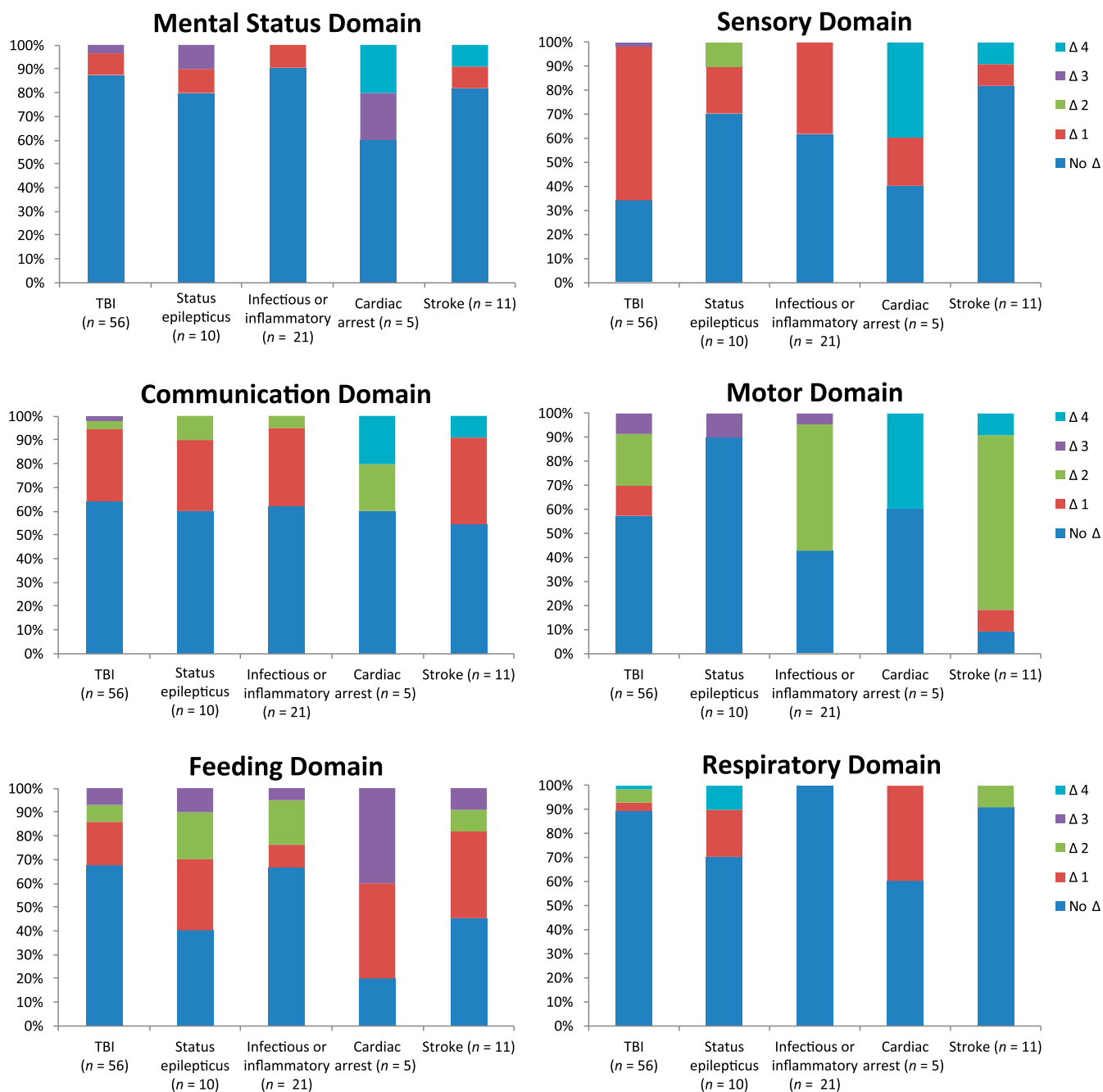


Supplemental Information



SUPPLEMENTAL FIGURE 3 Distribution of FSS domain changes from baseline. Charts show the distribution of changes in FSS domain scores. Columns represent the proportion of patients in each diagnosis category with new disability at discharge. Δ, change from baseline the score in each domain.

SUPPLEMENTAL TABLE 4 Distribution of Preadmission Chronic Condition Categories by Diagnosis

Chronic Condition Category	All Patients (<i>N</i> = 325), %	Trauma (<i>n</i> = 154), %	Status Epilepticus (<i>n</i> = 71), %	Infectious or Inflammatory (<i>n</i> = 40), %	Cardiac Arrest (<i>n</i> = 37), %	Stroke (<i>n</i> = 23), %
No previous chronic condition	229 (70)	138 (90)	20 (28)	35 (88)	24 (65)	12 (52)
Cardiac	10 (3)	3 (2)	3 (4)	0	3 (8)	1 (4)
Respiratory	11 (3)	1 (1)	7 (10)	0	2 (5)	1 (4)
Hematology-oncology	10 (3)	0	2 (3)	1 (3)	2 (5)	5 (22)
Gastrointestinal	14 (4)	1 (1)	10 (14)	0	1 (3)	2 (9)
Rheumatology	3 (1)	0	1 (1)	0	1 (3)	1 (4)
Metabolic or genetic	16 (5)	3 (2)	7 (10)	2 (5)	4 (11)	0
Neurologic or neuromuscular	57 (18)	5 (4)	45 (63)	2 (5)	1 (3)	4 (17)
Psychiatric	6 (2)	0	1 (3)	1 (3)	4 (11)	0
Endocrine	7 (2)	1 (1)	4 (6)	1 (3)	0	1 (4)
Developmental delay or behavioral disorder	49 (15)	10 (7)	31 (44)	2 (5)	4 (11)	2 (9)

Multiple preadmission conditions were present in some patients.

SUPPLEMENTAL TABLE 5 Characteristics by New Disability Group Among Patients With TBI

	All TBI N = 154	Survival With Baseline Function N = 95	Survival With Any New Disability N = 56	P
Age, y, median (IQR)	5.5 (1.3–11.7)	3.7 (0.7–9.6)	8.1 (2.9–12.7)	.002
White race, n (%)	130 (84)	78 (82)	49 (88)	.49
Hispanic ethnicity, n (%)	19 (12)	12 (13)	6 (11)	.37
Male sex, n (%)	101 (66)	62 (65)	37 (66)	>.99
Medicaid insurance, n (%)	66 (43)	44 (46)	21 (38)	.31
Preadmission chronic condition, ^a n (%)	16 (10)	9 (10)	7 (12)	.59
Neurologic or neuromuscular	6 (4)	4 (4)	2 (4)	>.99
Developmental	10 (7)	4 (4)	6 (11)	.17
Metabolic or genetic	3 (2)	3 (3)	0	.29
Baseline FSS, median (IQR); maximum	6 (6–6); 14	6 (6–6); 11	6 (6–6); 14	.86
Admission Glasgow Coma Scale, median (IQR)	15 (11–15)	15 (15–15)	11 (7.5–15)	<.001
Severity group (Glasgow Coma Scale), n (%)				<.001
Mild complicated (13–15)	105 (68)	81 (85)	24 (43)	
Moderate (9–12)	24 (16)	9 (10)	14 (25)	
Severe (3–8)	25 (16)	5 (5)	18 (32)	
Injury severity score, median (IQR)	16 (10–25)	10 (10–17)	21 (14–27)	<.001
Abbreviated injury scale, median (IQR)				
Head and neck (n = 154)	3 (3–4)	3 (3–4)	4 (3–5)	.01
Face (n = 28)	1 (1–2)	1 (1–1)	1 (1–2)	.22
Abdomen, pelvis (n = 11)	3 (2–3)	2.5 (2–3)	3 (2–3.5)	.65
Extremities (n = 17)	2 (2–3)	2 (1.5–2)	2 (2–3)	.24
Chest (n = 28)	3 (2–3)	2.5 (2–3)	3 (2–3)	.59
External (n = 113)	1 (1–1)	1 (1–1)	1 (1–1)	.24
Loss of consciousness, n (%)	57 (37)	19 (20)	35 (63)	<.001
Seizure before admission, n (%)	22 (14)	9 (10)	13 (23)	.03
Seizure during admission, n (%)	10 (7)	1 (1)	8 (14)	.002
Mechanism of injury, n (%)				.004
Motor vehicle occupant	22 (14)	7 (7)	15 (27)	
Fall	67 (44)	50 (53)	17 (30)	
Autopedestrian or autobicycle	13 (8)	5 (5)	8 (14)	
All-terrain vehicle	6 (4)	4 (4)	1 (2)	
Bicycle, skateboard, or scooter	14 (9)	9 (10)	5 (9)	
Other blunt object	26 (17)	14 (15)	10 (18)	
Penetrating	2 (1)	2 (2)	0	
Unknown	4 (3)	4 (4)	0	
Nonaccidental trauma, n (%)	28 (18)	16 (17)	12 (21)	.48
Type of injury, ^b n (%)				
Skull fracture	96 (62)	61 (64)	32 (57)	.39
Subdural	80 (52)	51 (54)	28 (50)	.66
Epidural	35 (23)	25 (26)	9 (16)	.16
Subarachnoid	54 (35)	28 (30)	24 (43)	.10
Contusion	45 (29)	19 (20)	23 (41)	.008
Diffuse axonal injury	14 (9)	3 (3)	11 (20)	.002
Location of injury, ^c n (%)				
Frontal	74 (48)	42 (44)	35 (63)	.03
Parietal	83 (54)	53 (56)	27 (48)	.37

SUPPLEMENTAL TABLE 5 Continued

	All TBI	Survival With Baseline Function	Survival With Any New Disability	P
	N = 154	N = 95	N = 56	
Temporal	51 (33)	26 (27)	22 (39)	.13
Occipital	46 (30)	24 (25)	20 (36)	.17
Cerebellar	9 (6)	5 (5)	4 (7)	.73
Brainstem	4 (3)	1 (1)	3 (5)	.14
Other injuries, ^d n (%)				
None (isolated TBI)	76 (49)	67 (71)	9 (16)	<.001
Thoracic	21 (14)	4 (4)	16 (29)	<.001
Abdominal or pelvic	8 (5)	3 (3)	5 (9)	.15
Extremity fracture	15 (10)	4 (4)	11 (20)	.004
Ocular injury	18 (12)	3 (3)	14 (25)	<.001
Ear injury	12 (8)	3 (3)	9 (16)	.009
Spinal cord injury	6 (4)	1 (1)	5 (9)	.02
Spine fracture or ligament injury	30 (20)	10 (11)	19 (34)	.001
Critical care intervention, ^e n (%)	68 (44)	28 (30)	37 (66)	<.001
Intubation	45 (29)	11 (12)	31 (55)	<.001
Central venous line	20 (13)	0	17 (30)	<.001
Arterial line	27 (18)	3 (3)	22 (39)	<.001
Intracranial pressure monitor	12 (8)	1 (1)	10 (18)	<.001
Neurosurgical intervention	39 (25)	19 (20)	18 (32)	.09
Hemodynamic intervention	11 (7)	0	9 (16)	<.001
Seizure medication infusion	2 (1)	0	2 (4)	.33

Three patients died during hospitalization; 151 survivors were compared by disability groups. Disability groups were compared by using χ^2 tests (with Fisher's exact for cells with $n < 10$) for categorical variables and Mann-Whitney U tests for continuous variables.

^a More than 1 chronic condition was found in 5 patients with the most common categories listed. Conditions in this cohort included congenital heart disease, asthma, type 1 diabetes, cerebral palsy, autism spectrum disorder, epilepsy, trisomy 21, developmental delay requiring intervention, and attention-deficit/hyperactivity disorder.

^b Multiple injury types were present in 103 (67%) patients.

^c Multiple injury locations were seen in 81 (53%) patients.

^d Multiple other injuries occurred in 29 (19%) patients.

^e Multiple critical care interventions occurred in 31 (20%) patients.

SUPPLEMENTAL TABLE 6 Characteristics by New Disability Group Among Patients With Status Epilepticus

	All Status Epilepticus <i>N</i> = 71	Survival With New Disability <i>n</i> = 10	Survival With Baseline Function <i>n</i> = 61	<i>P</i>
Age, y, median (IQR)	3.9 (1.7–8.9)	5.7 (0.7–14.6)	3.9 (2–7.4)	.99
White race, <i>n</i> (%)	53 (75)	7 (70)	46 (75)	.71
Hispanic ethnicity, <i>n</i> (%)	15 (21)	2 (20)	13 (21)	.91
Male sex, <i>n</i> (%)	40 (56)	2 (20)	38 (62)	.02
Medicaid insurance, <i>n</i> (%)	41 (58)	6 (60)	35 (57)	>.99
Preadmission chronic condition, ^a <i>n</i> (%)	51 (72)	10 (100)	41 (67)	.05
Baseline FSS, median (IQR); maximum	6 (6–11); 18	8.5 (6–12); 15	6 (6–10); 18	.35
Critical care intervention, <i>n</i> (%)	34 (48)	9 (90)	30 (49)	.02
Intubation	34 (48)	6 (60)	28 (46)	.50
Central venous line	3 (4)	2 (20)	1 (2)	.05
Arterial line	2 (3)	2 (20)	0	.02
Hemodynamic intervention	1 (1)	1 (10)	0	.14
Cause of seizure, <i>n</i> (%)				.21
Known epilepsy	38 (54)	7 (70)	31 (51)	
Febrile	16 (23)	0	16 (26)	
Congenital malformation	5 (7)	2 (20)	3 (5)	
Metabolic	3 (4)	1 (10)	2 (3)	
Electrolyte abnormality	2 (3)	0	2 (3)	
Other or unknown	7 (10)	0	7 (11)	
Infusion of medication for seizure, <i>n</i> (%)	15 (21)	6 (60)	9 (15)	.004
Seizure during admission, <i>n</i> (%)	31 (44)	8 (80)	23 (38)	.02

Groups were compared by presence or absence of new disability (FSS change ≥ 1) at discharge by using χ^2 tests (with Fisher's exact for cells with expected $n < 10$) for categorical variables and Mann-Whitney *U* tests for continuous variables.

^a More than 1 chronic condition in some patients.

SUPPLEMENTAL TABLE 7 Demographic and Clinical Characteristics by New Disability Group Among Patients With Infectious and Inflammatory Disease

	All	Survival With Baseline Function	Survival With Any New Disability	<i>P</i>
	<i>N</i> = 40	<i>n</i> = 18	<i>n</i> = 21	
Age, y, median (IQR)	6.2 (1.8–12.6)	7.7 (1.3–13.9)	5.6 (2.3–8.4)	.67
White race, <i>n</i> (%)	27 (68)	12 (67)	14 (67)	>.99
Hispanic ethnicity, <i>n</i> (%)	6 (15)	2 (11)	3 (14)	.54
Male sex, <i>n</i> (%)	23 (58)	11 (61)	12 (57)	>.99
Medicaid insurance, <i>n</i> (%)	26 (65)	14 (78)	11 (52)	.18
Preadmission chronic condition, ^a <i>n</i> (%)	5 (13)	2 (11)	2 (10)	>.99
Baseline FSS, median (IQR); maximum	6 (6–6); 8	6 (6–6); 8	6 (6–6); 8	.97
Seizure during admission, <i>n</i> (%)	14 (35)	7 (39)	6 (29)	.52
Infectious diagnosis, <i>n</i> (%)	30 (75)	18 (100)	12 (57)	.002
Bacterial meningitis	13 (33)	7 (39)	6 (29)	
Viral encephalitis	4 (10)	2 (11)	2 (10)	
Abscess or empyema	13 (33)	9 (50)	4 (19)	
Inflammatory diagnosis, ^b <i>n</i> (%)	7 (18)	0	7 (33)	.01
Indeterminate diagnosis, <i>n</i> (%)	3 (8)	0	2 (10)	.49
Spinal cord involvement, <i>n</i> (%)	6 (15)	0	6 (29)	.02
Critical care intervention, <i>n</i> (%)	28 (70)	14 (78)	13 (62)	.32
Intubation	14 (35)	13 (33)	8 (38)	.73
Central venous line	20 (50)	8 (44)	11 (52)	.75
Arterial line	6 (15)	1 (6)	4 (19)	.35
Neurosurgical intervention	17 (43)	10 (56)	6 (29)	.11
Hemodynamic intervention	8 (20)	3 (17)	4 (19)	>.99
Intracranial pressure monitor	4 (10)	2 (11)	1 (5)	.59
Infusion seizure medication	4 (10)	1 (6)	3 (14)	.42

One patient died during hospitalization with indeterminate encephalitis. Groups were compared by using χ^2 tests (with Fisher's exact for cells with *n* < 10) for categorical variables and Mann-Whitney *U* tests for continuous variables.

^a More than 1 chronic condition was present in 2 patients; conditions included oncologic, metabolic, genetic, endocrine, neurologic, and developmental diagnoses.

^b Inflammatory diagnoses included autoimmune encephalitis (*n* = 2), acute flaccid myelitis, acute disseminated encephalomyelitis, neuromyelitis optica, pyruvate dehydrogenase deficiency, and alternating hemiplegia of childhood.

SUPPLEMENTAL TABLE 8 Demographic and Clinical Characteristics by Hospital Outcome Among Patients With Hypoxic-Ischemic Injury After Cardiac Arrest

	All <i>N</i> = 37	Death in Hospital <i>n</i> = 25	Survival With New Disability <i>n</i> = 5	Survival With No Disability <i>n</i> = 7
Age, y, median (IQR)	1.2 (0.3–12.6)	1.2 (0.4–11.6)	0.3 (0.3–0.9) ^a	14.7 (9.4–15.6)
White race, <i>n</i> (%)	24 (65)	13 (52) ^b	4 (80)	7 (100)
Hispanic ethnicity, <i>n</i> (%)	3 (8)	2 (8)	1 (20)	0
Male sex, <i>n</i> (%)	22 (60)	12 (48)	5 (100)	5 (71)
Medicaid insurance, <i>n</i> (%)	22 (60)	17 (68)	4 (80)	1 (14)
Pediatric Index of Mortality 2 score, median (IQR)	0.5 (–2.8 to 1.9)	1.2 (0.5–2.3) ^b	–2.8 (–3.1 to –2.8)	–2.9 (–3.1 to –2.7)
Preadmission chronic condition, ^c <i>n</i> (%)	13 (35)	9 (36)	1 (20)	3 (43)
Baseline FSS, median (IQR); maximum	6 (6–6); 15	6 (6–6); 15	6 (6–6); 7	6 (6–6); 8
Seizure during hospitalization, <i>n</i> (%)	8 (22)	5 (20)	3 (60) ^a	0
Minutes of CPR preadmission, median (IQR)	30 (12.5–52.5)	40 (20–60) ^b	30 (5–40)	10 (7.5–20)
Cause of cardiac arrest, <i>n</i> (%)				
Suffocation	9 (24)	7 (28)	2 (40)	0
Arrhythmia	6 (16)	1 (4) ^b	0 ^a	5 (71)
Respiratory	5 (14)	3 (12)	1 (20)	1 (14)
Submersion	4 (11)	2 (8)	1 (20)	1 (14)
Other or unknown ^d	13 (35)	12 (48) ^b	1 (20)	0
Critical care intervention, <i>n</i> (%)	36 (97)	25 (100)	5 (100)	6 (86) ^e
Intubation	36 (97)	25 (100)	5 (100)	6 (86)
Central venous line	31 (84)	24 (96) ^b	3 (60)	4 (57)
Arterial line	33 (89)	25 (100) ^b	2 (40)	6 (86)
Hemodynamic intervention	31 (84)	25 (100) ^b	2 (40)	4 (57)
Cardiopulmonary resuscitation	8 (22)	7 (28)	1 (20)	0

^a *P* < .05 when comparing survivors (*n* = 12) with and without new disability, defined as an FSS change from preadmission baseline of of ≥1 point. Groups were compared by using χ^2 tests (with Fisher’s exact for cells with *N* < 10) for categorical variables and Mann-Whitney *U* tests for continuous variables.

^b *P* < .05 when comparing variables by hospital death by using χ^2 tests (with Fisher’s exact for cells with expected *N* < 10) for categorical variables and Mann-Whitney *U* tests for continuous variables.

^c Chronic conditions include neurologic, developmental, metabolic, genetic, cardiac, respiratory, oncology, rheumatologic, and psychiatric diagnoses; all patients with preadmission psychiatric conditions (*n* = 4) died as a result of suicide. All 5 patients with >1 preadmission chronic condition died.

^d Other or unknown includes sudden infant death syndrome or indeterminate causes of arrest.

^e One patient with arrhythmia and congenital heart disease received defibrillation during preadmission CPR, survived without new disability, and required no critical care interventions.

SUPPLEMENTAL TABLE 9 Demographic and Clinical Characteristics by Disability Group Among Patients With Stroke

	All Stroke <i>N</i> = 23	Survival Without FSS Change <i>n</i> = 11	Survival With New Disability <i>n</i> = 11	<i>P</i>
Age, y, median (IQR)	9.5 (1.2–15.5)	9.5 (1.1–15.5)	10 (3.8–15.4)	.90
White race, <i>n</i> (%)	19 (83)	9 (82)	9 (82)	>.99
Hispanic ethnicity, <i>n</i> (%)	6 (26)	3 (27)	3 (27)	>.99
Sex, <i>n</i> (%)	12 (52)	8 (73)	4 (36)	.20
Medicaid insurance, <i>n</i> (%)	10 (44)	5 (46)	5 (46)	>.99
Preadmission chronic condition, ^a <i>n</i> (%)	11 (48)	7 (64)	3 (27)	.20
Baseline FSS, median (IQR); maximum	6 (6–6); 9	6 (6–6); 9	6 (6–6); 7	.80
Type of stroke, <i>n</i> (%)				
Ischemic	9 (39)	3 (27)	5 (45)	.66
Hemorrhagic	10 (44)	4 (36)	6 (55)	.67
CSVT	4 (17)	4 (36)	0	.09
Critical care intervention, <i>n</i> (%)	13 (57)	4 (36)	8 (73)	.20
Intubation	9 (39)	1 (9)	7 (64)	.02
Central venous line	8 (35)	1 (9)	6 (55)	.06
Arterial line	10 (44)	2 (18)	7 (64)	.08
Hemodynamic intervention	5 (22)	0	4 (36)	.09
Neurosurgical intervention	10 (44)	3 (27)	7 (64)	.20
Intracranial pressure monitor	5 (22)	2 (18)	3 (27)	>.99
CPR	3 (13)	0	2 (18)	.48
Thrombectomy (ischemic stroke)	2 (9)	0	2 (18)	.48
Seizure during hospitalization, <i>n</i> (%)	5 (22)	1 (9)	3 (27)	.59

One patient with leukemia died of malignant middle cerebral artery stroke. Disability groups compared with survivors with no disability at discharge by using χ^2 tests (with Fisher's exact for cells with $n < 10$) for categorical variables and Mann-Whitney *U* tests for continuous variables.

^a Four patients had multiple chronic conditions; conditions included neurologic, developmental, cardiac, respiratory, hematologic, oncology, and rheumatologic diagnoses.