

**Table S1.** List of diagnostic and procedural codes utilized using the International Classification of Disease (ICD)-9-CM for Kids' Inpatient Database 2003, 2006, 2009, and 2012 and ICD-10-CM for Kids' Inpatient Database 2016.

**ICD codes:**

<b>Diagnosis</b>	<b>ICD 9</b>	<b>ICD 10</b>
Acute pancreatitis	577.0	K85*
Chronic pancreatitis	577.1	K86*
Pseudocyst of pancreas	5772	K86.3
Cholelithiasis/choledocholithiasis	574*	K80.*
Cholangitis	576.1	K83.*
Other biliary disease	576.2, 576.8, 782.4, 576.9	K83.1, K83.8, K83.9, R17
IBD	555*, 556*	K50*, K51*
Cystic Fibrosis	277.0*	E84*
Hypertriglyceridemia	272.1	E78.1
Hypercalcemia	275.42	E83.52
Abdominal trauma	863*, 864*, 865*, 866*, 867*, 868*, 869*	S36 * to S39*
Anomalies of pancreas	751.7	Q45.0 to Q45.3
DKA	250.1*	E081, E0811, E091, E0911, E101, E1011, E111, E1111
SLE	695.4, 710.0	M32*, L93*
Solid organ transplant	996.8*, V42 to V42.7, V42.84, , V 42.83, Z94.83, V42.9	T86.1*, T86.2*, T86.3*, T86.4*
Alcohol related	291*, 303*, 305*, 760.71, 980.0, 357.5, 425.5, 535.30, 535.31, 571*	G62.1, G31.2, T510X1A, T510X2A, T510X3A, T510X4A, F10*, Y90*, K70*, Z714*, K29.0, K29.1, K29.2.
Pulmonary embolism	415.1*	I26*
Deep Vein thrombosis	453.4*, 453.82, 453.82	I824*, I826*
Use of Vasopressor <sup>#</sup>	0017	3E030XZ, 3E033XZ, 3E040XZ, 3E043XZ, 3E050XZ, 3E053XZ, 3E060XZ, 3E063XZ
Intubation and mechanical ventilation <sup>#</sup>	93.90, 96.0*, 96.7*	5A09357, 5A09457, 5A09557, 09HN7BZ, 0CHY7BZ, 0DH57BZ, 0NH17EZ, 5A1935Z, 5A1945Z, 5A1955Z, 0BH07DZ
Central venous catheter <sup>#</sup>	38.93, 86.07	0JH63XZ, 0JHD3XZ, 0JHF3WZ, 0JHM3XZ, 0JHL3XZ
Common Bile duct exploration <sup>#</sup>	51.02, 51.03, 51.04, 41.32, 51.36, 51.37, 51.39, 51.41, 51.43, 51.51, 51.59, 51.63, 51.64, 51.69, 51.71, 51.79	0FT90ZZ, 0FT50ZZ, 0FT60ZZ, 0FT70ZZ, 0FT80ZZ, 0F550ZZ, 0F560ZZ, 0F570ZZ, 0F580ZZ, 0FB50ZZ, 0FB60ZZ, 0FB70ZZ, 0FB80ZZ, 0FC90ZZ, 0F9900Z, 0F9900Z, 0F990ZZ, 0F9940Z, 0F9400Z, 0FC400Z, 0FQ97ZZ, 0FQ90ZZ, 0F150D3, 0F150DB, 0F150Z3, 0F150ZB, 0F160D3, 0F160DB, 0F160Z3, 0F160ZB, 0F170D3, 0F170DB, 0F170Z3, 0F170ZB, 0F180D3, 0F180DB, 0F180Z3, 0F180ZB, 0F190D3, 0F190DB, 0F190Z3, 0F190ZB, 0F140D3, 0F140DB, 0F140Z3, 0F140ZB,
Cholecystectomy <sup>#</sup>	51.2*	0FB40ZX, 0FB40ZZ, 0FB43ZX, 0FB43ZZ, 0FB48ZX, 0FB48ZZ, 0FB44ZX, 0FB44ZZ,
Pancreatectomy <sup>#</sup>	52.22, 52.95, 52.96 52.99	0F7D0ZZ, 0FQD0ZZ, 0FQG0ZZ, 0F1D0D3, 0F1D0DB, 0F1D0Z3, 0F1D0ZB, 0F1G0D3, 0F1G0ZB, 0F1G0ZZ, 0FTG0ZZ, 0F1G0ZC, 0FTG0ZZ, 0FBG0ZZ, 0F9G00Z, 0FCD0ZZ, 0FCD8ZZ, 0F9D0ZX, 0F9D8ZZ
ERCP <sup>#</sup>	51.83, 51.84, 51.85, 51.86, 51.87, 51.88, 51.10, 51.11, 51.14, 52.13, 52.93, 52.94, 52.98, 97.05.	0FQC7ZZ, 0FQC8ZZ, 0F758ZZ, 0F768ZZ, 0F778ZZ, 0F7C8DZ, 0F7C8ZZ, 0F958ZZ, 0F968ZZ, 0F978ZZ, 0F988ZZ, 0F998ZZ, 0F9C8ZZ, 0F9D8ZZ, 0F9C80Z, 0F9980Z, 0F758DZ, 0F768DZ, 0F778DZ, 0F788DZ, 0F798DZ, 0FHB4DZ, 0FHB8DZ, 0FC58ZZ, 0FC68ZZ, 0FC78ZZ, 0FC98ZZ, 0FC88ZZ, 0FCC8ZZ, 0FF48ZZ, 0FF58ZZ, 0FF68ZZ, 0FF78ZZ, 0FF88ZZ, 0FF98ZZ, 0FFC8ZZ, 0F959ZX, 0F968ZX, 0F978ZX, 0F988ZX, 0F998ZX, 0F9C8ZX, 0FB48ZX, 0FB58ZX, 0FB68ZX, 0FB78ZX, 0FB88ZX, 0FB98ZX, 0FBC8ZX, 0FHD8DZ, 0FCD8ZZ, 0F7D8ZZ, 0F758DZ, 0F778DZ, 0F798DZ, 0F788DZ, 0F7D8DZ, 0FHB8DZ, 0FPB8DZ, 0FPD8DZ
Percutaneous biliary procedures <sup>#</sup>	51.01, 51.96, 51.98	0F943ZZ, 0FC93ZZ, 0F753Dz, 0F753DZ, 0F63ZZ, 0F783DZ, 0F783ZZ, 0F793ZZ, 0F793DZ, 0F993ZZ, 0F994ZZ, 0FC53ZZ, 0FC54ZZ, 0FC64ZZ, 0FC84ZZ, 0FC84ZZ, 0FC83ZZ, 0FC63ZZ.
Acute respiratory failure	518.0, 518.81, 518.82, 518.84	J96.0*, J96.2*, J98.1*
Acute Renal Failure	584.*	N17*
Systemic inflammatory response syndrome	995.94	R65.10, R65.11
Obesity	278.00, 278.01, 278.03, V85.3, V85.4, V85.54	E66.0, E66.1, E66.2, E66.8, E66.9, Z68.3, Z68.4, Z68.54
Undernutrition	V85.51, V85.0, 260, 261, 262, 263	Z68.51, Z68.1, E40, E41, E42, E43, E44, E45, E46

<sup>#</sup> Procedure codes.

**Table S2.** Multiple logistic regression model of various factors associated with severe acute pancreatitis.

Parameters	OR (Confidence Interval)	P Value
Age	1.02 (1.01 to 1.03)	<0.001
Female vs Male	0.68 (0.61 to 0.76)	<0.001
Insurance		
Public	Reference	
Private	0.84 (0.74 to 0.94)	<0.001
Others/Self Pay	0.80 (0.68 to 0.96)	<0.001
Race		
Caucasian	Reference	
African American	1.15 (0.96 to 1.37)	0.10
Hispanics	0.96 (0.83 to 1.10)	0.60
Others	0.94 (0.81 to 1.08)	0.39
Location/Teaching status		
Rural	Reference	
Urban Non-teaching	2.08 (1.58 to 2.73)	<0.001
Urban Teaching	2.72 (2.09 to 3.55)	<0.001
Cholangitis	2.56 (1.64 to 4.02)	<0.001
Cholelithiasis	0.91 (0.79 to 1.05)	0.23
Other Biliary Disease	0.87 (0.64 to 1.16)	0.35
Hypertriglyceridemia	1.95 (1.55 to 2.44)	<0.001
Hypercalcemia	5.26 (3.31 to 8.36)	<0.001
Diabetic Ketoacidosis	3.57 (2.85 to 4.48)	<0.001
Systemic Lupus Erythematosus	4.98 (3.4 to 7.30)	<0.001
Cystic fibrosis	0.69 (0.34 to 1.42)	0.32
Inflammatory Bowel Disease	0.28 (0.15 to 0.52)	<0.001
Malignancy	2.46 (1.56 to 3.76)	<0.001
Organ transplant	2.42 (1.56 to 3.76)	<0.001
Alcohol related	1.03 (0.80 to 1.33)	0.79
Nutritional Status		
Control population	Reference	
undernutrition	2.55 (2.03 to 3.20)	<0.001
Obesity	1.62 (1.39 to 1.89)	<0.001

**Table S3.** Multiple linear regression model of various factors associated with length of stay and total hospitalization costs.

Parameters	Length of stay (days)		Total hospitalization costs (USD)	
	Days (CI)	P Value	USD (CI)	P value
Age	-0.04 (-0.06 to -0.03)	<0.001	-99 (-151 to -47)	<0.001
Female vs Male	0.02 (-0.01 to 0.15)	0.74	-56 (-522 to 409)	0.81
Insurance				
Private	Ref		Ref	
Public	0.29 (0.14 to 0.44)	<0.001	1138 (641 to 1635)	<0.001
Others/Self Pay	-0.07 (-0.28 to 0.13)	0.47	-77 (-768 to 614)	0.82
Race				
Caucasian	Ref		Ref	
African American	0.10 (-0.14 to 0.35)	0.42	684 (-153 to 1523)	0.10
Hispanics	0.08 (-0.11 to 0.28)	0.41	1485 (816 to 2154)	<0.001
Others	-0.06 (-0.24 to 0.10)	0.44	378 (-194 to 951)	0.19
Location/Teaching status				
Rural	Ref			
Urban Non-teaching		0.043	734 (534 to 1043)	<0.001
Urban Teaching	1.21 (1.03 to 1.45)	<0.001	2976 (1346 to 4412)	<0.001
Cholangitis	2.18 (1.44 to 2.93)	<0.001	5355 (2766 to 7943)	<0.001
Cholelithiasis	0.68 (0.52 to 0.84)	<0.001	3609 (3041 to 4176)	<0.001
Other Biliary Disease	1.06 (0.71 to 1.41)	<0.001	2545 (1325 to 3765)	<0.001
Hypertriglyceridemia	0.76 (0.37 to 1.15)	<0.001	1643 (297 to 2989)	<0.001
Hypercalcemia	1.65 (0.58 to 2.73)	0.03	5300 (1614 to 8986)	<0.001
Diabetic Ketoacidosis	1.02 (0.58 to 1.46)	<0.001	3031 (1475 to 4588)	<0.001
Systemic Lupus Erythematosus	4.97 (4.12 to 5.83)	<0.001	9886 (6871 to 12901)	<0.001
Cystic fibrosis	0.11 (-0.58 to 0.81)	0.74	789 (-1628 to 3207)	<0.001
Inflammatory Bowel Disease	0.01 (-0.4 to 0.44)	0.94	547 (-962 to 2058)	<0.001
Malignancy	5.14 (4.73 to 5.55)	<0.001	22593 (21162 to 24042)	<0.001
Organ transplant	0.46 (-0.34 to 1.28)	0.26	3783 (890 to 6675)	<0.001
Alcohol related	0.09 (-0.21 to 0.39)	<0.001	63 (-993 to 1120)	<0.001
Nutritional Status				
Control population	Reference		Reference	
undernutrition	6.12 (5.67 to 6.57)	<0.001	15,919 (14317 to 17520)	<0.001
Obesity	0.53 (0.32 to 0.73)	<0.001	1,952 (1237 to 2667)	<0.001