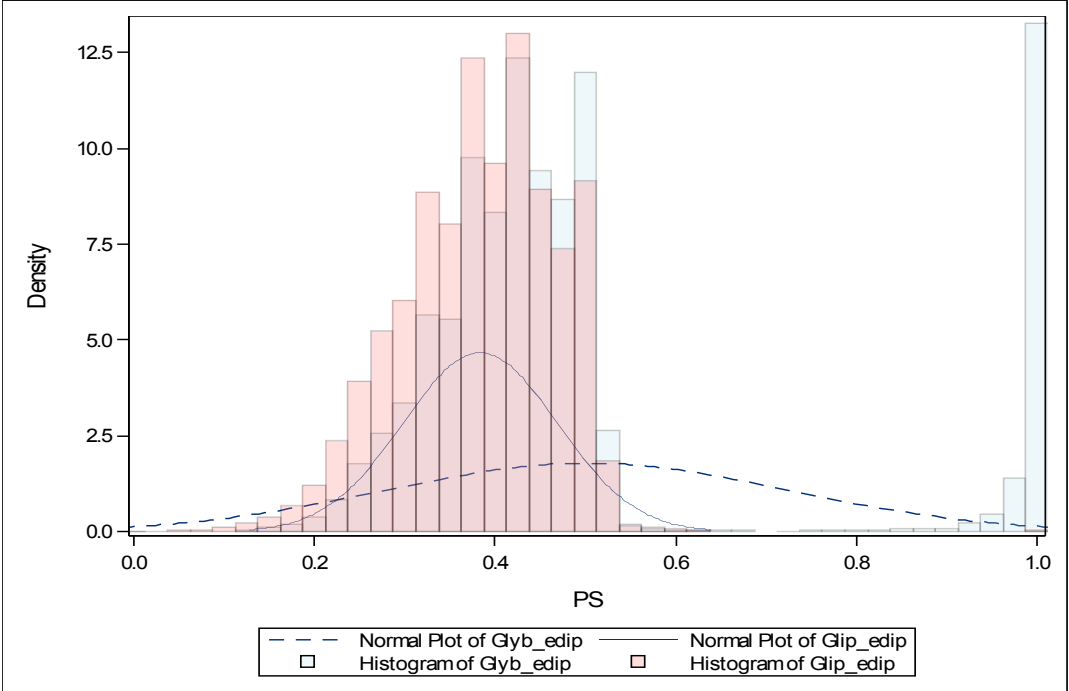**eFigure 1.** Example of distributions of the propensity scores including both pre-defined covariates and the high-dimensional propensity score algorithm for the unmatched cohorts from one data partner with a cluster of persons with propensity scores near 1.0 in users of glyburide and without convergence warnings.
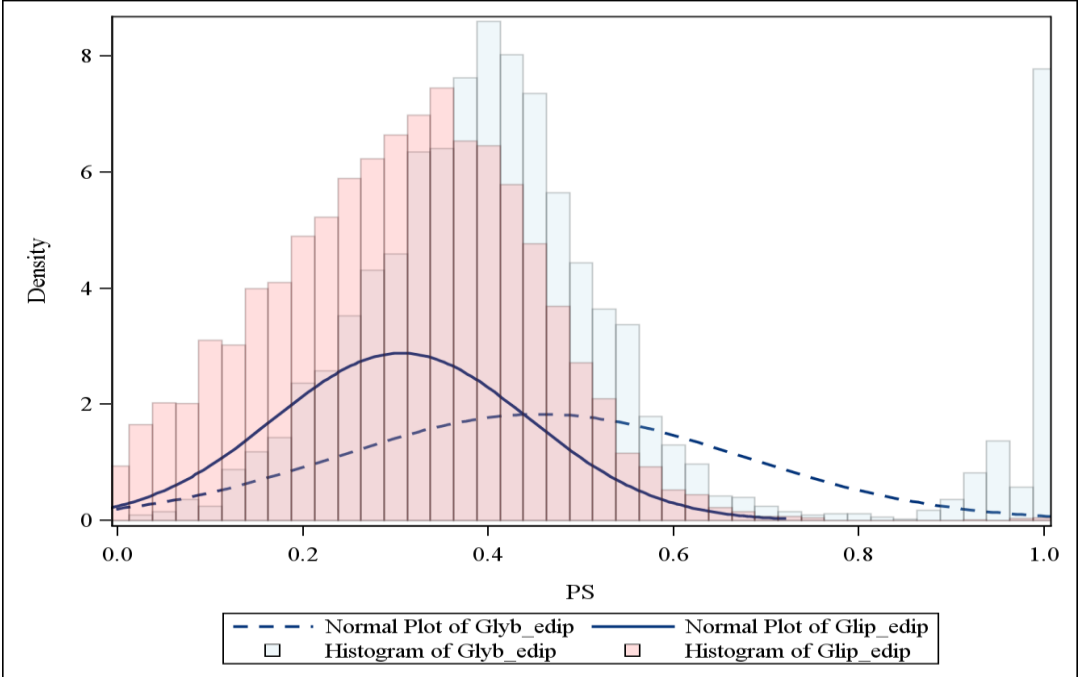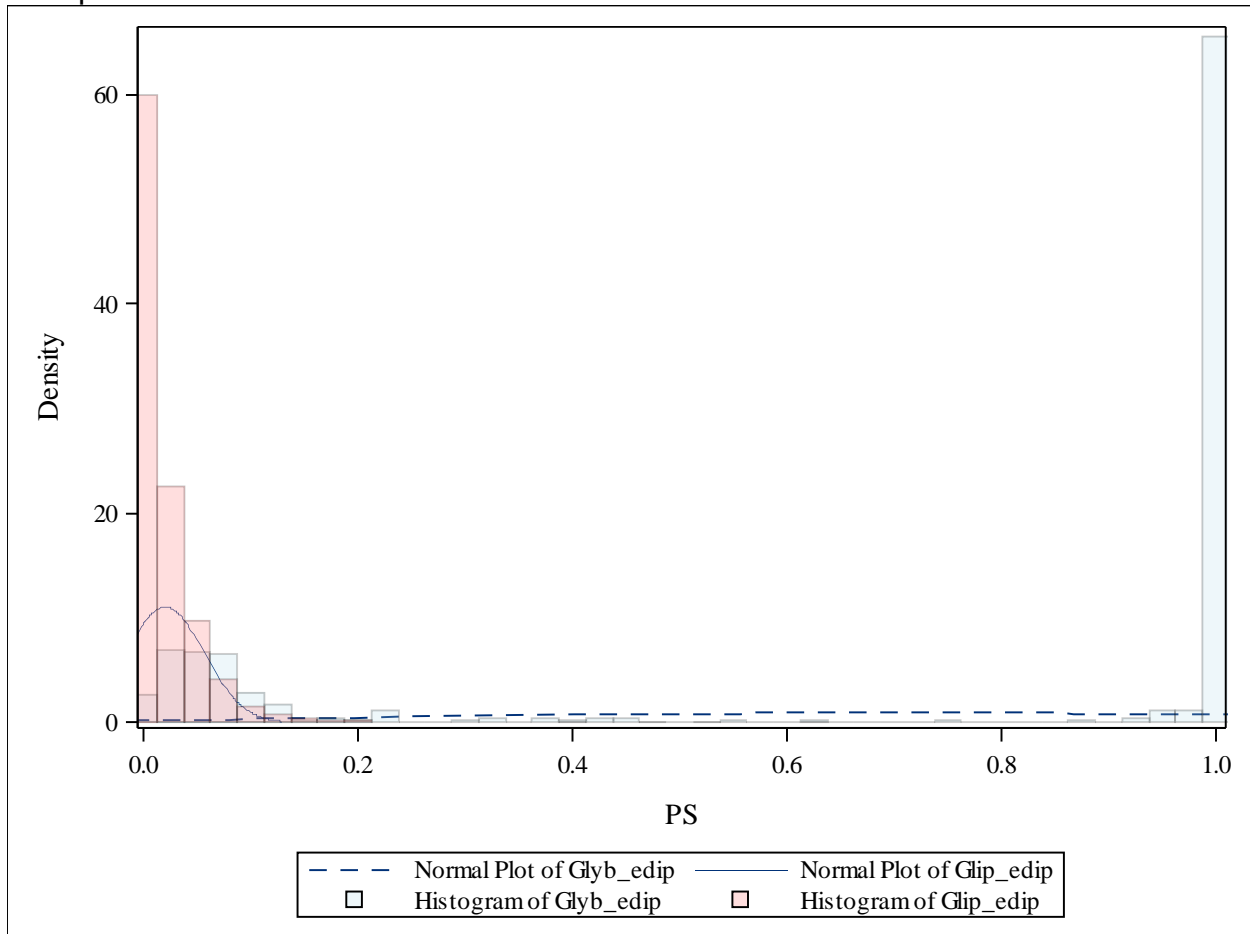
eFigure 2. Example of distributions of the propensity scores including both pre-defined covariates and the high-dimensional propensity score algorithm for the unmatched cohorts from one data partner with a cluster of persons with propensity scores near 1.0 in users of glyburide and with convergence warnings.

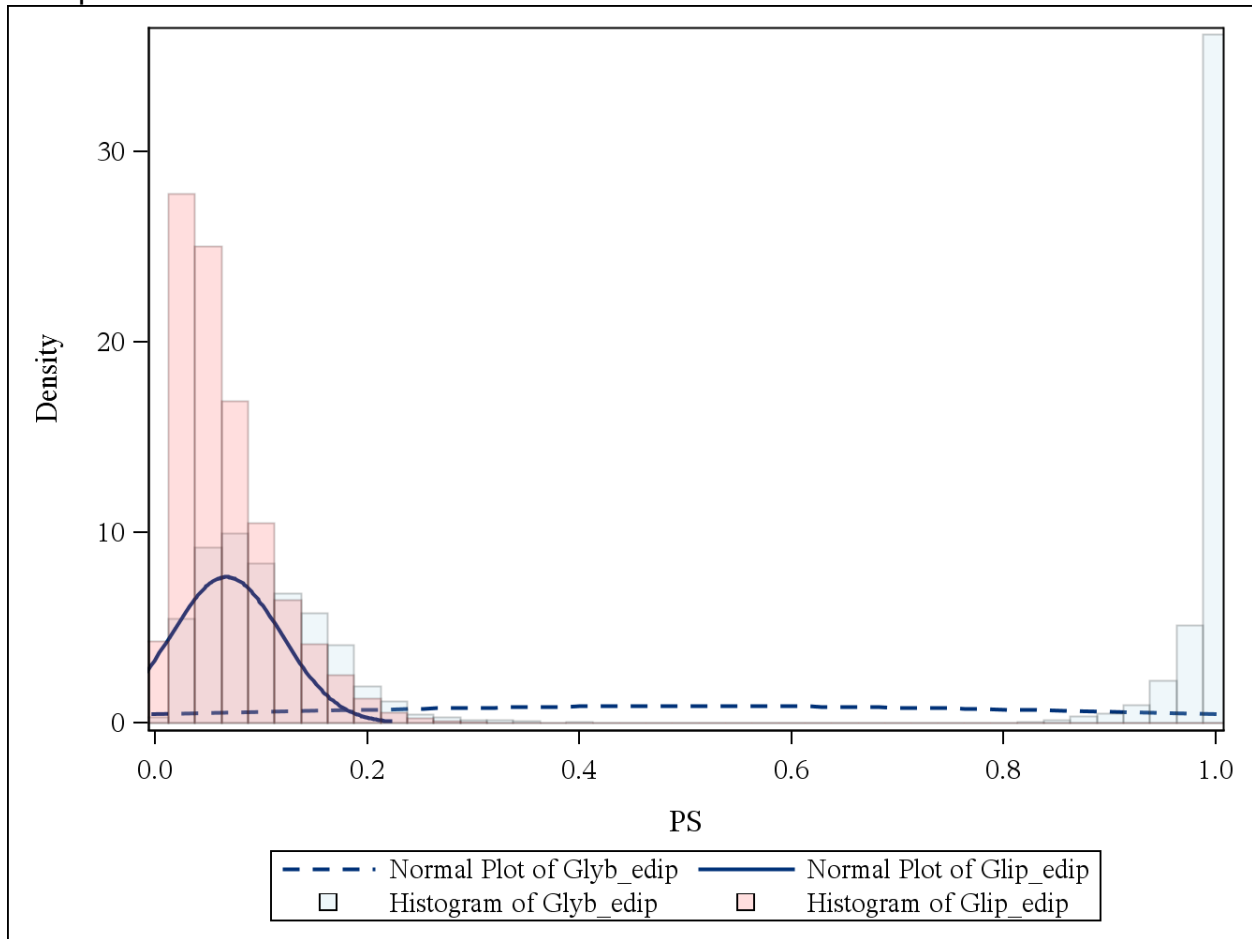**eFigure 3.** Distributions of the propensity scores including both pre-defined covariates and the high-dimensional propensity score algorithm for the unmatched cohorts from data partner 9.

eFigure 4. Distributions of the propensity scores including both pre-defined covariates and the high-dimensional propensity score algorithm for the unmatched cohorts from data partner 11.

eTable 1. International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) codes used to identify covariates.

Covariates	Position and care setting	ICD-9 codes
Chronic Kidney Disease	Any-position diagnosis in all care settings.	582.xx, 583, 583.0, 583.1, 583.2, 583.4, 583.6, 583.7, 585.x, 586.x, or 588.x
Severe Hypoglycemia	Any-position diagnosis in all care settings.	251.0, 251.1, 251.2, and 250.8. Exclude the case identified by 250.8 if that was present with a co-diagnosis of 681.xx, 682.xx, 686.90, 707.xx, 730.27, 731.8.

eTable 2. Hazard ratios of emergency department visits and hospital admissions for hypoglycemia by site.

Hazard Ratio (95%CI) [a, b]	Unmatched	Predefined covariates – Unconditional model [c]	Predefined covariates – Conditional model [d]	hdPS – Unconditional model [c]	hdPS – Conditional model [d]	Predefined covariates and hdPS – Unconditional model [c]	Predefined covariates and hdPS – Conditional model [d]
Data partner 1	1.31 (1.13-1.52)	1.47 (1.24, 1.75)	1.47 (1.18, 1.83)	1.58 (1.33, 1.88)	1.60 (1.29, 2.00)	1.50 (1.26, 1.78)	1.42 (1.14, 1.76)
Data partner 2	1.48 (1.26, 1.74)	1.76 (1.46, 2.12)	1.71 (1.35, 2.18)	1.71 (1.43, 2.06)	1.61 (1.27, 2.04)	1.79 (1.48, 2.16)	1.77 (1.39, 2.26)
Data partner 3	1.18 (0.72, 1.96)	1.59 (0.84, 3.01)	1.67 (0.73, 3.81)	---	---	---	---
Data partner 4	1.57 (0.86, 2.86)	1.53 (0.75, 3.12)	2.60 (0.93, 7.29)	1.87 (0.85, 4.08)	1.80 (0.60, 5.37)	2.00 (0.92, 4.34)	2.40 (0.85, 6.81)
Data partner 5	1.61 (0.80, 3.23)	1.33 (0.54, 3.27)	1.75 (0.51, 5.98)	---	---	---	---
Data partner 6	17.72 (2.04, 153.9)	6.60 (0.75, 58.07)	72^13 (0.00, .)	---	---	---	---
Data partner 7	1.09 (0.54, 2.20)	1.41 (0.59, 2.88)	0.71 (0.23, 2.25)	1.19 (0.43, 3.27)	1.25 (0.34, 4.65)	1.19 (0.43, 3.27)	1.50 (0.42, 5.32)
Data partner 8	1.32 (1.19, 1.47)	1.38 (1.23, 1.56)	1.41 (1.21, 1.64)	---	---	---	---
Data partner 9	0.44 (0.66, 3.23)	1.03 (0.06, 16.51)	. (., .)	---	---	---	---
Data partner 10	3.33 (1.27, 8.72)	2.30 (0.53, 9.91)	4.00 (0.45, 35.79)	---	---	---	---
Data partner 11	0.55 (0.47, 0.65)	0.96 (0.77, 1.19)	0.85 (0.63, 1.13)	---	---	---	---
Data partner 12	3.52 (1.28, 9.68)	2.90 (0.51, 16.34)	1.00 (0.14, 7.10)	---	---	---	---
Data partner 13	1.03 (0.88, 1.21)	1.10 (0.92, 1.31)	1.16 (0.93, 1.45)	1.24 (1.04, 1.49)	1.29 (1.04, 1.61)	1.24 (1.04, 1.49)	1.29 (1.04, 1.61)

hdPS – High-dimensional propensity score, CI – Confidence interval.
[a] Hazard ratios comparing glyburide versus. glipizide.
[b] Please note, one data partner removed a small number of users that moved to administrative services only plans. Information from these users is included in Tables 1 and 2, but removed from subsequent tables.
[c] The conditional models were stratified by the matched pair.
[d] The unconditional models were not stratified by the matched pair.

eTable 3. Top ten variables that most strongly predicted glyburide exposure selected by the high-dimensional propensity score algorithm from one data partner with a cluster of persons with propensity scores near 1.0 in users of glyburide and without convergence warnings.

Code Type	Code	Concept
CPT	0502F	Subsequent prenatal care visit (prenatal)
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
CPT	82950	Glucose; post glucose dose (includes glucose)
CPT	0502F	Subsequent prenatal care visit (prenatal)
ICDDX	V22.2	Pregnant state, incidental
CPT	0501F	Prenatal flow sheet documented in medical record by first prenatal visit (documentation includes at minimum blood pressure, weight, urine protein, uterine size, fetal heart tones, and estimated date of delivery)
ICDDX	V22.2	Pregnant state, incidental
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
ICDDX	V22.2	Pregnant state, incidental
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication

ICDDX – *International Classification of Disease, 9ᵗʰ revision, Clinical Modification* (ICD-9-CM) diagnoses; CPT – Current Procedural Terminology.

eTable 4. Top ten variables that most strongly predicted glyburide exposure selected by the high-dimensional propensity score algorithm from one data partner with a cluster of persons with propensity scores near 1.0 in users of glyburide and with convergence warnings.

Code Type	Code	Concept
ICDDX	V22.1	Supervision of other normal pregnancy
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
ICDDX	V22.1	Supervision of other normal pregnancy
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
ICDDX	V22.1	Supervision of other normal pregnancy
ICDPX	966	Enteral infusion of concentrated nutritional substances
HCPCS	Q4081	Injection, epoetin alfa, 100 units (for ERSD dialysis)
HCPCS	P9604	Travel allowance one way in connection with medically necessary laboratory specimen collection drawn from home bound or nursing home bound patient; prorated trip charge.
ICDPX	9390	Non-invasive mechanical ventilation

ICDDX – *International Classification of Disease, 9th revision, Clinical Modification* (ICD-9-CM) diagnoses; ICDPX – *International Classification of Disease, 9th edition* (ICD-9) procedures; HCPCS – Healthcare Common Procedure Coding System procedures.

eTable 5. Top ten variables that most strongly predicted glyburide exposure selected by the high-dimensional propensity score algorithm from data partner 9.

Code Type	Code	Concept
CPT	0502F	Subsequent prenatal care visit (prenatal)
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
CPT	82950	Glucose; post glucose dose (includes glucose)
CPT	0502F	Subsequent prenatal care visit (prenatal)
ICDDX	V22.2	Pregnant state, incidental
CPT	0501F	Prenatal flow sheet documented in medical record by first prenatal visit (documentation includes at minimum blood pressure, weight, urine protein, uterine size, fetal heart tones, and estimated date of delivery)
ICDDX	V22.2	Pregnant state, incidental
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
ICDDX	V22.2	Pregnant state, incidental
ICDDX	648.83	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication

ICDDX – *International Classification of Disease, 9th revision, Clinical Modification* (ICD-9-CM) diagnoses; CPT – Current Procedural Terminology.

eTable 6. Top ten variables that most strongly predicted glyburide exposure selected by the high-dimensional propensity score algorithm from data partner 11.

Code Type	Code	Concept
ICDDX	648.80	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable
ICDDX	648.80	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable
ICDDX	V22.1	Supervision of other normal pregnancy
ICDDX	V22.1	Supervision of other normal pregnancy
ICDDX	648.80	Abnormal glucose tolerance of mother, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable
ICDDX	V22.1	Supervision of other normal pregnancy
HCPCS	J2790	Injection, rho d immune globulin, human, full dose, 300 micrograms (1500 i.u.)
ICDPX	7534	Other fetal monitoring
HCPCS	J3490	Unclassified drugs
HCPCS	J0702	Injection, betamethasone acetate 3mg and betamethasone sodium phosphate 3mg

ICDDX – *International Classification of Disease, 9th revision, Clinical Modification* (ICD-9-CM) diagnoses; ICDPX – *International Classification of Disease, 9th edition* (ICD-9) procedures; HCPCS – Healthcare Common Procedure Coding System procedures.

eTable 7. Incidence rates and hazard ratios of emergency department visits for hypoglycemia.

Exposure	New users [a]	Person Years at risk	Serious hypoglycemia events	Incidence rate per 1,000 person years	Hazard Ratio (95% CI)
Data from 13 Data Partners					
Unmatched [b]					
Glyburide	199,019	90,306	325	3.6	1.30 (1.13, 1.50)
Glipizide	380,869	247,580	912	3.7	
Predefined covariates - Unconditional model [c]					
Glyburide	174,131	83,640	309	3.7	1.62 (1.51, 2.38)
Glipizide	174,132	100,084	216	2.2	
Predefined covariates – Conditional model [d]					
Glyburide	174,131	39,151	218	5.6	1.90 (1.51, 2.38)
Glipizide	174,132	39,152	115	2.9	
Data from 5 Data Partners in which the hdPS model converged and completed without errors					
Unmatched [b]					
Glyburide	139,449	58,391	216	3.7	1.61 (1.33,1.95)
Glipizide	182,496	95,482	205	2.1	
Predefined covariates - Unconditional model [c]					
Glyburide	120,687	53,640	202	3.8	1.76 (1.41, 2.20)
Glipizide	120,688	61,404	126	2.1	
Predefined covariates – Conditional model [d]					
Glyburide	120,687	24,733	138	5.6	2.09 (1.56, 2.80)
Glipizide	120,688	24,733	66	2.7	
hdPS – Unconditional model [c]					
Glyburide	117,271	53,120	199	3.7	1.93 (1.54, 2.44)
Glipizide	117,273	62,638	115	1.8	
hdPS – Conditional model [d]					
Glyburide	117,271	24,690	125	5.1	1.89 (1.41, 2.55)

Glipizide	117,273	24,691	66	2.7	
Predefined covariates and hdPS – Unconditional model [c]					
Glyburide	116,929	52,995	193	3.6	1.69 (1.35, 2.12)
Glipizide	116,930	61,780	127	2.1	
Predefined covariates and hdPS – Conditional model [d]					
Glyburide	116,929	24,406	122	5.0	1.94 (1.43, 2.62)
Glipizide	116,930	24,406	63	2.6	

hdPS – High dimensional propensity score; SD – Standard deviation.

[a] Please note, one Data Partner removed a small number of users that moved to administrative services only plans. Information from these users is included in Tables 1 and 2, but removed from subsequent tables.

[b] Please note, all models were stratified by Data Partner.

[c] The conditional models were stratified by the matched pair.

[d] The unconditional models were not stratified by the matched pair.