SUPPLEMENTARY DATA

Supplementary Appendix 1. Antidiabetic Drug Classifications Based on Published Standards of Care [8,9]

CVD drugs	Beneficial agents	Albiglutide, canagliflozin, empagliflozin, liraglutide, semaglutide[*]
	Neutral	Alogliptin, exenatide, lixisenatide,[*,†] nonbasal insulin, pioglitazone, rosiglitazone, saxagliptin, sitagliptin
	No position (treat as neutral)	Acarbose, bromocriptine, colesevelam, dapagliflozin, dulaglutide, ertugliflozin, linagliptin, miglitol, pramlintide
	Suboptimal	Gliclazide,[*,‡] glimepiride, glipizide, glyburide, insulin glargine (Lantus, Toujeo, Basaglar), insulin detemir (Levemir), insulin degludec (Tresiba),[*,†] insulin isophane, insulin NPH (Humulin, Novolin), nateglinide, repaglinide
Weight drugs	Beneficial agents	Canagliflozin, dapagliflozin, dulaglutide, empagliflozin, ertugliflozin,[*] exenatide, liraglutide, lixisenatide,[*,†] semaglutide[*]
	Neutral	Alogliptin, linagliptin, saxagliptin, sitagliptin
	No position (treat as neutral)	Acarbose, bromocriptine, colesevelam, miglitol,

		nateglinide, pramlintide, repaglinide
	Suboptimal (weight gain)	Gliclazide [*,‡] glimepiride, glipizide, glyburide, insulin, pioglitazone, rosiglitazone

[*] Denotes a drug that was included on the list but did not appear in the file.
[†] Indicates a drug with no code in NAMCS, despite launch in 2016.
[‡] No NAMCS code because it is no longer available in the United States.
CVD=cardiovascular disease; NAMCS = National Ambulatory Medical Care Survey.

Supplementary Appendix 2. Charlson Comorbidity Index[*] and Additional Study Diagnoses

Condition	CCI Weight	Method/ICD-9	Method/ICD-10
Used in CCI			
AMI	1	410, 412	I21, I22, I23, I252
CHF	1	Chronic condition indicator	Chronic condition indicator
PAD/PVD	1	443.9 Peripheral vascular disease, unspecified	I73.9 Peripheral vascular disease, unspecified
CVA (CEBVD, TIA)	1	Chronic condition indicator and diagnosis code; e-Appendix 3	Chronic condition indicator and diagnosis code; e-Appendix 3
Dementia	1	Chronic condition indicator for Alzheimers/dementia	Chronic condition indicator for Alzheimers/dementia
Pulmonary disease	1	490, 491, 492, 493, 494, 495, 496, 500, 501, 502, 503, 504, 505 or chronic condition indicator for asthma or COPD	J40, J41, J42, J43, J44, J45, J46, J47, J60, J61, J62, J63, J64, J65, J66, J67 or chronic condition indicator for asthma or COPD
Connective tissue disorder/rheumatologic disease	1	5171, 7100, 7101, 7104, 7140, 7141, 7142, 71481, 725	M05, M06, M32, M332, M34, M353
Peptic ulcer	1	531, 532, 533, 534	K25, K26, K27, K28
Diabetes that is not controlled by diet, or diabetes *and no* complications	1	All have diabetes by design, code yes if any drug and no complications listed below	All have diabetes by design, code yes if any drug and no complications listed below
Diabetes complications	2	2504, 2505, 2506	E102, E112, E132, E142 E103, E113, E133, E143 E104, E114, E134, E144
Paraplegia	2	342, 3441	G041, G81, G822
Renal disease	2	Chronic condition indicators of CKD or ESRD and diagnosis codes: 582, 5830, 5831, 5832, 5834, 5836, 5837, 585, 586, 588	Chronic condition indicators of CKD or ESRD and diagnosis codes: N01, N03, N052, N053, N054, N055, N056, N072, N073, N074, N18, N19, N25
Cancer	2	Chronic condition indicator for cancer *and not* metastatic	Chronic condition indicator for cancer *and not* metastatic
Metastatic cancer	6	196, 197, 198, 1990, 1991	C77, C78, C79, C7B[†]
Liver disease (mild)	1	5712, 5714, 5715, 5716 *and not* severe	K702, K703, K717, K73, K740, K742, K743, K744, K745, K746 *and not* severe
Severe liver disease	3	5722, 5723, 5724, 5728	K721,K729, K766, K767
HIV	6	042	B20
Additional indicators			
ASCVD	None	Medical condition codes for CAD and CEBVD, verified against diagnoses; **plus** diagnosis codes for PAD and other ASCVD	Medical condition codes for CAD and CEBVD, verified against diagnoses; **plus** diagnosis codes for PAD and other ASCVD

Other ASCVD	None	440.2 Atherosclerosis of native arteries of the extremities 440.3 Atherosclerosis of bypass graft of the extremities 440.4 Chronic total occlusion of artery of the extremities 440.8 Atherosclerosis of other specified arteries 440.9 Generalized and unspecified atherosclerosis V4581 Aortocoronary bypass status V4582 PTCA status	I70.2 Atherosclerosis of native arteries of the extremities I70.3 Atherosclerosis of unspecified type of bypass graft(s) of the extremities I70.4 Atherosclerosis of autologous vein bypass graft(s) of the extremities I70.5 Atherosclerosis of nonautologous biological bypass graft(s) of the extremities I70.6 Atherosclerosis of nonbiological bypass graft(s) of the extremities I70.7 Atherosclerosis of other type of bypass graft(s) of the extremities I70.8 Atherosclerosis of other arteries I70.9 Other and unspecified atherosclerosis Z951 Presence of bypass graft Z955 Presence of angioplasty graft
Retinopathy	None	362.0 Diabetic retinopathy	Diabetes mellitus with ophthalmic complications E08.3 E09.3 E10.3 E11.3 E13.3
Obesity	None	Body mass index >30 kilograms per squared meters body surface area; obesity indicator for patients with missing body mass index	Body mass index >30 kilograms per squared meters body surface area; obesity indicator for patients with missing body mass index

[*] Based on original index weights as reported by Quan et al. [17] [†] Updated based on code review with removal of ICD-9 and ICD-10 codes that are no longer in use.

ASCVD=atherosclerotic cardiovascular disease; AMI=acute myocardial infarction; CAD=coronary artery disease; CCI=Charlson comorbidity index; CEBVD=cerebrovascular disease; CHF=congestive heart failure; CVA=cerebral vascular accident; GFR=glomerular filtration ratio; HIV=human immunodeficiency virus; ICD=International Classification of Diseases; PAD=peripheral arterial disease; PVD=peripheral vascular disease; TIA=transient ischemic attack.