Medicare Severity Diagnosis Related Groups

MS DRG

Nutrition
Comorbid Conditions

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Documentation Improvement
Shands Hospital
Florida Hospital Association
Public Reporting and Pay-for-Performance Industry / Environment Scan

"MY PATIENTS ARE SICKER THAN THE OTHERS"

- PROFILING
  - Reputation
  - Severity of Illness
  - Mortality Profile
- Consumer Driven Market
- REPORT CARDS
  - Rating tools state/national
- QUALITY MEASURES - AHRQ
  - Physician
  - Hospital
- E/M Doctor’s Reimbursement
- Hospital Reimbursement

DOCUMENTATION MUST SHOW: SEVERITY of ILLNESS

PROFILING BY:
- Federal & State Agencies
- Joint Commission
- CMS & Insurances
- PRO / QIO
- Hospitals / Employers

- General Public INTERNET
- PAY 4 PERFORMANCE
- FIVE STAR HOSPITAL/Physician

"IT IS MORE THAN P4P IT IS PART OF A MOVEMENT IT IS CALL FOR ACTION"
Trent Haywood, MD, JD -CMS

"IT WOULD ACCOUNT FOR 30% OF THE PAYMENT FROM FEDERAL PROGRAMS"
Mark McClellan, CMS Administrator
**PRINCIPAL DIAGNOSIS**

The condition/conditions established **after study** to be **chiefly responsible** for occasioning the admission of the patient to inpatient hospital care

- At the time of discharge, if DX is uncertain:
  - "**possible/probable/questionable/likely**"
    - diagnostic workup
    - initial therapeutic approach
    - arrangements for further workup or observation

**SECONDARY DIAGNOSES**

**All conditions** that coexist at the time of admission and/or that develop subsequently and require:

- Clinical evaluation **and/or**
- Therapeutic treatment **and/or**
- Diagnostic procedures **and/or**
- Extended length of hospital stay (≥1 day) **and/or**
- Require increased nursing care and/or monitoring

**POSSIBLE/PROBABLE / QUESTIONABLE/LIKELY**

- *diagnostic workup*
- *initial therapeutic approach*
- *arrangements for further workup or observation*
MEDICARE SEVERITY DIAGNOSES RELATED GROUPS

MS DRG

The Severity of Illness
based on the presence of:

MS-DRG - Established by:
- Principal Diagnosis,
- Comorbid/Complications
- Principal Procedure

745 MS DRG
- relative weight
  = severity/resources
- w/o CC or MCC
- w/ CC and/or MCC

MCC = Major Comorbid Condition
CC = Comorbid Condition
Other sec. DXs

MCC & CC LIST
DX Impacting MS DRG

- Hospital payments/ Medicare

CASE MIX INDEX - CMI

The mean (average) of relative weight for a group of patients reflecting resource utilization

- DRG-APR-DRG (All Patient Refined) = SOI & ROM
  - Severity Of Illness and Risk Of Mortality
  - All DX documented
## APR DRG – measuring SOI & ROM

<table>
<thead>
<tr>
<th>Secondary Diagnosis</th>
<th>PRINCIPAL DIAGNOSIS: CAD</th>
<th>CASE 1</th>
<th>CASE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPX-CABG</td>
<td>HX Chronic Obstructive Pulmonary Disease – symptoms/TX</td>
<td>548 CABG w/Cath w/o MCC RW.... Diff. in $ for hospital</td>
<td>Chronic Obstructive Pulmonary Disease - Exacerbation Atrial Fibrillation Pulmonary Insufficiency Acidosis Malnutrition Acute systolic HF (and Chronic) Prolonged Mechanical Ventilation (respiratory failure)</td>
</tr>
<tr>
<td>SPX-Cardiac Cath.</td>
<td>Hx of Atrial Fibrillation Dyspnea, hypoxia post surgery Prealb 9 Pulm. Edema, Cardiomegaly Diuretics, Hx of CHF /CHF exacerbation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Medicare DRG        | 548 CABG w/Cath w/o MCC RW.... Diff. in $ for hospital | 548 CABG w/Cath. w/ MCC RW..... |
| APR-DRG             | 190 CABG w/Cath | 191 CABG w/Cath. |
| APR-DRG Severity of Illness | 2 Moderate | 4 Extreme |
| APR-DRG Risk of Mortality | 1 Minor | 4 Extreme |
| Medicare Relative DRG Weight | RW 4.644 | RW 4.644 RW 6.123 |
| APR-DRG Relative Weight | 2.7930 | 3.7052 |
| National Mortality Rate (APR-DRG Adjusted) | 0.04% | 32.02% |
## 2007 RATINGS
### STROKE

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Rating</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>St Vincent’s Hospital</td>
<td>★★★★★</td>
<td>BEST</td>
</tr>
<tr>
<td>Baptist Medical Center</td>
<td>★★★★</td>
<td>AS EXPECTED</td>
</tr>
<tr>
<td>St Luke’s Hospital</td>
<td>★★★★</td>
<td>AS EXPECTED</td>
</tr>
<tr>
<td>Memorial Hospital</td>
<td>★</td>
<td>POOR</td>
</tr>
<tr>
<td>BMC Beaches</td>
<td>★★★★</td>
<td>AS EXPECTED</td>
</tr>
<tr>
<td>Shands Hospital</td>
<td>★★★★</td>
<td>AS EXPECTED</td>
</tr>
</tbody>
</table>

Inhospital Mortality (Survival)

- St Vincent’s Hospital: ★★★★★ (BEST)
- Baptist Medical Center: ★★★★ (AS EXPECTED)
- St Luke’s Hospital: ★★★★ (AS EXPECTED)
- Memorial Hospital: ★ (POOR)
- BMC Beaches: ★★★★ (AS EXPECTED)
- Shands Hospital: ★★★★ (AS EXPECTED)

Inhospital +1 month Mortality (Recovery +30) ★★★★

Inhospital +6 month Mortality (Recovery +180) ★
**MEDICARE SEVERITY DIAGNOSES RELATED GROUPS**

**How the specific documentation could influence the CMI:**

**MS DRG**

**CMI FORMULA** = \( \text{Sum of all Patients' DRGs} \times \text{RW} \)

\# inpatient patients

**FINANCIAL VIABILITY**

- Monitored by
  - *hospital finance services*
  - *CMS/OIG*
  - *Insurance Companies*
- For 1.0 - Medicare Blend Rate
- $8,000
- Other Insurances paying DRG
- List w/ MS DRG payers

<table>
<thead>
<tr>
<th>Case</th>
<th>RW</th>
<th>#cases</th>
<th>RW</th>
<th>#cases</th>
<th>RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine relate</td>
<td>0.58</td>
<td>2</td>
<td>1.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GERD</td>
<td>0.68</td>
<td>3</td>
<td>2.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest pain</td>
<td>0.55</td>
<td>6</td>
<td>3.3</td>
<td>1</td>
<td>.55</td>
</tr>
<tr>
<td>PN w/o CC</td>
<td>0.74</td>
<td>9</td>
<td>6.66</td>
<td>2</td>
<td>1.48</td>
</tr>
<tr>
<td>PN w/ CC</td>
<td>1.02</td>
<td>10</td>
<td>10.2</td>
<td>4</td>
<td>4.08</td>
</tr>
<tr>
<td>PN w/ MCC</td>
<td>1.46</td>
<td>2</td>
<td>2.92</td>
<td>6</td>
<td>8.76</td>
</tr>
<tr>
<td>C.PN w/o CC</td>
<td>1.04</td>
<td>3</td>
<td>3.12</td>
<td>1</td>
<td>1.04</td>
</tr>
<tr>
<td>C.PN w/ CC</td>
<td>1.49</td>
<td>3</td>
<td>4.47</td>
<td>7</td>
<td>10.43</td>
</tr>
<tr>
<td>C.PN w/MCC</td>
<td>2.04</td>
<td>1</td>
<td>2.04</td>
<td>5</td>
<td>10.2</td>
</tr>
<tr>
<td>Resp. Failure</td>
<td>1.37</td>
<td>1</td>
<td>1.37</td>
<td>4</td>
<td>5.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
<td>34.06</td>
<td>35</td>
<td>45.22</td>
</tr>
</tbody>
</table>

\( \frac{34.06}{35} = 0.97 \)

\( \frac{45.22}{35} = 1.29 \)
COMPREHENSIVE DOCUMENTATION

- Continuity /Support of patient care
- Accurate coding = QUALITY DATA
- Credentialing, certification, licensure
- Sets insurance premiums

- Maintains Physicians participation to Managed Care
- Legal issues - “the more, the better”
- Optimal reimbursement
- Benchmark
Types of Malnutrition

- Overnutrition
- Secondary malnutrition
- Micronutrient malnutrition
- Protein Calorie malnutrition

**A. Overnutrition**
- Too many calories leading to obesity, diabetes, hypertension and cardiovascular disease
- “Transition diets” now a consideration of WHO due to increase worldwide in chronic disease due to dietary change

**B. Secondary Malnutrition causative conditions**
- Loss of appetite (anorexia, etc), cancer
- Alteration of normal metabolism
  - during infection/fever
  - HIV/AIDS
  - Terminal diseases
- Prevention of nutrient absorption
  - Diarrheal infection causing changes in GI epithelium – Crohn, etc
- Diversion of nutrients to parasitic agents themselves
  - Hookworms, tapeworms, worms, malaria

**Key Study – Physical signs**
- Fatigue
- Muscle soreness
- Irritability
- Hunger pains
- Lack of
  - Ambition
  - Self-discipline
  - Poor concentration
- Often moody and depressed
- Less able to laugh heartily
- Less able to tolerate heat
- Heart rate decreased
- Muscle tone decreased
Role of calories

- Involuntary use:
  - breathing
  - blood circulation
  - digestion
  - maintaining muscle tone
  - body temperature
- Physical activity
- Mental activity
- Fighting disease - immunity
- Growth

Role of protein

- For building cells that make up muscles, membranes, cartilage and hair
- Carrying oxygen
- Nutrient transport
- Antibodies
- Enzymes needed for most chemical reactions in the body

What happens to people when they have inadequate amounts of food and nutrients?

- Metabolic changes
- Physiologic changes
- Psychological changes
Major Restructure of Comorbid Conditions

Metabolic Disorders

Non-CC
Malnutrition of moderate disease (non –CC)
Malnutrition of mild disease (non –CC)

CC

- **Protein-calorie malnutrition (CC)**
- Malnutrition (unspecified)

- **Malnutrition (calorie) (CC)**
  Dystrophy due to malnutrition

- **Arrested development w/ protein calorie malnutrition**
  (Nutritional dwarfism, Physical retard due to malnutrition)

MCC

- **Kwashiorkor**
  Changes in skin and hair pigment, edema, retarded growth, pathologic liver changes

- **Nutritional marasmus**

- **Nutritional atrophy**

- **Severe Calorie Deficiency**

- **Severe Malnutrition (NOS)**

- **Severe protein-calorie**
  Nutritional edema w/o dyspigmentation
**MALNUTRITION SEVERE**  
**MALNUTRITION**

Values Commonly Used to Grade the Severity of Malnutrition:

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>Degrees of mild</th>
<th>Malnutrition moderate</th>
<th>SEVERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL WT</td>
<td>85% - 90%</td>
<td>75% - 85%</td>
<td>&lt; 75%</td>
</tr>
<tr>
<td>BMI</td>
<td>18 – 18.9</td>
<td>16 – 17.9</td>
<td>&lt; 16</td>
</tr>
<tr>
<td>SERUM ALBUMIN</td>
<td>3.1 – 3.4</td>
<td>2.4 – 3.0</td>
<td>&lt; 2.4</td>
</tr>
<tr>
<td>PREALBUMIN</td>
<td>11-15</td>
<td>6-10</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

Risk Factors for Malnutrition: Terminal illness, ESRD, ESLD, AIDS, COPD, underlying infections, chronic debilitating diseases, difficulty swallowing or chewing, weight loss, depression, chronic N&V, diarrhea, etc.

**BMI FORMULA**

\[
\text{BMI} = \frac{\text{Weight in Pounds} \times 703}{\text{Height in inches}^2}
\]

**DOCUMENT the BMI:**

<table>
<thead>
<tr>
<th>BMI</th>
<th>Weight Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>Normal</td>
</tr>
<tr>
<td>25 – 29.5</td>
<td>Overweight</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>Obese</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>Morbid Obesity</td>
</tr>
</tbody>
</table>
# INTRACRANIAL HEMORRHAGE OR CEREBRAL INFRACTION

<table>
<thead>
<tr>
<th>PDX</th>
<th>Cerebral Infarction/ Stroke / Intracerebral hemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case I SDX</td>
<td>Left side weakness</td>
</tr>
<tr>
<td>Case II SDX</td>
<td>MRI – perivascular edema Left shift</td>
</tr>
<tr>
<td>Case III SDX</td>
<td>Albumin 2.3 Pre albumin 5 BMI not calculated Orders: nutrition consult Treatment / Nutrition / weight the patient</td>
</tr>
<tr>
<td>Case V SDX</td>
<td>Sacral Pressure Ulcer Stage II (poor documented) or unstageble</td>
</tr>
</tbody>
</table>

**BLENDED RATE = 8,000**
# Multiple sclerosis & cerebellar ataxia

<table>
<thead>
<tr>
<th>MS DRG</th>
<th>w/o CC/MCC</th>
<th>w/CC</th>
<th>w/MCC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
<td>59</td>
<td>58</td>
</tr>
<tr>
<td>RW</td>
<td>0.8160</td>
<td>0.9226</td>
<td>1.2669</td>
</tr>
<tr>
<td>RMB</td>
<td>6,501</td>
<td>7,350</td>
<td>10,094</td>
</tr>
<tr>
<td>PDX</td>
<td>Multiple sclerosis exacerbation</td>
<td>Multiple sclerosis exacerbation</td>
<td>Multiple sclerosis exacerbation</td>
</tr>
<tr>
<td>SDX</td>
<td>Dysuria, UA – L. E. WBC ↑, C&amp;S: E. Coli</td>
<td>T – 102, HR 120, WBC 19,000, Bandemia, BP 90/50, Blood Culture negative, BUN 50, Cr. 2.3, 2 Antibiotics Urosepsis = UTI</td>
<td>BP 90/50, RR 38, Hypoxia, Hypercapnia T 102, HR 120, WBC 19,000, Bandemia, B. Culture (-) 2AB (Severe) Sepsis ARF (spell this out) Severe Malnutrition</td>
</tr>
</tbody>
</table>

**ORDER:**
- ALBUMINE
- PREALBUMIN

**TAKE:**
- WEIGHT
- HEIGHT

**REGISTERD NUTRITIONIST Consult**

---

**Degree of Malnutrition NOT ESTABLISHED**

---

**BLENDED RATE = 8,000**
POA
MUST BE DOCUMENTED BY THE PROVIDER

YES --- NO --- U --- W

"U" - Unclear documentation as to whether the condition was POA
(should not be routinely assigned/used only in very limited circumstances)

"W" decision of the provider -- it cannot be clinically determined

Reasonably Preventable through the application of EVIDENCE-BASED guidelines
Avoidable complications

Beginning October 1, 2008, CMS cannot assign a case to a higher MDSRG based on the occurrence of one of these conditions, if the condition was acquired during hospitalization

Applies from October 1, 2008
HOSPITAL ACQUIRED CONDITIONS

- Object left in surgery (CC)
- Air embolism (MCC)
- Blood incompatibility (CC)
- Surgical Site infection/ortho device (CC) * Infection and inflammatory reaction due to orthopedic devices/implant/graft OR Other postoperative infections
  
  WITH

  Procedure:  
  - Spinal Fusion and Refusion
  - Arthroplasty: Shoulder and Elbow
  - Bariatric surgery PDX - Morbid Obesity and Postop. Infection
  
  PX: Lap/open Gastroenterostomy or gastric restrictive PX

- Catheter associated urinary tract infections (CC)
- Pressure ulcers stage III, IV (MCC) – the rest – not CC/MCC
- Vascular catheter associated infections –Central Venous Catheter (CC)
- Mediastinitis post coronary artery bypass graft (MCC)
- Falls & Trauma, Burns, Fractures, Dislocations (CC or MCC)
- Deep Vein Thrombosis or Embolism / Pulmonary Embolism / Pulmonary infarction (MCC)
  
  Procedure: Total/Partial Hip and Knee Replacement,

- Manifestation of poor glycemic control: Ketoacidosis (MCC),
  - Coma: hyperosmolar (MCC),
  - hypoglycemic (CC)
**Nervous systems neoplasm**

<table>
<thead>
<tr>
<th>MS DRG</th>
<th>MS.DRG 55 w/o MCC</th>
<th>MS.DRG 54 w/MCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW</td>
<td>1.1213</td>
<td>1.4228</td>
</tr>
<tr>
<td>RMB</td>
<td>8,934</td>
<td>11,336</td>
</tr>
</tbody>
</table>

**PDX**
- Brain Neoplasm
- Metastatic to liver, bone

**SDX**
- T – 102, HR 120, WBC 19,000, Bandemia, BP 90/50, UA-C&S – E. coli
- Blood Culture negative, BUN 50, Cr. 2.3, 2 Antibiotics
- Malnutrition – pre.alb. 5
- Wound Care Notes: sacral pressure ulcer, stage III

**Urosepsis**
- BP 90/50, RR 38, Hypoxia, Hypercapnia
- T 102, HR 120, WBC 19,000, Bandemia, B. Culture (-) 2AB
- Urosepsis = **UTI**
- Severe Malnutrition
- No mention by the doctor, or just Wound Care referral

**BLEND RATE = 8,000**
<table>
<thead>
<tr>
<th>PDX: ESRD &amp; HTN</th>
<th>Creatinine 3.4 (baseline 2.4)</th>
<th>HTN – uncontrolled</th>
<th>RD consult</th>
<th>Low Protein, low albumin, prealb. 7, supplement</th>
<th>w/o CC/MCC</th>
<th>0.9835</th>
<th>7,836</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDX: ESRD &amp; HTN</td>
<td>Creatinine 3.4 (baseline 2.4)</td>
<td>HTN – uncontrolled</td>
<td>Malnutrition</td>
<td></td>
<td>w/ CC</td>
<td>1.1942</td>
<td>9,515</td>
</tr>
<tr>
<td>PDX: ESRD &amp; HTN</td>
<td>Creatinine 3.4 (baseline 2.4)</td>
<td>HTN – uncontrolled</td>
<td>Severe Malnutrition</td>
<td></td>
<td>w/ MCC</td>
<td>1.4664</td>
<td>11,684</td>
</tr>
</tbody>
</table>
### Chronic Obstructive Pulmonary Disease

**PDX**

<table>
<thead>
<tr>
<th></th>
<th>COPD Exacerbation</th>
<th>COPD Exacerbation</th>
<th>COPD Exacerbation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case I SDX</strong></td>
<td>RR=28, Dyspnea, CO₂ 70, O₂ 65, BIPAP X-Ray abnormal, order a CT Scan</td>
<td>COPD Exacerbation RR=28, Dyspnea, CO₂ 60, O₂ 65, BIPAP Chronic Resp. Failure CT Scan: Atelectasis</td>
<td>COPD Exacerbation RR=28, Dyspnea, CO₂ 60, O₂ 65, BIPAP Post adm: acute respiratory Failure Post adm: acute respiratory Failure Post adm: acute respiratory Failure</td>
</tr>
<tr>
<td></td>
<td>Senile Dementia with Delirium</td>
<td>Senile Dementia with Delirium</td>
<td>Senile Dementia with Delirium</td>
</tr>
<tr>
<td><strong>Case II SDX</strong></td>
<td>Dementia, confusion, hallucinations</td>
<td>Senile Dementia with Delirium</td>
<td>Senile Dementia with Delirium</td>
</tr>
<tr>
<td><strong>Case III SDX</strong></td>
<td>Nutritional support ES.COPD Order prealb.</td>
<td>Malnutrition BMI &lt;18</td>
<td>Severe malnutrition</td>
</tr>
<tr>
<td><strong>Case IV SDX</strong></td>
<td>HX HIV (CD4 180) HIV/AIDS Hx PN, PCP</td>
<td>AIDS (CD4 180)</td>
<td>AIDS (CD4 180)</td>
</tr>
</tbody>
</table>

**BLEND RATE = 8,000**

<table>
<thead>
<tr>
<th>w/o CC/MCC</th>
<th>w/ CC</th>
<th>w/ MCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS DRG 192</td>
<td>MS DRG 191</td>
<td>MS DRG 190</td>
</tr>
<tr>
<td>RW 0.7254</td>
<td>RW 0.9757</td>
<td>RW 1.3030</td>
</tr>
<tr>
<td>$5,954</td>
<td>$8,008</td>
<td>$10,694</td>
</tr>
</tbody>
</table>

### PDX

- **PDX**

- **COPD Exacerbation**

- **Case I SDX**
  - RR=28, Dyspnea, CO₂ 70, O₂ 65, BIPAP X-Ray abnormal, order a CT Scan

- **Case II SDX**
  - Dementia, confusion, hallucinations

- **Case III SDX**
  - Nutritional support ES.COPD Order prealb.

- **Case IV SDX**
  - HX HIV (CD4 180) HIV/AIDS Hx PN, PCP