

1.0 Data Analysis

1.1 Checked the total columns and rows (records)

- Total Columns = 24
- Total records = 1048575

1.2 Checked the columns with data types

- It was observed that data set is collection of categorical data and numerical data.
- Below are exact data types generated by Python.
- Highlighted columns are categorical in nature.
- Remaining columns are numeric.

RangeIndex: 1048575 entries, 0 to 1048574

Data columns (total 24 columns):

#	Column	Non-Null	Count	Dtype
0	Area_Service	1046119	non-null	object
1	Hospital County	1046119	non-null	object
2	Hospital Id	1046119	non-null	float64
3	Age	1048575	non-null	object
4	Gender	1048575	non-null	object
5	Cultural_group	1048575	non-null	object
6	ethnicity	1048575	non-null	object
7	Days_spend_hsptl	1048575	non-null	object
8	Admission_type	1048575	non-null	object
9	Home or self care,	1048575	non-null	object
10	ccs_diagnosis_code	1048575	non-null	int64
11	ccs_procedure_code	1048575	non-null	int64
12	apr_drg_description	1048575	non-null	object
13	Code_illness	1048575	non-null	int64
14	Mortality risk	1048533	non-null	float64
15	Surg_Description	1048575	non-null	object
16	Weight_baby	1048575	non-null	int64
17	Abortion	1048575	non-null	object
18	Emergency dept_yes/No	1048575	non-null	object
19	Tot_charg	1048575	non-null	float64
20	Tot_cost	1048575	non-null	float64
21	ratio_of_total_costs_to_total_charges	1048575	non-null	float64
22	Result	1048575	non-null	int64
23	Payment_Typology	1048575	non-null	int64

1.3 Description of Variables :

0-Areas of service :

There are 7 areas of services where data on hospital facilities are collected

1-Hospital County :

There are certain counties in each area where the hospital services are provided

2-Hospital Id :

In each county, there are various types of hospitals with different Id numbers

3-Age :

There are patients of different age groups starting from 0 to 70 years and older. This includes new born baby as well

4-Gender : Male/ Female

5-Cultural Group :

Different Cultural Groups like

- Black who are called as African American.
- White who are white American
- Other Race – Groups other than above two

6-Ethnicity :

Spanish/Hispanic : Spanish speaking countries especially people from Central and South America

Non-Spanish : Main English speaking countries called Anglo Americans

7-No. of Days Spent in Hospital:

The average length of stay in hospitals (ALOS) is often used as an indicator of efficiency. All other things being equal, a shorter stay will reduce the cost per discharge and shift care from inpatient to less expensive post-acute settings. The ALOS refers to the average number of days that patients spend in hospital. It is generally measured by dividing the total number of days stayed by all inpatients during a year by the number of admissions or discharges. Day cases are excluded. The indicator is presented both for all acute care cases and for childbirth without complications.

8-Admission Type :

Code	Code value
1	Emergency: The patient requires immediate medical intervention as a result of severe, life threatening or potentially disabling conditions. Generally, the patient is admitted through the emergency room.
2	Urgent: The patient requires immediate attention for the care and treatment of a physical or mental disorder. Generally, the patient is admitted to the first available and suitable accommodation.
3	Elective: The patient's condition permits adequate time to schedule the availability of a suitable accommodation.
4	Newborn: The patient is a newborn delivered either inside the admitting hospital (UB04 FL 15 value 5 [A baby born inside the admitting hospital] or outside of the hospital (UB04 FL 15 value "6" [A baby born outside the admitting hospital])).

Code	Code value
5	Trauma: The patient visits a trauma center (A trauma center means a facility licensed or designated by the State or local government authority authorized to do so, or as verified by the American College of surgeons and involving a trauma activation.)
Null/missing	source value is missing, unknown, or not on the valid value list or within the range of valid values

9-Home or Self Care, 10-ccs diagnosis code, 11-ccs procedure code and 12-APR-DRG (All Patient Refined Diagnosis Related Groups are related to each other according to CCS(Clinical Classification Software) guideline attached.
Type of recommended care is covered under Home or Self care
ccs diagnosis code is the code depending on type of disease
ccs procedure code is the code for recommended clinical procedure to be followed.
Apr-drg description is the description of the disease

Appendix A1

Single-Level CCS – Diagnoses

CATEGORY LABELS

- 1 Tuberculosis
- 2 Septicemia (except in labor)
- 3 Bacterial infection; unspecified site4
- Mycoses
- 5 HIV infection
- 6 Hepatitis
- 7 Viral infection
- 8 Other infections; including parasitic
- 9 Sexually transmitted infections (not HIV or hepatitis) 10
- Immunizations and screening for infectious disease 11
- Cancer of head and neck
- 12 Cancer of esophagus
- 13 Cancer of stomach
- 14 Cancer of colon
- 15 Cancer of rectum and anus
- 16 Cancer of liver and intrahepatic bile duct17
- Cancer of pancreas
- 18 Cancer of other GI organs; peritoneum
- 19 Cancer of bronchus; lung
- 20 Cancer; other respiratory and intrathoracic
- 21 Cancer of bone and connective tissue
- 22 Melanomas of skin
- 23 Other non-epithelial cancer of skin24

Cancer of breast
25 Cancer of uterus
26 Cancer of cervix
27 Cancer of ovary
28 Cancer of other female genital organs
29 Cancer of prostate
30 Cancer of testis
31 Cancer of other male genital organs32
Cancer of bladder
33 Cancer of kidney and renal pelvis
34 Cancer of other urinary organs
35 Cancer of brain and nervous system
36 Cancer of thyroid
37 Hodgkin`s disease
38 Non-Hodgkin`s lymphoma
39 Leukemias
40 Multiple myeloma
41 Cancer; other and unspecified primary42
Secondary malignancies
43 Malignant neoplasm without specification of site
44 Neoplasms of unspecified nature or uncertain behavior45
Maintenance chemotherapy; radiotherapy
46 Benign neoplasm of uterus
47 Other and unspecified benign neoplasm48
Thyroid disorders
49 Diabetes mellitus without complication

50 Diabetes mellitus with complications51
 Other endocrine disorders
 52 Nutritional deficiencies
 53 Disorders of lipid metabolism
 54 Gout and other crystal arthropathies55
 Fluid and electrolyte disorders
 56 Cystic fibrosis
 57 Immunity disorders
 58 Other nutritional; endocrine; and metabolic disorders59
 Deficiency and other anemia
 60 Acute posthemorrhagic anemia
 61 Sickle cell anemia
 62 Coagulation and hemorrhagic disorders
 63 Diseases of white blood cells
 64 Other hematologic conditions **650**
MHSA: Adjustment disorders651
MHSA: Anxiety disorders

652 MHSA: Attention-deficit, conduct, and disruptive behavior disorders 653 MHSA:
Delirium, dementia, and amnesic and other cognitive disorders654 MHSA:
Developmental disorders

655 MHSA: Disorders usually diagnosed in infancy, childhood, or adolescence656 MHSA:
Impulse control disorders, NEC

657 MHSA: Mood disorders

658 MHSA: Personality disorders

659 MHSA: Schizophrenia and other psychotic disorders660
MHSA: Alcohol-related disorders

661 MHSA: Substance-related disorders

662 MHSA: Suicide and intentional self-inflicted injury

663 MHSA: Screening and history of mental health and substance abuse codes670 MHSA:
Miscellaneous mental health disorders

76 Meningitis (except that caused by tuberculosis or sexually transmitted disease)
 77 Encephalitis (except that caused by tuberculosis or sexually transmitted disease)
 78 Other CNS infection and poliomyelitis
 79 Parkinson's disease
 80 Multiple sclerosis
 81 Other hereditary and degenerative nervous system conditions82
 Paralysis
 83 Epilepsy; convulsions
 84 Headache; including migraine
 85 Coma; stupor; and brain damage86
 Cataract
 87 Retinal detachments; defects; vascular occlusion; and retinopathy
 88 Glaucoma
 89 Blindness and vision defects
 90 Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)
 91 Other eye disorders

92 Otitis media and related conditions

93 Conditions associated with dizziness or vertigo94

Other ear and sense organ disorders

95 Other nervous system disorders

96 Heart valve disorders

97 Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)

98 Essential hypertension

99 Hypertension with complications and secondary hypertension

100 Acute myocardial infarction
101 Coronary atherosclerosis and other heart disease102
Nonspecific chest pain
103 Pulmonary heart disease
104 Other and ill-defined heart disease
105 Conduction disorders
106 Cardiac dysrhythmias
107 Cardiac arrest and ventricular fibrillation 108
Congestive heart failure; nonhypertensive109
Acute cerebrovascular disease
110 Occlusion or stenosis of precerebral arteries
111 Other and ill-defined cerebrovascular disease
112 Transient cerebral ischemia
113 Late effects of cerebrovascular disease
114 Peripheral and visceral atherosclerosis
115 Aortic; peripheral; and visceral artery aneurysms
116 Aortic and peripheral arterial embolism or thrombosis
117 Other circulatory disease
118 Phlebitis; thrombophlebitis and thromboembolism
119 Varicose veins of lower extremity
120 Hemorrhoids
121 Other diseases of veins and lymphatics
122 Pneumonia (except that caused by tuberculosis or sexually transmitted disease)123
Influenza
124 Acute and chronic tonsillitis
125 Acute bronchitis
126 Other upper respiratory infections
127 Chronic obstructive pulmonary disease and bronchiectasis128
Asthma
129 Aspiration pneumonitis; food/vomitus
130 Pleurisy; pneumothorax; pulmonary collapse 131
Respiratory failure; insufficiency; arrest (adult)132
Lung disease due to external agents
133 Other lower respiratory disease
134 Other upper respiratory disease
135 Intestinal infection
136 Disorders of teeth and jaw
137 Diseases of mouth; excluding dental
138 Esophageal disorders
139 Gastroduodenal ulcer (except hemorrhage)
140 Gastritis and duodenitis
141 Other disorders of stomach and duodenum
142 Appendicitis and other appendiceal conditions
143 Abdominal hernia
144 Regional enteritis and ulcerative colitis
145 Intestinal obstruction without hernia
146 Diverticulosis and diverticulitis
147 Anal and rectal conditions
148 Peritonitis and intestinal abscess
149 Biliary tract disease
150 Liver disease; alcohol-related
151 Other liver diseases
152 Pancreatic disorders (not diabetes)
153 Gastrointestinal hemorrhage
154 Noninfectious gastroenteritis
155 Other gastrointestinal disorders

156 Nephritis; nephrosis; renal sclerosis157

Acute and unspecified renal failure **158**

Chronic kidney disease

159 Urinary tract infections

160 Calculus of urinary tract

161 Other diseases of kidney and ureters

162 Other diseases of bladder and urethra

163 Genitourinary symptoms and ill-defined conditions

164 Hyperplasia of prostate

165 Inflammatory conditions of male genital organs

166 Other male genital disorders

167 Nonmalignant breast conditions

168 Inflammatory diseases of female pelvic organs169

Endometriosis

170 Prolapse of female genital organs

171 Menstrual disorders

172 Ovarian cyst

173 Menopausal disorders

174 Female infertility

175 Other female genital disorders

176 Contraceptive and procreative management

177 Spontaneous abortion

178 Induced abortion

179 Postabortion complications

180 Ectopic pregnancy

181 Other complications of pregnancy

182 Hemorrhage during pregnancy; abruptio placenta; placenta previa 183

Hypertension complicating pregnancy; childbirth and the puerperium184 Early

or threatened labor

185 Prolonged pregnancy

186Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium

187 Malposition; malpresentation

188 Fetopelvic disproportion; obstruction

189 Previous C-section

190 Fetal distress and abnormal forces of labor

191 Polyhydramnios and other problems of amniotic cavity192

Umbilical cord complication

193 OB-related trauma to perineum and vulva

194 Forceps delivery

195 Other complications of birth; puerperium affecting management of mother

196 Other pregnancy and delivery including normal

197 Skin and subcutaneous tissue infections

198 Other inflammatory condition of skin

199 Chronic ulcer of skin

200 Other skin disorders

201Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)

202 Rheumatoid arthritis and related disease

203 Osteoarthritis

204 Other non-traumatic joint disorders

205 Spondylosis; intervertebral disc disorders; other back problems206

Osteoporosis

207 Pathological fracture

208 Acquired foot deformities

209 Other acquired deformities

210 Systemic lupus erythematosus and connective tissue disorders
 211 Other connective tissue disease
 212 Other bone disease and musculoskeletal deformities
 213 Cardiac and circulatory congenital anomalies
 214 Digestive congenital anomalies
 215 Genitourinary congenital anomalies
 216 Nervous system congenital anomalies
 217 Other congenital anomalies
 218 Liveborn
 219 Short gestation; low birth weight; and fetal growth retardation220
 Intrauterine hypoxia and birth asphyxia
 221 Respiratory distress syndrome
 222 Hemolytic jaundice and perinatal jaundice
 223 Birth trauma
 224 Other perinatal conditions
 225 Joint disorders and dislocations; trauma-related226
 Fracture of neck of femur (hip)
 227 Spinal cord injury
 228 Skull and face fractures
 229 Fracture of upper limb
 230 Fracture of lower limb
 231 Other fractures
 232 Sprains and strains
 233 Intracranial injury
 234 Crushing injury or internal injury
 235 Open wounds of head; neck; and trunk
 236 Open wounds of extremities
 237 Complication of device; implant or graft
 238 Complications of surgical procedures or medical care239
 Superficial injury; contusion
 240 Burns
 241 Poisoning by psychotropic agents
 242 Poisoning by other medications and drugs243
 Poisoning by nonmedicinal substances
 244 Other injuries and conditions due to external causes
 245 Syncope
 246 Fever of unknown origin
 247 Lymphadenitis
 248 Gangrene
 249 Shock
 250 Nausea and vomiting
 251 Abdominal pain
 252 Malaise and fatigue
 253 Allergic reactions
 254 Rehabilitation care; fitting of prostheses; and adjustment of devices
 255 Administrative/social admission
 256 Medical examination/evaluation
 257 Other aftercare
 258 Other screening for suspected conditions (not mental disorders or infectious disease)259
 Residual codes; unclassified
 260 E Codes: All (external causes of injury and poisoning)
 2601 E Codes: Cut/pierceb
 2602 E Codes: Drowning/submersion
 2603 E Codes: Fall
 2604 E Codes: Fire/burn
 2605 E Codes: Firearm

2606 E Codes: Machinery
2607 E Codes: Motor vehicle traffic (MVT)
2608 E Codes: Pedal cyclist; not MVT
2609 E Codes: Pedestrian; not MVT
2610 E Codes: Transport; not MVT
2611 E Codes: Natural/environment
2612 E Codes: Overexertion
2613 E Codes: Poisoning
2614 E Codes: Struck by; against
2615 E Codes: Suffocation
2616 E Codes: Adverse effects of medical care
2617 E Codes: Adverse effects of medical drugs
2618 E Codes: Other specified and classifiable
2619 E Codes: Other specified; NEC
2620 E Codes: Unspecified
2621 E Codes: Place of occurrence

Appendix B1

Single-Level CCS - Procedures

CATEGORY LABELS

- 1 Incision and excision of CNS
- 2 Insertion; replacement; or removal of extracranial ventricular shunt3
- Laminectomy; excision intervertebral disc
- 4 Diagnostic spinal tap
- 5 Insertion of catheter or spinal stimulator and injection into spinal canal6
- Decompression peripheral nerve
- 7 Other diagnostic nervous system procedures
- 8 Other non-OR or closed therapeutic nervous system procedures9
- Other OR therapeutic nervous system procedures
- 10 Thyroidectomy; partial or complete
- 11 Diagnostic endocrine procedures
- 12 Other therapeutic endocrine procedures
- 13 Corneal transplant
- 14 Glaucoma procedures
- 15 Lens and cataract procedures
- 16 Repair of retinal tear; detachment
- 17 Destruction of lesion of retina and choroid18
- Diagnostic procedures on eye
- 19 Other therapeutic procedures on eyelids; conjunctiva; cornea
- 20 Other intraocular therapeutic procedures
- 21 Other extraocular muscle and orbit therapeutic procedures
- 22 Tympanoplasty
- 23 Myringotomy
- 24 Mastoidectomy
- 25 Diagnostic procedures on ear
- 26 Other therapeutic ear procedures27
- Control of epistaxis
- 28 Plastic procedures on nose
- 29 Dental procedures
- 30 Tonsillectomy and/or adenoidectomy
- 31 Diagnostic procedures on nose; mouth and pharynx
- 32 Other non-OR therapeutic procedures on nose; mouth and pharynx33
- Other OR therapeutic procedures on nose; mouth and pharynx
- 34 Tracheostomy; temporary and permanent
- 35 Tracheoscopy and laryngoscopy with biopsy
- 36 Lobectomy or pneumonectomy
- 37 Diagnostic bronchoscopy and biopsy of bronchus
- 38 Other diagnostic procedures on lung and bronchus
- 39 Incision of pleura; thoracentesis; chest drainage
- 40 Other diagnostic procedures of respiratory tract and mediastinum
- 41 Other non-OR therapeutic procedures on respiratory system
- 42 Other OR therapeutic procedures on respiratory system and mediastinum
- 43 Heart valve procedures
- 44 Coronary artery bypass graft (CABG)
- 45 Percutaneous transluminal coronary angioplasty (PTCA)46
- Coronary thrombolysis
- 47 Diagnostic cardiac catheterization; coronary arteriography
- 48 Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator49

Other OR heart procedures

50 Extracorporeal circulation auxiliary to open heart procedures
 51 Endarterectomy; vessel of head and neck
 52 Aortic resection; replacement or anastomosis
 53 Varicose vein stripping; lower limb
 54 Other vascular catheterization; not heart
 55 Peripheral vascular bypass
 56 Other vascular bypass and shunt; not heart
 57 Creation; revision and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis
 58 Hemodialysis
 59 Other OR procedures on vessels of head and neck60
 Embolectomy and endarterectomy of lower limbs
 61 Other OR procedures on vessels other than head and neck
 62 Other diagnostic cardiovascular procedures
 63 Other non-OR therapeutic cardiovascular procedures
 64 Bone marrow transplant
 65 Bone marrow biopsy
 66 Procedures on spleen
 67 Other therapeutic procedures; hemic and lymphatic system
 68 Injection or ligation of esophageal varices
 69 Esophageal dilatation
 70 Upper gastrointestinal endoscopy; biopsy71
 Gastrostomy; temporary and permanent 72
 Colostomy; temporary and permanent
 73 Ileostomy and other enterostomy
 74 Gastrectomy; partial and total
 75 Small bowel resection
 76 Colonoscopy and biopsy
 77 Proctoscopy and anorectal biopsy
 78 Colorectal resection
 79 Local excision of large intestine lesion (not endoscopic)
 80 Appendectomy
 81 Hemorrhoid procedures
 82 Fluoroscopy of the biliary and pancreatic ducts (ERCP, ERC and ERP)83
 Biopsy of liver
 84 Cholecystectomy and common duct exploration
 85 Inguinal and femoral hernia repair
 86 Other hernia repair
 87 Laparoscopy (GI only) 88
 Abdominal paracentesis
 89 Exploratory laparotomy
 90 Excision; lysis peritoneal adhesions91
 Peritoneal dialysis
 92 Other bowel diagnostic procedures
 93 Other non-OR upper GI therapeutic procedures94
 Other OR upper GI therapeutic procedures
 95 Other non-OR lower GI therapeutic procedures
 96 Other OR lower GI therapeutic procedures
 97 Other gastrointestinal diagnostic procedures
 98 Other non-OR gastrointestinal therapeutic procedures99
 Other OR gastrointestinal therapeutic procedures
 100 Endoscopy and endoscopic biopsy of the urinary tract
 101 Transurethral excision; drainage; or removal urinary obstruction102
 Ureteral catheterization
 103 Nephrotomy and nephrostomy
 104 Nephrectomy; partial or complete

105 Kidney transplant
106 Genitourinary incontinence procedures
107 Extracorporeal lithotripsy; urinary
108 Indwelling catheter
109 Procedures on the urethra
110 Other diagnostic procedures of urinary tract
111 Other non-OR therapeutic procedures of urinary tract112
Other OR therapeutic procedures of urinary tract
113 Transurethral resection of prostate (TURP)
114 Open prostatectomy
115 Circumcision
116 Diagnostic procedures; male genital
117 Other non-OR therapeutic procedures; male genital118
Other OR therapeutic procedures; male genital
119 Oophorectomy; unilateral and bilateral
120 Other operations on ovary
121 Ligation or occlusion of fallopian tubes
122 Removal of ectopic pregnancy
123 Other operations on fallopian tubes
124 Hysterectomy; abdominal and vaginal
125 Other excision of cervix and uterus
126 Abortion (termination of pregnancy)
127 Dilatation and curettage (D&C); aspiration after delivery or abortion
128 Diagnostic dilatation and curettage (D&C)
129 Repair of cystocele and rectocele; obliteration of vaginal vault
130 Other diagnostic procedures; female organs
131 Other non-OR therapeutic procedures; female organs
132 Other OR therapeutic procedures; female organs
133 Episiotomy
134 Cesarean section
135 Forceps; vacuum; and breech delivery
136 Artificial rupture of membranes to assist delivery
137 Other procedures to assist delivery
138 Diagnostic amniocentesis
139 Fetal monitoring
140 Repair of current obstetric laceration 141
Other therapeutic obstetrical procedures142
Partial excision bone
143 Bunionectomy or repair of toe deformities
144 Treatment; facial fracture or dislocation
145 Treatment; fracture or dislocation of radius and ulna
146 Treatment; fracture or dislocation of hip and femur
147 Treatment; fracture or dislocation of lower extremity (other than hip or femur)
148 Other fracture and dislocation procedure
149 Arthroscopy
150 Division of joint capsule; ligament or cartilage
151 Excision of semilunar cartilage of knee
152 Arthroplasty knee
153 Hip replacement; total and partial
154 Arthroplasty other than hip or knee
155 Arthrocentesis
156 Injections and aspirations of muscles; tendons; bursa; joints and soft tissue
157 Amputation of lower extremity
158 Spinal fusion
159 Other diagnostic procedures on musculoskeletal system160
Other therapeutic procedures on muscles and tendons

161 Other OR therapeutic procedures on bone
 162 Other OR therapeutic procedures on joints
 163 Other non-OR therapeutic procedures on musculoskeletal system
 164 Other OR therapeutic procedures on musculoskeletal system
 165 Breast biopsy and other diagnostic procedures on breast
 166 Lumpectomy; quadrantectomy of breast
 167 Mastectomy
 168 Incision and drainage; skin and subcutaneous tissue169
 Debridement of wound; infection or burn
 170 Excision of skin lesion
 171 Suture of skin and subcutaneous tissue172
 Skin graft
 173 Other diagnostic procedures on skin and subcutaneous tissue
 174 Other non-OR therapeutic procedures on skin and breast
 175 Other OR therapeutic procedures on skin and breast
 176 Organ transplantation (other than bone marrow, corneal or kidney)177
 Computerized axial tomography (CT) scan head
 178 CT scan chest
 179 CT scan abdomen
 180 Other CT scan
 181 Myelogram
 182 Mammography
 183 Routine chest X-ray
 184 Intraoperative cholangiogram
 185 Upper gastrointestinal X-ray
 186 Lower gastrointestinal X-ray
 187 Intravenous pyelogram
 188 Cerebral arteriogram
 189 Contrast aortogram
 190 Contrast arteriogram of femoral and lower extremity arteries191
 Arterio- or venogram (not heart and head)
 192 Diagnostic ultrasound of head and neck
 193 Diagnostic ultrasound of heart (echocardiogram)194
 Diagnostic ultrasound of gastrointestinal tract 195
 Diagnostic ultrasound of urinary tract
 196 Diagnostic ultrasound of abdomen or retroperitoneum
 197 Other diagnostic ultrasound
 198 Magnetic resonance imaging
 199 Electroencephalogram (EEG)
 200 Nonoperative urinary system measurements
 201 Cardiac stress tests
 202 Electrocardiogram
 203 Electrographic cardiac monitoring
 204 Swan-Ganz catheterization for monitoring
 205 Arterial blood gases
 206 Microscopic examination (bacterial smear; culture; toxicology)
 207 Nuclear medicine imaging of bone
 208 Nuclear medicine imaging of pulmonary
 209 Non-imaging nuclear medicine probe or assay210
 Other nuclear medicine imaging
 211 Radiation therapy
 212 Diagnostic physical therapy
 213 Physical therapy exercises; manipulation; and other procedures214
 Traction; splints; and other wound care
 215 Other physical therapy and rehabilitation
 216 Respiratory intubation and mechanical ventilation

217 Other respiratory therapy
218 Psychological and psychiatric evaluation and therapy219
Alcohol and drug rehabilitation/detoxification
220 Ophthalmologic and otologic diagnosis and treatment
221 Nasogastric tube
222 Blood transfusion
223 Enteral and parenteral nutrition
224 Cancer chemotherapy
225 Conversion of cardiac rhythm
226 Other diagnostic radiology and related techniques227
Other diagnostic procedures
228 Prophylactic vaccinations and inoculations
229 Nonoperative removal of foreign body
230 Extracorporeal shock wave, other than urinary
231 Other therapeutic procedures

13-Illness Code :

- 0 for stage unspecified
- 1 for mild
- 2 for moderate
- 3 for severe
- 4 for indeterminate

14-Mortality Risk :

- 1 for Minor
- 2 for Moderate
- 3 for Major
- 4 for Severe

15-Surge_ Description – Type of Treatment – May be Surgical or Medical.

16-Weight_baby : Wherever the admission type is “New Born”, there will be some baby weight, otherwise it is 0.

17-Aburtion (Y/N)

Wherever, there is a “newborn” as type of admission, there is “N” for abortion. In all other cases it is “Y”

18-Emergency_Deptt:

An emergency department, also known as an accident & emergency department, emergency room, emergency ward or casualty department, is a medical treatment facility specializing in emergency medicine, the acute care of patients who present without prior appointment; either by their own means or by that of an ambulance.

The patient admission type may or may not be emergency, but during treatment, the case can be taken to emergency deptt.

19-Total Charges

Think of a hospital as a hotel. A hotel has a price list and charges you for the room, internet service, food and beverages. A hospital has a price list as well. It is called a “Chargemaster” or Charge Description Master (CDM). It includes medical procedures, lab tests, supplies, medications etc. A hospital charges for every item used by a patient along with its associated charges (billed charges) on every claim submitted to an insurance carrier or patient.

The billed charges for every item are the same for every payer so there is consistency. In most hospitals, billed charges only cover the hospital’s charges; they do not cover many professional fees. For example, if you are seen in the Emergency Department by a physician that is part of an outsourced service you will receive a separate bill for his/her service. If you need surgery you will also receive an invoice from the surgeon and the anesthesiologist or anesthetist.

20-Total Costs

Hospital costs vary according to how much they must spend to provide patient care, as opposed to how much a patient or insurer must spend to receive care. The hospital earns a surplus when they receive higher amounts than their costs. They incur a loss when the opposite occurs.

21-Cost-to-Charge Ratios & Their Relevance

Hospitals typically compare their total charges to their cost using a cost-to-charge ratio determination.

The cost-to-charge ratio is the ratio between a hospital's expenses and what they charge. The closer the cost-to-charge ratio is to 1, the less difference there is between the actual costs incurred and the hospital's charges. Multiplying each hospital's overall cost-to-charge ratio by total charges provides an estimate of the hospital's costs.

The cost-to-charge ratio can be used to estimate the cost of some specific procedures or to compare hospital costs between different facilities in the same local area or in other areas of the country.

22- Result :

- 1 – Genuine Claim
- 0- Fraud Claim

23. Payment Typology :

Method of Payment in insurance claim

5 categories of payment typologies are defined below:

- 1- Medicare
- 2- Medicaid
- 3- Other Governments
- 4- Department of Corrections
- 5- Private Health Insurance

Appendix P-Source of Payment Typology Codes

Source: [Public Health Data Standards Consortium Source of Payment Typology Version 3.0](#)

Effective: October 2007 (*NOTE: NYS ADDITIONS September 2008*)

CODE	DESCRIPTION
1	MEDICARE
11	Medicare (Managed Care)
111	Medicare HMO
112	Medicare PPO

113	Medicare POS
119	Medicare Managed Care Other
12	Medicare (Non-managed Care)
121	Medicare FFS
122	Medicare Drug Benefit
123	Medicare Medical Savings Account (MSA)
129	Medicare Non-managed Care Other
19	Medicare Other
2	MEDICAID
21	Medicaid (Managed Care)
211	Medicaid HMO
2111	<i>Family Health Plus (NYS ADDITION)</i>
2112	<i>Healthy New York (NYS ADDITION)</i>
212	Medicaid PPO
213	Medicaid PCCM (Primary Care Case Management)
219	Medicaid Managed Care Other
22	Medicaid (Non-managed Care Plan) <i>(Fee-For-Service -- NYS ADDITION)</i>
23	Medicaid/SCHIP <i>(Child Health Plus -- NYS ADDITION)</i>
24	Medicaid Applicant
25	Medicaid - Out of State

29	Medicaid Other
3	OTHER GOVERNMENT (Federal/State/Local)
	(excluding Department of Corrections
31	Department of Defense
311	TRICARE (CHAMPUS)
3111	TRICARE Prime -- HMO
3112	TRICARE Extra -- PPO
3113	TRICARE Standard - Fee For Service
3114	TRICARE For Life -- Medicare Supplement
3115	TRICARE Reserve Select
3116	Uniformed Services Family Health Plan (USFHP) -- HMO
3119	Department of Defense - (other)
312	Military Treatment Facility
3121	Enrolled Prime-HMO
3122	Non-enrolled Space Available
3123	TRICARE For Life (TFL)
313	Dental--Stand Alone
32	Department of Veterans Affairs
321	Veteran care--Care provided to Veterans
3211	Direct Care--Care provided in VA facilities

3212	Indirect Care--Care provided outside VA facilities
32121	Fee Basis
32122	Foreign Fee/Foreign Medical Program (FMP)
32123	Contract Nursing Home/Community Nursing Home
32124	State Veterans Home
32125	Sharing Agreements
32126	Other Federal Agency
322	Non-veteran care
3221	Civilian Health and Medical Program for the VA (CHAMPVA)
3222	Spina Bifida Health Care Program (SB)
3223	Children of Women Vietnam Veterans (CWVV)
3229	Other non-veteran care
33	Indian Health Service or Tribe
331	Indian Health Service - Regular
332	Indian Health Service - Contract
333	Indian Health Service - Managed Care
334	Indian Tribe - Sponsored Coverage
34	HRSA Program
341	Title V (MCH Block Grant)
342	Migrant Health Program
343	Ryan White Act

349	Other
35	Black Lung
36	State Government
361	State SCHIP program (codes for individual states)
362	Specific state programs (list/local code)
369	State, not otherwise specified (other state)
37	Local Government
371	Local - Managed care
3711	HMO
3712	PPO
3713	POS
372	FFS/Indemnity
379	Local, not otherwise specified (other local, county)
38	Other Government (Federal, State, Local not specified)
381	Federal, State, Local not specified managed care
3811	Federal, State, Local not specified - HMO
3812	Federal, State, Local not specified - PPO
3813	Federal, State, Local not specified - POS
3819	Federal, State, Local not specified - not specified managed care
382	Federal, State, Local not specified managed - FFS
389	Federal, State, Local not specified managed - Other

39	Other Federal
4	DEPARTMENT OF CORRECTIONS
41	Corrections Federal
42	Corrections State
43	Corrections Local
44	Corrections Unknown Level
5	PRIVATE HEALTH INSURANCE
51	Managed Care (Private)
511	Commercial Managed Care - HMO
512	Commercial Managed Care - PPO
513	Commercial Managed Care - POS
514	Exclusive Provider Organization
515	Gatekeeper PPO (GPPO)
519	Managed Care, Other (non HMO)
52	Private Health Insurance - Indemnity
521	Commercial Indemnity
522	Self-insured (ERISA) Administrative Services Only (ASO) plan
523	Medicare supplemental policy (as second payer)
529	Private health insurance -- other commercial Indemnity

53	Managed Care (private) or private health insurance (indemnity), not otherwise specified
54	Organized Delivery System
55	Small Employer Purchasing Group
59	Other Private Insurance

'tot_charg',
 'tot_cost',
 'ratio_of_total_costs_to_total_charges','days_spend_hsptl','apr_drg_description','ccs_p
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 'ccs_diagnosis_code','hospital_id','payment_typology_1','payment_typology_2','admissi
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 'home_selfcare','code_illness','emergency_dept_yes_no','age'