

SUPPLEMENTARY MATERIALS

Social determinants of health and adult influenza vaccination: a nationwide claims analysis

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Supplementary Table 1. Codes to Determine Influenza Vaccine Uptake

Supplementary Table 2. Diagnosis Codes to Determine Immunocompetency Status

Supplementary Table 1. Codes to Determine Influenza Vaccine Uptake

Type of code	Codes
National Drug Code	66019011010, 66019010701, 66019010810, 66019010910, 66019020010, 49281065050, 33332051925, 66521020010, 33332051901, 49281065070, 49281065090, 49281065010, 49281065025, 33332062910, 66521020002, 49281064015, 49281038965, 49281039165, 49281039765, 49281039565, 49281039965, 49281038765, 49281039365, 49281040165, 49281001450, 49281011325, 49281001110, 49281001150, 49281011125, 49281001350, 70461012002, 66521011502, 58160088052, 58160087952, 33332001401, 49281001010, 33332001301, 49281001025, 49281001310, 49281001250, 49281001210, 49281011225, 49281001050, 66521011402, 33332001001, 19515085052, 58160088352, 70461011912, 33332001501, 66521011302, 66521011602, 33332001601, 58160088352, 33332001701, 66521011802, 66521011202, 58160088152, 66521011702, 66521011210, 33332011310, 33332011610, 66521011310, 33332011410, 66521011710, 49281038815, 19515089307, 66521011610, 49281039215, 19515089307, 33332011510, 49281038615, 70461011911, 19515088907, 19515089007, 66521011810, 49281039615, 33332011710, 70461012010, 19515084511, 33332011010, 66521011410, 49281039415, 49281039015, 66521011510, 49281070955, 49281070755, 49281070555, 49281070355, 66019030301, 66019030410, 66019030010, 66019030210, 66019030110, 49281041610, 19515090152, 49281041410, 58160090152, 58160090752, 49281041510, 33332031601, 19515090852, 33332031701, 19515089452, 19515091252, 49281041650, 58160090352, 49281041310, 58160090052, 49281041350, 49281041450, 49281041750, 49281041710, 58160090552, 62577061401, 62577061301, 63851061301, 63851061201, 62577061301, 70461061401, 42874001510, 42874001610, 42874001310, 42874001710, 42874001210, 42874001410, 49281062715, 33332041610, 19515089511, 49281062115, 33332041710, 19515089611, 19515090311, 19515089811, 49281062515, 19515089111, 58160080815, 58160080815, 49281051725, 49281051425, 49281051325, 49281051625, 49281071040, 49281071240, 70461000101, 66521000001, 70461000201, 70461020101, 70461020001, 42874011610, 42874011710, 70461020002, 70461030110
Current Procedural Terminology (CPT®) / Healthcare Common Procedure Coding System (HCPCS)	90630, 90674, 90682, 90685, 90686, 90687, 90688, 90756, 90656, 90658, 90673, Q2034, Q2035, Q2036, Q2037, Q2038, Q2039

Supplementary Table 2. Diagnosis Codes to Determine Immunocompetency Status

Category	Description	ICD9	ICD10
Hematologic malignancy	Lymphomas	200.xx	C83.xx
	Hodgkin's Disease	201.x	C81.xx
	Lymphomas	202.x	C82.xx, C84.xx, C96.xx, C91.xx, C85.xx, C86.xx
	Multiple myeloma	203.x	C88.xx, C90.xx
	Leukemia	204.x-208.x	C91.xx, C92.xx, C93.xx, C94.xx, C95.xx, D45
	Malignant carcinoid tumors of small intestine, appendix, large intestine, rectum, other sites; malignant poorly differentiated neuroendocrine tumors; secondary neuroendocrine tumors	209.x	C4A.xx, C7A.xx, C7B.xx, D3A.xx
	Polycythemia vera, histiocytic and mast cells, plasma cells, other lymphatic and hemotopoietic tissues	238.4x-238.7	D45, D46, D47
Solid tumor malignancy	Malignant neoplasms	140.x-175.x	C00-C26, C30-C34, C37-C41, C43-C58, C60-C75, C76-C90
	Secondary and unspecified malignancies	196.x-199.x	C77, C78, C79, C80, C45
	Neoplasms of uncertain behavior	235.x-239.x	C88, C94, D37, D38, D39, D40, D41, D42, D43, D44, D48, D49, Q85
	Malignant pleural effusion	511.81	J91.0
	Poisoning by antineoplastic antibiotics	960.7	T45.1x1
	Poisoning by antineoplastic/immunosuppressive agent	963.1	T45.1x2, T45.1x3, T45.1x4
	Extravasation of vesicant chemotherapy	999.81	T80.810
	Encounter for antineoplastic chemotherapy and immunotherapy	V58.1x	Z51.1x
	Convalescence and palliative care following chemotherapy	V66.2	Z51.89
	Cancer chemotherapy follow-up	V67.2	Z08, Z09
	Adverse effect – antineoplastic antibiotics	E930.7	T45.1x5
Adverse effect – antineoplastic/immunosuppressive	E933.1	T45.1x5	
Human immunodeficiency virus (HIV)	Human Immunodeficiency Virus Infection	042	B20
	Asymptomatic human immunodeficiency virus infection	V08	Z21

	Human Immunodeficiency Virus, type 2	079.53	B97.35
Chronic renal failure	Anemia in chronic renal disease	285.21	D63.1
	Hypertensive chronic kidney disease malignant or benign or unspecified, with kidney disease stage V or ESRD	403.01	I12.0
	Hypertensive chronic kidney disease malignant or benign or unspecified, with kidney disease stage V or ESRD	403.11	I12.0
	Hypertensive chronic kidney disease malignant or benign or unspecified, with kidney disease stage V or ESRD	403.91	I12.0
	Hypertensive heart and kidney disease, malignant or benign or unspecified, with kidney disease stage V or ESRD	404.02	I13.11
	Hypertensive heart and kidney disease, malignant or benign or unspecified, with kidney disease stage V or ESRD	404.03	I13.2
	Hypertensive heart and kidney disease, malignant or benign or unspecified, with kidney disease stage V or ESRD	404.12	I13.11
	Hypertensive heart and kidney disease, malignant or benign or unspecified, with kidney disease stage V or ESRD	404.13	I13.2
	Hypertensive heart and kidney disease, malignant or benign or unspecified, with kidney disease stage V or ESRD	404.92	I13.11
	Hypertensive heart and kidney disease, malignant or benign or unspecified, with kidney disease stage V or ESRD	404.93	I13.2
	Hypotension of hemodialysis	458.21	I95.3
	Chronic glomerulonephritis, Nephritis and nephropathy, not specified as acute or chronic	582.x	N03.x, N08
	Chronic glomerulonephritis, Nephritis and nephropathy, not specified as acute or chronic	583.x	E09.21, E09.22, E09.29, M32.14, M32.15, M35.04, N05.x, N06.x, N07.x, N14.x, N15.0, N15.8, N15.9, N16, N17.1, N17.2
	Chronic kidney disease, stage V	585.5	N18.5
	Chronic kidney disease, ESRD	585.6	N18.6
	Renal failure, unspecified	586	N19
Renal osteodystrophy	588.0	N25.0	

	Other specified or unspecified disorders resulting from impaired renal function	588.8x	N25.81, N25.89
	Other specified or unspecified disorders resulting from impaired renal function	588.9	N25.9
	Vesicoureteral reflux with reflux nephropathy, bilateral or NOS	593.71-593.73	N13.721, N13.722, N13.731, N13.732
	Cloudy hemodialysis (peritoneal) dialysis effluent	792.5	R88.0
	Mechanical complication due to peritoneal dialysis catheter	996.56	T85.611x, T85.621x, T85.631x, T85.691x
	Other complications due to renal dialysis device, implant, graft	996.73	T82.818x, T82.828x, T82.838x, T82.848x, T82.858x, T82.868x, T82.898x
	Renal dialysis status	V45.1x	Z91.15, Z99.2
	Encounter for dialysis and dialysis catheter care	V56.x	Z49.x
	Kidney dialysis (cause of abnormal reaction or later complication)	E879.1	Y84.1
	Venous catheterization for renal dialysis	38.95	05HY03Z, 05HY33Z, 05HY43Z, 06HY03Z, 06HY33Z
	Arteriovenostomy for renal dialysis	39.27	'03150AV' '03130ZD' '03140ZD' '03150ZD' '03160ZD' '03170ZD' '03180ZD' '03190ZF' '031A0ZF' '031B0ZF' '031C0ZF'
	Revision of arteriovenous shunt for renal dialysis	39.42	'031209D' '031209F' '03120AD' '03120AF' '03120JD' '03120JF' '03120KD' '03120KF' '03120ZD' '03120JF' '03120ZF' '031309D' '031309F' '03130AD' '03130AF' '03130JD' '03130JF' '03130KD' '03130KF' '03130ZD' '03130ZF' '031409D' '031409F' '03140AD' '03140AF' '03140JD' '03140JF' '03140KD' '03140KF' '03140ZD' '031509D' '031509F' '03150AD' '03150AF' '03150JD' '03150JF' '03150KD' '03150KF' '03150ZD' '03150ZF' '031609D' '031609F' '03160AD' '03160AF' '03160JD' '03160JF' '03160KD' '03160KF' '03160ZD' '03160ZF'

			'031709D' '031709F' '03170AD' '03170AF' '03170JD' '03170JF' '03170KD' '03170KF' '03170ZD' '03170ZF' '031809D' '031809F' '03180AD' '03180AF' '03180JD' '03180JF' '03180KD' '03180KF' '03180ZD' '03180ZF' '031909F' '03190AF' '03190JF' '03190KF' '03190ZF' '031A09F' '031A0AF' '031A0JF' '031A0KF' '031A0ZF' '031B0KF' '031B0ZF' '031C09F' '031C0AF' '031C0JF' '031C0KF' '031C0ZF'
	Hemodialysis	39.95	5A1D00Z' '5A1D60Z'
	Peritoneal dialysis	54.98	3E1M39Z'
Nephrotic syndrome	Nephrotic syndrome	581.x	N04.x
Mycobacteria	Diseases due to other mycobacteria	031.x	A31.x
Actinomycotic Infection	Actinomycotic infection	039.x	A42.x
Opportunistic mycoses	Opportunistic mycoses	118	B48.8
Toxoplasmosis	Toxoplasmosis	130.x	B58.x
Immune mechanism	Disorders involving the immune mechanism	279.x	D80.x-D89.x
Aplastic anemia	Aplastic anemia and other bone marrow failure syndromes	284.x	D60.x, D61.x
Neutropenia	Neutropenia	288.0x	D70.x
Neutrophils	Functional disorders of polymorphonuclear neutrophils	288.1	D71
Genetic anomaly of leukocytes	Genetic anomalies of leukocytes	288.2	D72.0
Other selected conditions	Other specified disease of white blood cells	288.8	D72.89
	Unspecified disease of white blood cells	288.9	D72.9
Organ transplant	Organs replaced by transplant	V42.0	Z48.2x, Z94.x
	Organs replaced by transplant	V42.1	Z48.2x, Z94.x
	Organs replaced by transplant	V42.2	Z48.2x, Z94.x
	Organs replaced by transplant	V42.6	Z48.2x, Z94.x
	Organs replaced by transplant	V42.7	Z48.2x, Z94.x
	Organs replaced by transplant	V42.81-V42.84	Z48.2x, Z94.x
	Organs replaced by transplant	V42.89	Z48.2x, Z94.x
	Organs replaced by transplant	V42.9	Z48.2x, Z94.x

Complication of transplantation	996.8x	T86.x
Lung transplant	33.5x	0BYXXXX
Combined heart-lung transplant	33.6	02YA0Z0' '02YA0Z1' '02YA0Z2' '0BYM0Z0' '0BYM0Z1' '0BYM0Z2'
Heart transplant	37.5x	02YA0Z0' '02YA0Z1' '02YA0Z2'
Bone marrow or hematopoietic stem cell transplant	41.0x	302XXXX
Transplant of spleen	47.94	07YPXXX
Transplant of intestine	46.97	0DYEXXX, 0DY8XXX
Liver transplant	50.5x	0FY0XXX
Transplant of pancreas	52.80	0FYGXXX
Transplant of pancreas	52.82	0FYGXXX
Transplant of pancreas	52.83	0FYGXXX
Allotransplantation of cells of islets of Langerhans (pancreas, not otherwise specified)	52.85	3E030U1' '3E033U1' '3E0J3U1' '3E0J7U1' '3E0J8U1'
Allotransplantation of cells of islets of Langerhans (pancreas, not otherwise specified)	52.86	3E030U0' '3E033U0' '3E0J3U0' '3E0J7U0' '3E0J8U0'
Kidney transplant	55.69	0TY1XXX, 0TY0XXX