

Prometheus Tool

Hospital Users Guide

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CHASE

Colorado Healthcare Affordability and
Sustainability Enterprise

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I. Background

Optumas has run both fee-for-service (FFS) claims and managed care encounters, with incurred dates from SFY14 - SFY18, through the PROMETHEUS tool, an industry-standard episode of care grouper developed by Altarum. PROMETHEUS uses detailed clinical algorithms to group claims and encounter data into episodes of care and compares the services provided, outcomes, and associated costs against clinically determined best practices to identify any inefficiencies in the form of Potentially Avoidable Complications (PAC).

The results from the PROMETHEUS tool can be used in actuarial, clinical, contractual, and operational settings. Optumas has been working with HCPF to analyze PAC rates and the distribution thereof among the 97 different episodes for various programs and provider groups within Colorado Medicaid. The PROMETHEUS tool groups claims and encounters into episodes of care based on clinical definitions of look-back and look-forward time periods centered around typical trigger claims and services for each type of episode.

II. What are Episodes?

Episodes include all clinically related services for a discrete condition/ procedure for the entire continuum of care - management, surgery, ancillary, labs, Rx, etc., - for a given time frame.

- Each service within an episode is considered either **Typical** or **Potentially Avoidable**
- Episodes have been defined and refined with volunteer clinical experts assembled in Clinical Working Groups
- Fully consistent with NQF recommendations on “groupers”
- Some episodes have been influenced more by provider participant input because of ongoing implementations in other states using PROMETHEUS
 - ✓ Maternity
 - ✓ Orthopedic procedures
 - ✓ Behavioral Health episodes
- Each episode can be assigned to an attending provider (found on the episode’s trigger event claim), such as the surgeon in the hospital

- Each episode can have multiple rendering providers who provided secondary/ downstream care
- An individual member can have multiple episodes simultaneously, but there can only be one member involved in each episode



III. Overview of Episode Parameters and Components

Relevant Procedure (Px) Codes - CPT, HCPCS, ICD procedure codes

Relevant Diagnosis (Dx) Codes - Only looks at primary Dx on hospital claims; on non-hospital claims, can look at Dx codes in any position, depending on the situation.

1. Complication - avoidable complications for the episode
 - Directly due to the condition/treatment, such as wound infection after surgery
 - Patient safety issues such as drug-drug interactions, deep vein thrombosis
2. Typical - signs and symptoms such as chest pain, shortness of breath

Relevant Pharmacy (Rx) Codes - Pharmacy considered typical service unless it's related to a potentially avoidable hospitalization.

Episode Type - System-Related Failure (SRF), Chronic, Other (cancers), Acute, or Procedural; **hospitals are currently measured only on Procedural episodes.**

Associations - Episodes are related to one another through defined clinical associations that have been categorized into 5 levels

Trigger Codes - Procedure and/or diagnosis codes that clearly identify the presence of a condition, treatment, illness or injury, e.g., spine procedure code (ICD proc/CPT code).

- Never require multiple diagnosis codes to trigger
- Sufficient procedure codes do not need to be accompanied by diagnosis code

Confirmation Claim - Pharmacy or Evaluation & Management claim (E&M) claim with same relevant diagnosis code → required because providers sometimes utilize temporary diagnosis codes on claims while they're ruling out potential diagnoses → don't want to consider the process of ruling out diagnosis same as trigger event for episode.

Episode Window - Defines the start and end of an episode.

- Episode parameters do NOT vary by subtype

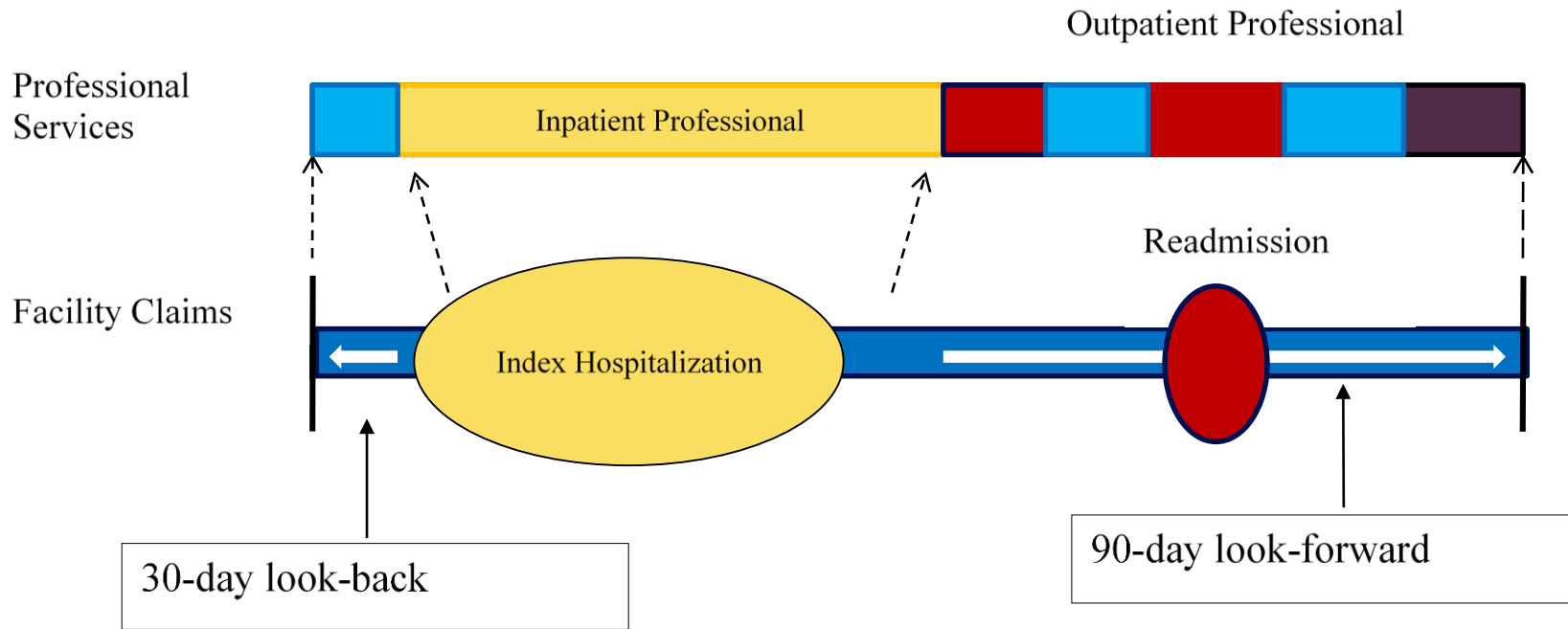
Potentially Avoidable Complications (PACs) - Based on Service Assignments of Typical, Typical with Complications, or Complication.

- Negatively affect patients and (potentially) avoidable (errors, readmissions, etc.)
 - ✓ Identified on outpatient and professional claims and encounters
 - ✓ IP costs are excluded from PAC costs because model can't tease out which services were included under DRG

Subtypes - Distinguish a category of a condition, treatment, illness or injury.

- For example: diabetes type 1 vs. type 2 or community-acquired pneumonia vs. viral pneumonia
- Episode parameters do NOT vary by subtype

IV. Assembling Components for Inpatient Procedural Episode



Key:



Claims with potentially avoidable complications (PACs)



Claims for typical care and services



Irrelevant

V. Episode Associations

- Entire episodes can be associated as **Typical** or **Complication**
- Timing and order of events are used to identify associations in addition to clinical relevance
- You can assign accountability to different providers by focusing on different association levels
- Episode to episode associations for all episodes can be found in *Exhibit A - Episode Associations*

Level 1 - All episodes are triggered, and all service assignments occur

Level 2 - Used to merge typical associations within an episode family (e.g. cardiac, GI) and category (procedural or acute)

Level 3/Hospitals - Used to complete **procedural** episodes, including all complication associations and all remaining typical associations

Level 4 - Used to complete **acute** episodes, including all complication associations and all remaining typical associations

Level 5/PCMPs and RAEs - Used to complete **chronic** episodes, including all complication associations and all remaining typical associations

VI. Levels of Association Example

TKR = Total Knee Replacement; OA = Osteoarthritis; CAD = Coronary Artery Disease; AMI = Acute Myocardial Infarction;
PCI = Percutaneous Coronary Intervention, Diab = Diabetes, CABG = Coronary Artery Bypass Grafting

VII. Episode Triggers

A. Procedural Episode Triggers

Three ways to trigger a procedural episode:

1. **Inpatient (IP) Stay** - Trigger procedure code in the principal position AND qualifying diagnosis code in the principal position
2. **Outpatient (OP) Facility** - Trigger procedure code in any position AND qualifying diagnosis code in any position
3. **Professional** - Trigger procedure code in any position AND qualifying diagnosis code in any position

Episode window for **procedural** episodes:

- Look-back period: 30 days prior to trigger date
- Look-forward period: 90 days post discharge (if IP stay) or 90 days postdate of procedure if non-inpatient - deliveries are 60 days post discharge
- Some procedures have shorter look-forward periods (e.g., colonoscopies)

B. Vaginal Delivery Episode Triggers

Three ways to trigger a **vaginal delivery** episode:

1. **Inpatient Stay** - Trigger procedure code in any position
 2. **Outpatient Facility** - Trigger procedure code in any position
 3. **Professional** - Trigger procedure code in any position
- Pregnancy Episode Triggers

Episode window for vaginal delivery episodes:

- Look-back period: 3 days prior to trigger date
- Look-forward period: 60 days post discharge (if IP stay trigger)

C. Pregnancy Episode Triggers

- Pregnancy episode is only triggered by the presence of a delivery episode. All delivery episodes automatically trigger a pregnancy episode
- Episode window for maternity episodes
 - ✓ Look-back period: 300 days prior to delivery trigger date
 - ✓ Look-forward period: No look-forward period

- Pregnancy can be looked at separately or in conjunction with the delivery (at level 5)

Episode	Look-Back	Look-Forward	Age Range	Maximum Eligibility Gap
PREGN	300 days	0 days	12-65	>30 days
VAGDEL	3 days	60 days	12-65	>0 days
C-SECT	3 days	60 days	12-65	>0 days

- Episodes are created but are filtered for analysis; general rule is episodes >90 days in duration allow up to a 30-day gap, episodes < 90 days in duration do not allow any gap
- **Most** other procedures and chronic conditions are **18-65 age limit**
- Episode parameters do **NOT** vary by subtype
- Exhibit B in the Appendix includes parameters for procedural episodes

VIII. Level 3 Procedural - Episode Definitions and Descriptions

Click on the hyperlinks below and use password IcARingYrU to access episode definitions.

[Bariatric Surgery](#)

[Breast Biopsy](#)

[CABG &/or Valve Procedures](#)

[Cataract Surgery](#)

[Colonoscopy
Colonoscopy
Handout](#)

[Colorectal Resection](#)

[Coronary Angioplasty](#)

[C-Section
Maternity Handout](#)

[Gall Bladder Surgery](#)

[Gall Bladder
Handout](#)

[Hip Replacement & Hip Revision](#)

[Hysterectomy](#)

[Knee Arthroscopy](#)

[Knee Replacement & Knee Revision](#)

[Lumbar Laminectomy](#)

[Lumbar Spine Fusion](#)

[Lung Resection](#)

[Mastectomy](#)

[Pacemaker/Defibrillator](#)

[Prostatectomy](#)

[Shoulder Replacement](#)

[Tonsillectomy](#)

[Transurethral Resection Prostate](#)

[Upper GI Endoscopy
Upper GI Handout](#)

[Vaginal Delivery
Maternity Handout](#)

IX. What are PACs?

- Potentially avoidable complications (PACs) offer a powerful and detailed feedback loop to engage in process improvement through comparisons and root cause analysis
- Guiding principles in identifying them include “potential” for avoidance; negative impact on member

X. PAC Determination and Measurement

PAC Costs capture all costs of PACs occurring during the episode for which payments can be fully differentiated from those for typical services.

Services can be assigned to one of three categories based on the presence or lack of complication codes:

1. **Typical (T)** - Includes evidence-informed services related to care for the episode.
e.g., anesthesia, implant, physical therapy for joint replacements
2. **Typical with Complication (TC)** - Services that contain a complication diagnosis code but would have occurred anyway without the presence of the complication.

Dollars not included in PAC costs, but services count as PACs for PAC counts
e.g., DVT, infection for joint replacements

3. **Complication (C)** - Also known as Potentially Avoidable Complications or PACs.

Services/costs that are potentially avoidable (as identified by complication diagnosis codes and timing)

A. Inpatient and Outpatient Service Assignment Rules

Assignment Rule	Requirements	Complication Code	Assignment
IP procedural episode triggers	Principal trigger procedure code and principal qualifying diagnosis code	1. Secondary complication code 2. No complication code	1. Typical with Complication 2. Typical
Index stays that do not trigger procedural episodes but overlap with professional trigger	Fall within 1 day of the procedure's professional trigger claim; principal diagnosis code is relevant	1. Secondary complication code 2. No complication code	1. Typical with Complication 2. Typical
Same day transfers	Second or subsequent IP stay at an acute facility within 1 day of previous IP stay	N/A	Typical, Typical with Complication or Complication based on the prior IP stay's assignment

Assignment Rule	Requirements	Complication Code	Assignment
Post-acute IP stays	Rehab or long-term facility; Principal diagnosis code is relevant	1. Principal complication code 2. Secondary complication code 3. No complication code	1. Complication 2. Typical with Complication 3. Typical
Readmissions	IP stay 2 or more days after initial IP stay or OP claim; Principal diagnosis code is relevant	N/A	Complication
IP stays in the look-back window	IP stay in the look-back window; Principal diagnosis code is relevant	N/A	Typical
Pharmacy claims	Pharmacy code is relevant	N/A	Typical
Inpatient bubble (professional services during an IP stay)	Overlap with IP stay; Diagnosis code that is relevant	1. Yes 2. No	1. Complication 2. Typical
OP/Prof potential procedural episode triggers	Procedural trigger code and qualifying diagnosis code	1. Yes 2. No	1. Typical with Complication 2. Typical
OP/Prof complications	Service in the look-forward window; Diagnosis code that is a complication	Yes	Complication
OP/Prof typical services	Service in the look-forward window; Diagnosis code that is typical and procedure code that is relevant OR procedure code that is sufficient (with or without relevant diagnosis code)	No	Typical
OP/Prof services in the look-back window	Service in the look-back window; Diagnosis code that is a complication OR Diagnosis code that is typical and procedure code that is relevant OR procedure code that is sufficient (with or without relevant diagnosis code)	N/A	Typical

B. Split vs. Unsplit PAC Costs

The same claims are often assigned to multiple episodes. Since the dashboard contains claim-level data for all episodes, a given claim will appear more than once in the detail underlying the dashboard.

1. Split Dollars

Total dollars on a given claim are divided by the number of times a claim is used in the model.



- **Strength:** Allows user to sum dollars across all episodes and get back to the original cost when looking at all episodes, at the same level since dollars are not duplicated; however, it is fundamentally difficult to tie back to other reports of expenditures because the tool does not process and group 100 percent of the claims into episodes in the first place. All data underlying the dashboard already constitutes less than half of what was originally fed into the tool
- **Weakness:** As you start to limit the number of episodes being evaluated, the split dollars will understate the total costs because you are likely dropping off some of the occurrences within episodes necessary to get back to the true total

2. Unsplit Dollars



- **Strength:** Accurately shows costs when looking at a single episode
- **Weakness:** As you include more episodes in your view, the level of duplication will increase and the sum of unsplit dollars will **overstate the true total costs**

As a general rule, when analyzing a single episode in isolation, using unsplit costs is preferable; however, when looking in aggregate across multiple episodes, using the split costs is preferable.

C. PAC Supergroups

A claim is assigned as Potentially Avoidable Complication (PAC) in one of 4 ways. The claim:

1. Has a PAC code, or
2. is labeled a PAC by rule, or
3. is rolled into an episode at a higher level as part of a typical episode roll-up but has a PAC code on it, or
4. the entire episode is rolled in as a PAC by association

D. PAC Codes and Super Groups

Claims with PAC codes are assigned to PAC super groups by matching the ICD 9 or 10 Diagnosis (DX/DXX) codes that are PACs in the episode definitions.

E. PACs by Association

For episodes that roll in as typical but contain PAC costs, the PAC portion of the episode (costs only) all into the “PACs by association” super group. If a non-System Related Failure (SRF) episode is rolled in as a PAC, all the costs of that episode are assigned to the “PACs by association” super group.

F. Type 2 PACs

System Related Failures (SRFs) that roll into the Sick Care episode are assigned to the “Type 2 PACs” super group.

G. PAC Rules

Inpatient PACs due to rules are assigned to:

- “Hospitalizations related to Ambulatory Care Sensitive Conditions (ACSC)” super group or
- “Readmissions” PAC super group”

PAC codes are episode specific diagnosis codes defined by PROMETHEUS methodology as a complication

Type 2 PACs are PACs that may indicate system related failures akin to the CMS Hospital Acquired Conditions (HACs)

1. PAC Super Groups by Code:

super_group_name	group_id
Acute Flare-up of Index Condition	DX03252, DX03253, DX03257, DX03266, DX04123, DXX03252, DXX03253, DXX03257, DXX03258, DXX03266, DXX03268, DXX03280, DXX0374, DXX04123, DXX04198
Acute Renal Failure, Other kidney problems	DX07110, DX11142, DX1149, DX1429, DXX07110, DXX11142, DXX11163, DXX1150, DXX14110
Adverse Drug Events, Complications of Medical Care	DX01403, DX11144, DX16294, DX16297, DX1770, DX2159, DX2171, DX2172, DX2362, DXX01403, DXX11144, DXX16294, DXX16297, DXX1770, DXX2138, DXX2156, DXX2158, DXX2159, DXX2171, DXX2172, DXX2362, XXOOOO
Alcohol, SUDS, Mental and Behavioral Health Problems	DX0016, DX01402, DX1948, DX1949, DX1950, DX1952, DX1971, DX1974, DX1985, DX2008, DX2010, DX2011, DX2017, DX2021, DX2022, DX2023, DX2166, DX2167, DX2169, DXX01402, DXX1948, DXX1949, DXX1950, DXX1952, DXX1953, DXX1971, DXX1974, DXX2008, DXX2010, DXX2011, DXX2013, DXX201 DXX2021, DXX2022, DXX2025, DXX2026, DXX202 DXX2029, DXX2033, DXX2035, DXX2037, DXX2117, DXX2127, DXX2166, DXX2169, DXX2354
Complications directly related to Index Procedure	DX02138, DX02145, DX02147, DX02165, DX03248, DX04160, DX05317, DX081082, DX09187, DX09190, DX11149, DX11151, DX13108, DX13112, DX1423, DX1426, DX1439, DX1446, DX16295, DX16296, DX2360, DX2361, DX2366, DX9909, DX9917, DXX02138, DXX02145, DXX02147, DXX02165, DXX03248, DXX04160, DXX05317, DXX081029, DXX081082, DXX09187, DXX09190, DXX11149, DXX11151, DXX13108, DXX13112, DXX1423, DXX1426, DXX1439, DXX1446, DXX16295, DXX16296, DXX2360, DXX2361, DXX2366, DXX9909, DXX9917
Diabetic Emergency, Endocrine & Nutritional Problems	DX10109, DX10110, DX1030, DX1062, DX1063, DX1064, DX1066, DX11146, DX16293, DX9914, DXX02179, DXX10102, DXX10109, DXX10110, DXX10111, DXX1030, DXX1062, DXX1063, DXX1064, DXX1066, DXX16293, DXX9914
Falls, Acute osteomyelitis, Orthopedic problems	DX0007, DX0009, DX0010, DX0012, DX0020, DX081034, DX081038, DX081039, DX081043, DX081068, DX081069, DX081070, DX081071, DX081072, DX081083, DX081084, DX081090, DX09205, DX11137, DX2164, DX2165, DXX0007, DXX0009, DXX0010, DXX0012, DXX0020, DXX081034, DXX081038, DXX081039, DXX081043, DXX081068, DXX081069, DXX081070, DXX081071, DXX081072, DXX081084, DXX09205, DXX11137, DXX2164, DXX2165
Fluid and Electrolyte disturbances, Syncope, Collapse, DIC	DX05272, DX05298, DX05345, DX05274, DX16248, DX9910, DX9911, DXX05272, DXX05298, DXX05345, DXX05274, DXX16248, DXX9910, DXX9911
Gastritis, Ulcer, GI Hemorrhage, Abdominal Pain, Hepatotoxicity	DX06267, DX06268, DX06272, DX06274, DX06275, DX06276, DX06301, DX06306, DX06307, DX06311, DX06312, DX06313, DX06314, DX06315, DX06317,DX06327,DX06335,DX06337,DX06338,DX06347,DX06352, DX06353, DX06354, DX06355, DX0704, DX07114, DX07115, DX07118, DX0713, DX0717, DX0718, DX09201, DX1546, DX1854, DXX06268, DXX06274, DXX06276, DXX06301, DXX06306, DXX06307, DXX06311,

super_group_name	group_id
	DX06313, DX06314, DX06315, DX06317, DX06335, DX06337, DX06338, DX06347, DX06352, DX06353, DX06354, DX06369, DX06372, DX06373, DX06374, DX06379, DX06380, DX0704, DX07114, DX07115, DX07118, DX07120, DX0713, DX0717, DX0718, DX09208, DX1546, DX1854
Phlebitis, DVT, Pulm Embolism, Arterial Thromboembolism	DX05264, DX05275, DX05307, DX05308, DX05309, DX05311, DX1436, DX05264, DX05275, DX05307, DX05308, DX05309, DX05311, DX05355, DX05360, DX14107, DX14108, DX14109, DX1436
Pneumonia, Lung Complications, Respiratory Failure	DX03254, DX03264, DX03269, DX03270, DX03271, DX04127, DX04129, DX04130, DX04131, DX04138, DX04142, DX04154, DX04155, DX04157, DX04161, DX04162, DX04164, DX04165, DX04170, DX04172, DX04173, DX04174, DX04175, DX04176, DX04177, DX04187, DX04188, DX04189, DX04190, DX07109, DX03254, DX03264, DX03271, DX03278, DX04127, DX04129, DX04130, DX04138, DX04142, DX04154, DX04155, DX04157, DX04161, DX04162, DX04164, DX04165, DX04170, DX04172, DX04173, DX04174, DX04175, DX04176, DX04177, DX04187, DX04188, DX04189, DX04190, DX0489, DX07109
Pressure Sores, Cellulitis, Skin Infections	DX0008, DX0011, DX0014, DX0017, DX02128, DX081091, DX09191, DX09192, DX09193, DX09194, DX09195, DX09202, DX1437, DX2170, DX22274, DX9912, DX0008, DX0011, DX0014, DX0017, DX0019, DX02128, DX081091, DX09191, DX09192, DX09193, DX09194, DX09195, DX09202, DX14111, DX2170, DX22274, DX9912
Sepsis, Urinary Tract & other Hospital Acquired Infections	DX0004, DX0018, DX01391, DX03251, DX06305, DX11143, DX1432, DX1433, DX1846, DX1849, DX1850, DX1851, DX1852, DX1853, DX1855, DX2161, DX9915, DX9916, DX0004, DX0018, DX01391, DX03251, DX06305, DX11143, DX1432, DX1433, DX1846, DX1849, DX1850, DX1851, DX1852, DX1853, DX1855, DX2161, DX9915, DX9916
Shock, Cardiac Arrest, Cardiac Dysrhythmias, AMI	DX05281, DX05289, DX05291, DX05293, DX05294, DX05297, DX05299, DX05302, DX05303, DX05313, DX05314, DX05316, DX05320, DX05323, DX05329, DX05331, DX05335, DX05336, DX05339, DX05340, DX05342, DX05343, DX05346, DX05347, DX2367, DX0510, DX05281, DX05289, DX05291, DX05293, DX05297, DX05299, DX05303, DX05313, DX05314, DX05316, DX05320, DX05323, DX05329, DX05331, DX05335, DX05336, DX05339, DX05340, DX05342, DX05343, DX05347, DX2367
Stroke, CVA, Delirium, Coma	DX01384, DX01385, DX01388, DX01390, DX01392, DX01395, DX01400, DX01401, DX01404, DX01409, DX07108, DX07117, DX01384, DX01385, DX01388, DX01390, DX01392, DX01395, DX01401, DX01404, DX01409, DX01413, DX07108, DX07117, DX07119, DX19103

super_group_name	group_id
Urinary and Genital Complications	DX11145, DX11147, DX11150, DX11152, DX11153, DX11154, DX11155, DX1265, DX1267, DX1302, DX1306, DX13106, DX13114, DXX11145, DXX11147, DXX11150, DXX11153, DXX11154, DXX1265, DXX1267, DXX1302, DXX1306, DXX13106, DXX13114
Visual Impairments & Other Eye Complications	DX02120, DX02121, DX02122, DX02124, DX02125, DX02129, DX02130, DX02131, DX02133, DX02135, DX02136, DX02137, DX02140, DX02141, DX02146, DX02149, DX02150, DX02151, DX02152, DX02163, DX02164, DX02166, DX02167, DX02169, DX02170, DX02171, DX02174, DX02175, DXX02119, DXX02120, DXX02121, DXX02122, DXX02124, DXX02125, DXX02129, DXX02130, DXX02131, DXX02133, DXX02135, DXX02136, DXX02137, DXX02140, DXX02141, DXX02146, DXX02149, DXX02150, DXX02151, DXX02152, DXX02164, DXX02169, DXX02171, DXX02174, DXX02175, DXX02177
Complications during labor, delivery, puerpium	DX1409, DX1418, DX1421, DX1424, DX1425, DX1427, DX1428, DX1430, DX1431, DX1434, DX1435, DX1440, DX1442, DX1444, DX1536, DX1577, DX1578, DXX1409, DXX14105, DXX14106, DXX1413, DXX1418, DXX1421, DXX1424, DXX1425, DXX1427, DXX1428, DXX1430, DXX1434, DXX1435, DXX1440, DXX1442, DXX1444, DXX1536
Complications during pregnancy	DX1412, DX1438, DX1451, DX1452, DX1471, DXX14104, DXX1451, DXX1471
Complications to NB	DX1441, DX1469, DX1537, DX1538, DX1539, DX1540, DX1541, DX1542, DX1543, DX1545, DX1547, DX1548, DX1549, DX1550, DX1551, DX1552, DX1584, DXX1469, DXX1537, DXX1538, DXX1539, DXX1540, DXX1541, DXX1542, DXX1543, DXX1545, DXX1547, DXX1548, DXX1549, DXX1550, DXX1551, DXX1552, DXX1584, DX1544, DXX1544

2. PAC Super Groups by Rule or Association:

New super group	Definition
Hospitalizations related to ACSC (ambulatory care sensitive conditions)	Chronic and "other" episode stays related to index condition
Readmissions	Procedural episode related readmissions
Type 2 PACs	All SRFs that are rolled into sick care will fall into this super group
PACs from Associated Episodes	Associated Episodes that roll in as PACs (acute and procedural) Associated episodes that roll in as Typical but have PAC codes on them

H. Types of PACs

- Type 1: PACs related to the index condition (e.g. ED visit for diabetic emergency such as hypo/ hyperglycemia in a diabetic member)
 - ✓ Best controlled by managing provider
- Type 2: PACs suggesting member safety failures (e.g. adverse drug events, such as drug interactions in a diabetic member)
 - ✓ Includes CMS-defined HACs (Hospital Acquired Conditions)
 - ✓ Best controlled by process improvement

I. Identification of PACs

PACs are identified from the claims assigned to an episode in one of two ways:

- The ICD9/10 diagnosis codes
- Type of claim (e.g., readmission or admission in **chronic** episodes)

1. Inpatient and Outpatient Procedures

- PACs during the index procedure (or during the stay for inpatient procedures)
- Readmissions
- Other PACs in the post-discharge period

2. Identification of Readmissions as PAC

- Readmissions are PACs and are specific to the episode, identified from diagnosis codes relevant to the episode
- More specific than common “all-cause” measure in use by Medicare and others
- All costs related to the readmission are categorized at PAC (includes Rx during readmission)

XI. Technical Reporting Adjustments

A. Annualization and Measurement Periods

- The PROMETHEUS tool requires at least two years of incurred claims data to be run through the tool to produce reliable results
- Data runs consisting of a **single year of claims/encounters do not produce reliable results** from which HCPF would be able to make accurate quality incentive payments. This is because the tool **does not have sufficient data to construct complete episodes**, especially for the chronic episodes
- The best short-term approach is to split results into individual years based on the service dates of the underlying incurred claims for each episode, producing three separate datapoints (one for each Y). Claims that make up the episode would be grouped according to their incurred dates. This approach ensures that the reporting period experience is complete on an incurred basis, even though episodes may not retain all associated claims experience
 - ✓ It is important to note that there is significant drop in episode volume within both the left and right tails of the time period submitted through the tool, due to the look-back and look-forward time periods centered around typical trigger claims and services as defined for the episode the tool identifies

B. Index Score Development and Statistical Significance

1. Peer Groups

Hospitals are categorized into four (4) peer groups based on current bed size. This is an effort to recognize that hospitals of different sizes may be predisposed to certain episodes, i.e., larger hospitals may have more specialized services than smaller hospitals, and to align the weights and index score calculation as such. The peer groups are: Bed Count: <26, Bed Count: 26 - 99, Bed Count: 100 - 299, Bed Count: > 299.

Index Scores should only be compared between hospitals that are in the same peer group.

2. Index Score

The Index Score is calculated for each individual hospital using the following steps. Each step will be described in more detail below the summary.

Summary of Index Score Calculation Steps

1. Calculate peer group-specific Episode Weights and Baseline Raw Scores
2. Calculate hospital-specific PAC %
3. Calculate Hospital Index Score
4. Calculate Index Score Outliers
5. Repeat Steps 1-4 in iteration until no Index Score Outliers remain

Summary of Index Score Credibility Analysis Steps

Index Score Credibility Analysis requires an intermediate level of statistical knowledge.

6. Run bootstrapping statistical sampling for increasing number of Iteration Scenarios: 10, 50, 100, 200, 300, 400, 500
7. Calculate Sample Hospital Index Scores
8. Calculate key statistics from Sample Hospital Index Scores
9. Use Full Credibility Formula to determine credibility of Mean Index Score for each Iteration Scenario
10. Calculate Confidence Interval around Mean Index Score for credible Iteration Scenarios based on result from Step 9
11. Determine final list of hospitals that have a credible Hospital Index Score from Step 5

The examples provided for Index Score Calculation and Index Score Credibility are rounded for the purposes of this document. Reproduction of the same examples may yield slightly different results due to rounding.

3. Walkthrough of Index Score Calculation Steps

Index Scores should only be compared between hospitals that are in the same peer group.

Step 1: Calculate peer-group specific Episode Weights and Baseline Raw Scores

The following calculations are specific to each procedural episode and are across all hospitals within a peer group:

- a. Calculate Total Episode Paid Dollars
- b. Calculate Total Episode PAC Dollars
- c. Calculate Episode PAC % = Total Episode PAC Dollars divided by Total Episode Paid Dollars
- d. Calculate Simple Average PAC Dollars = simple average of Total Episode PAC Dollars across procedural episodes within a peer group
- e. Calculate Simple Average PAC % = simple average of Episode PAC % across procedural episodes within a peer group
- f. Calculate Episode PAC Dollar Relativity = Total Episode PAC Dollars divided by Simple Average PAC Dollars
- g. Calculate Episode PAC % Relativity = Episode PAC % divided by Simple Average PAC %
- h. Calculate Peer Group Episode Weight = Episode PAC Dollar Relativity multiplied by Episode PAC % Relativity
- i. Calculate Peer Group Baseline Raw Score = Episode PAC % multiplied by Weight

Example Calculation for Episode Weights and Baseline Raw Scores is for illustrative purposes only.

Episode Category	Total Episode Paid Dollars (1a)	Total Episode PAC Dollars (1b)	PAC % (1c)=(1b)/(1a)	Simple Average PAC Dollars (1d)	Simple Average PAC % (1e)
Tonsillectomy	\$950,000	\$400,000	42.1%	\$242,857	18.0%
Coronary Angioplasty	\$650,000	\$350,000	53.8%	\$242,857	18.0%
Vaginal Delivery	\$4,000,000	\$450,000	11.3%	\$242,857	18.0%
Gall Bladder Surgery	\$3,000,000	\$200,000	6.7%	\$242,857	18.0%
Upper GI Endoscopy	\$1,650,000	\$100,000	6.1%	\$242,857	18.0%
Hysterectomy	\$2,650,000	\$100,000	3.8%	\$242,857	18.0%
Knee Arthroscopy	\$4,350,000	\$100,000	2.3%	\$242,857	18.0%

Episode Category	Episode PAC Dollar Relativity (1f)=(1b)/(1d)	Episode PAC % Relativity (1g)=(1c)/(1e)	Peer Group Episode Weight (1h)=(1f)*(1g)	Peer Group Baseline Raw Score (1i)=(1h)*(1c)
Tonsillectomy	1.65	2.34	3.85	1.62
Coronary Angioplasty	1.44	2.99	4.31	2.32
Vaginal Delivery	1.85	0.62	1.16	0.13
Gall Bladder Surgery	0.82	0.37	0.31	0.02
Upper GI Endoscopy	0.41	0.34	0.14	0.01
Hysterectomy	0.41	0.21	0.09	0.00
Knee Arthroscopy	0.41	0.13	0.05	0.00

Step 2 Calculate hospital-specific PAC %

The following calculations are specific to each procedural episode for each individual hospital:

- Calculate Hospital Episode Paid Dollars
- Calculate Hospital Episode PAC Dollars
- Calculate Hospital Episode PAC % = Hospital Episode PAC Dollars divided by Hospital Episode Paid Dollars

Example Calculation for Hospital Episode PAC % is for illustrative purposes only.

Episode Category	Hospital Episode Paid Dollars (2a)	Hospital Episode PAC Dollars (2b)	Hospital Episode PAC % (2c)=(2b)/(2a)
Tonsillectomy	\$380,000	\$80,000	21.1%
Coronary Angioplasty	\$195,000	\$140,000	71.8%
Vaginal Delivery	\$1,600,000	\$225,000	14.1%
Gall Bladder Surgery	\$600,000	\$40,000	6.7%
Upper GI Endoscopy	\$660,000	\$40,000	6.1%
Hysterectomy	\$0	\$0	N/A
Knee Arthroscopy	\$1,740,000	\$50,000	2.9%

Step 3 Calculate Hospital Index Score

The following calculations are specific to each individual hospital:

- Calculate Episode Raw Score = Peer Group Episode Weight multiplied by Hospital Episode PAC %
- Calculate Hospital Total Baseline = sum of all Peer Group Baseline Raw Scores for procedural episodes where hospital had historic experience
- Calculate Episode Index Score = Episode Raw Score divided by Hospital Total Baseline multiplied by 100

Episode Category	Peer Group Episode Weight (1h)	Hospital Episode Pac % (2c)	Episode Raw Score (3a)=(1h)*(2c)	Hospital Total Baseline (3b)=Sum (1i) ¹	Episode Index Score (3c)=(3a)/(3b)*(100)
Tonsillectomy	3.85	21.1%	0.81	4.10	19.76
Coronary Angioplasty	4.31	71.8%	3.10	4.10	75.42
Vaginal Delivery	1.16	14.1%	0.16	4.10	3.97
Gall Bladder Surgery	0.31	6.7%	0.02	4.10	0.50
Upper GI Endoscopy	0.14	6.1%	0.01	4.10	0.20
Hysterectomy	0.09	N/A	N/A	N/A	N/A
Knee Arthroscopy	0.05	2.9%	0.00	4.10	0.04

Step 4: Calculate and remove Index Score Outliers

The following calculations are specific to each individual hospital:

- Summarize the number of individual episodes by episode type
- Calculate Index Score per Episode = Episode Index Score / Number of Episodes
- Remove all episodes for an episode category that has an Index Score per Episode over the outlier threshold.
 - This is an effort to remove a small number of episodes that generate a high portion of the Hospital Index Score.
 - Please note that not all hospitals will have episodes removed during this process.
- All episodes for Index Score Outliers will be removed for each hospital

Example Calculation of Index Score Outliers is for illustrative purposes only.

Episode Category	Number of Episodes (4a)	Episode Index Score (3c)	Index Score per Episode (4b)=(3c)/(4a)	Flag Outliers (4c)	New Number of Episodes (4d)
Tonsillectomy	200	19.76	0.10		200
Coronary Angioplasty	10	75.42	7.54	Y	-0-
Vaginal Delivery	300	3.97	0.01		300
Gall Bladder Surgery	100	0.50	0.00		100
Upper GI Endoscopy	300	0.20	0.00		300
Hysterectomy	0	N/A	N/A		N/A
Knee Arthroscopy	500	0.04	0.00		500

The outlier threshold was set to 5.0 in this example. This may vary from the final outlier threshold used for the Index Score calculation.

¹ Hospital Total Baseline shown in (3B) is the sum of all Peer Group baseline Scores from (1i) for episodes where the hospital had experience. In this example, the Peer Group Baseline Raw Score for Hysterectomy would not be included in the Hospital Total Baseline.

Step 5: Repeat Steps 1-4 in iteration until no Index Score Outliers remain

Steps 1-4 will be recalculated after the Index Score Outliers are removed from each hospital, where applicable. This will recalibrate the Peer Group Episode Weight and Peer Group Baseline Raw Score used to calculate the Episode Index Score and Hospital Index Score.

This process will repeat in iteration until no Index Score Outliers remain. Once that has been completed, the final Hospital Index Score is calculated as the sum of all Episode Index Scores. This is shown as (5A) at the end of the example calculation below.

The following tables represent the same examples from above in Steps 1-3, assuming the only Index Score Outliers are for the example hospital for Coronary Angioplasty.

Example re-calculation of steps 1-4 after removing Index score outliers - for illustrative purposes only.

Episode Category	Total Episode Paid Dollars (1a)	Total Episode PAC Dollars (1b)	PAC % (1c)=(1b)/(1a)	Simple Average PAC Dollars (1d)	Simple Average PAC % (1e)
Tonsillectomy	\$950,000	\$400,000	42.1%	\$222,857	16.9%
Coronary Angioplasty	\$455,000	\$210,000	46.2%	\$222,857	16.9%
Vaginal Delivery	\$4,000,000	\$450,000	11.3%	\$222,857	16.9%
Gall Bladder Surgery	\$3,000,000	\$200,000	6.7%	\$222,857	16.9%
Upper GI Endoscopy	\$1,650,000	\$100,000	6.1%	\$222,857	16.9%
Hysterectomy	\$2,650,000	\$100,000	3.8%	\$222,857	16.9%
Knee Arthroscopy	\$4,350,000	\$100,000	2.3%	\$222,857	16.9%

Episode Category	Episode PAC Dollar Relativity (1f)=(1b)/(1d)	Episode PAC % Relativity (1g)=(1c)/(1e)	Peer Group Episode Weight (1h)=(1f)*(1g)	Peer Group Baseline Raw Score (1i)=(1h)*(1c)
Tonsillectomy	1.79	2.49	4.47	1.88
Coronary Angioplasty	0.94	2.73	2.57	1.19
Vaginal Delivery	2.02	0.67	1.34	0.15
Gall Bladder Surgery	0.90	0.39	0.35	0.02
Upper GI Endoscopy	0.45	0.36	0.16	0.01
Hysterectomy	0.45	0.22	0.10	0.00
Knee Arthroscopy	0.45	0.14	0.06	0.00

Episode Category	Hospital Episode Paid Dollars (2a)	Hospital Episode PAC Dollars (2b)	Hospital Episode PAC % (2c)=(2b)/(2a)
Tonsillectomy	\$380,000	\$80,000	21.1%
Coronary Angioplasty	\$0	\$0	N/A
Vaginal Delivery	\$1,600,000	\$225,000	14.1%
Gall Bladder Surgery	\$600,000	\$40,000	6.7%
Upper GI Endoscopy	\$660,000	\$40,000	6.1%
Hysterectomy	\$0	\$0	N/A
Knee Arthroscopy	\$1,740,000	\$50,000	2.9%

Episode Category	Peer Group Episode Weight (1h)	Hospital Episode PAC % (2c)	Episode Raw Score (3a)=(1h)*(2c)	Hospital Total Baseline (3b)=Sum (1i) ²	Episode Index Score (3c)=(3a)/(3b)*100
Tonsillectomy	4.47	21.1%	0.94	2.07	45.51
Coronary Angioplasty	2.57	N/A	N/A	2.07	N/A
Vaginal Delivery	1.34	14.1%	0.19	2.07	9.14
Gall Bladder Surgery	0.35	6.7%	0.02	2.07	1.14
Upper GI Endoscopy	0.16	6.1%	0.01	2.07	0.47
Hysterectomy	0.10	N/A	N/A	2.07	N/A
Knee Arthroscopy	0.06	2.9%	0.00	2.07	0.08

Episode Category	Number of Episodes (4a)	Episode Index Score (3c)	Index Score per Episode (4b)=(3c)/(4a)	Flag Outliers (4c)
Tonsillectomy	200	45.51	0.23	
Coronary Angioplasty	0	N/A	N/A	N/A
Vaginal Delivery	300	9.14	0.03	
Gall Bladder Surgery	100	1.14	0.01	
Upper GI Endoscopy	300	0.47	0.00	
Hysterectomy	N/A	N/A	N/A	N/A
Knee Arthroscopy	500	0.08	0.00	

Calculate Hospital Index Score = sum of Episode Index Score from (3C) after all outliers have been removed across all hospitals

Hospital Index Score (5a) = 56.34

² Hospital Total Baseline shown in (3B) is the sum of all Peer Group baseline Scores from (1i) for episodes where the hospital had experience. In this example, the Peer Group Baseline Raw Score for Hysterectomy would not be included in the Hospital Total Baseline.

4. Walkthrough of Index Score Credibility Analysis Steps

Index Score Credibility Analysis requires an intermediate level of statistical knowledge.

Step 6: Run bootstrapping statistical sampling for increasing number of Iteration Scenarios: 10, 50, 100, 200, 300, 400, 500

The bootstrapping statistical sampling is a sampling technique that generates a random sample of data from the overall data set. In this case, it will generate a random sample of episodes for each hospital from all their episodes. A few key notes are provided below regarding the use of bootstrapping to determine the credibility of the Hospital Index Score from Step 5.

- The key advantage of using bootstrapping is that a Sample Hospital Index Score can be calculated for each sample, and the resulting Sample Hospital Index Scores from each sample can be used to calculate key statistics that will be used to determine the credibility of the Hospital Index Score calculated in Step 5
- The bootstrap sampling is done with replacement, meaning one episode is selected from the total, and then replaced, and then another episode is selected. This is performed for each hospital individually, such that each hospital sample will only contain their specific historic episode experience
- The Iteration Scenarios represent the number of individual bootstrapping samples that are generated. For example: Iteration Scenario “10” will generate 10 random bootstrapping samples for each hospital, Iteration Scenario “50” will generate 50 random bootstrapping samples for each hospital, etc.
- The resulting individual samples will not contain all episodes for each hospital, as this would result in the Sample Hospital Index Score being the same as the Hospital Index Score from Step 5 and not allow for statistical metrics to be calculated appropriately
- In general, the distribution of episodes within each individual sample will be similar to the overall distribution of episodes for each hospital

Step 7: Calculate Sample Hospital Index Scores

- A Sample Hospital Index Score is calculated using each individual bootstrapping sample for each individual hospital for all Iteration Scenarios
 - ✓ For example: Iteration Scenario “10” will generate 10 Sample Hospital Index Scores for each individual hospital based on their specific bootstrap samples, Iteration Scenario “50” will generate 50 Sample Hospital Index Scores for each individual hospital based on their specific bootstrap samples, etc.
- The same process outlined in Steps 1-4 will be used to calculate the Sample Hospital Index Scores.
 - ✓ The outlier calculation process will not be performed, as this has already been completed, and the final Peer Group Episode Weight and Peer Group Baseline Raw Score from Step 5 will be used

Step 8: Calculate key statistics from Sample Hospital Index Scores

Calculate the following key statistics for each Iteration Scenario using the Sample Hospital Index Scores from Step 7:

- a. Mean Index Score
- b. Standard Deviation of Index Scores
- c. Standard Deviation of the Mean Index Score

Example Statistical Measure Calculations for Iteration Scenario “10” - for illustrative purposes only.

Sample No.	Sample Hospital Index Score
1	55.9
2	59.2
3	58.7
4	57.6
5	51.0
6	58.3
7	54.4
8	52.7
9	51.8
10	51.1

Statistical Measure	Statistic
8a. Mean Sample Hospital Index Score	55.07
8b. Standard Deviation of Sample Hospital Index Scores	3.28
8c. Standard Deviation of Mean Sample Hospital Index Score	1.04

Step 9: Use Full Credibility Formula to determine credibility of Mean Index Score for each Iteration Scenario

The following calculations are specific to each individual hospital.

- a. Select threshold for difference of sample mean to within a specified percentage of the true mean
 - This has been set at 5%
- b. Select confidence level
 - This has been set at 90%
- c. Calculate number of standard deviations for 90% Confidence Interval based on a normal distribution
 - 90% Confidence Interval Standard Deviations = 1.645
- d. Calculate number of samples needed for the Mean Sample Hospital Index Score to be credible using the Full Credibility Formula
 - Number of Samples = $(\text{Standard Deviation of Sample Hospital Index Scores} / \text{Mean Sample Hospital Index Score})^2 * (\text{Standard Deviation for 90\% Confidence Interval} / \text{Threshold for difference of sample mean})^2$

If the Number of Samples needed to be Fully Credible is less than or equal to the number of samples run for a specific Iteration Scenario, then the statistical measures for that Iteration Scenario are deemed credible. The following Steps 10 - 11 will only apply to Iteration Scenarios that have been determined to be fully credible.

Example Full Credibility Calculation for Iteration Scenario “10” is for illustrative purposes only.

Iteration Scenario	Standard Deviation of Sample Hospital Index Scores (8a)	Mean Sample Hospital Index Score (8b)	% Difference Threshold of Sample Mean to the True Mean (9a)	90% Confidence Interval Standard Deviations (9c)	No. Samples to be Fully Credible $(9d) = (8a/8b)^2 * (9c/9a)^2$
10	3.28	55.07	5%	1.645	4

In this example, the number of samples need to be fully credibly is 3.84, which can be rounded up to next nearest whole number of 4. This is less than or equal to the number of samples in the Iteration Scenario, resulting in this Iteration Scenario being credible.

Step 10: Calculate Confidence Interval around Mean Index Score for credible Iteration Scenarios based on result from Step 9

The following calculations are specific to each individual hospital, and only apply to Iteration Scenarios that are deemed credible based on Step 9.

- a. Select confidence level
 - This has been set at the same 90% used for Step 9
- b. Calculate number of standard deviations for 90% Confidence Interval based on a normal distribution
 - 90% Confidence Interval Standard Deviations = 1.645
- c. Calculate Lower Bound of Confidence Interval
- d. Calculate Upper Bound of Confidence Interval

Iteration Scenario	Mean Sample Hospital Index Score (8b)	Standard Deviation of Mean Sample Hospital Index Score (8c)	90% Confidence Interval Standard Deviations (10b)	90% Confidence Interval: Lower Bound (10c)=(8b)-(8c)*(10b)	90% Confidence Interval: Upper Bound (10c)=(8b)+(8c)*(10b)
10	55.07	1.04	1.645	53.36	56.78

Step 11: Determine final list of hospitals that have a credible Hospital Index Score from Step 5

The following calculations are specific to each individual hospital, and only apply to Iteration Scenarios that are deemed credible based on Step 9.

- a. If the Hospital Index Score is within at least one credible confidence interval, the Hospital Index Score for that hospital is determined to be credible.
 - A 0.5% threshold has been added to the top and bottom of each confidence interval to capture hospitals with narrow confidence intervals that would otherwise be deemed not credible.

- b. If none of the Iterations Scenarios are deemed credible for a hospital, then the Hospital Index Score for that hospital is also determined to not be credible.

In the examples provided, the Hospital Index Score from Step 5 of 56.34 is within the 90% Confidence Interval of (53.36, 56.78) from Step 10, and is thus deemed a credible Hospital Index Score.

C. Risk Adjustment

Because the risk adjustment module within Prometheus analytics was specifically designed for use within a bundled payment construction, it is not appropriate for the designed application within the Colorado Dashboards. Therefore, Optumas and the Department have created a separate risk adjustment methodology specifically designed to apply within the dashboards.

1. Risk Factor Development

In order to compare PAC% overtime for a specific hospital or compare hospitals to each other, there needs to be consideration for variation in population risk. The final risk factors were developed to account for the various acuity levels across members. Each step of the risk factor development will be described in more detail below the summary.

Summary of Risk Factor Calculation Steps

1. Arrange population into various acuity levels based on members chronic episode count
2. Calculate procedural PAC% for various acuity levels (defined by Chronic Episode Count)
3. Assign acuity levels into tiers
4. Calculate PAC normalization factors (risk factors) for each tier relative to zero chronic episode group

Walkthrough of Risk Factor Calculation Steps

Step 1: Arrange population into various acuity levels based on members chronic episode count

Chronic Episode Count	Member Count
0	599,181
1	212,669
2	105,534
3	51,863
4	26,048
5	13,164
6	6,561
7	2,915
8	1,324
9	532
10	239
11	68
12	14
13	4
14	3

Step 2: Calculate procedural PAC% for various acuity levels (defined by Chronic Episode Count)

The following calculations are specific to all procedural episodes for each acuity level.

- a. Calculate Total Procedural Episode Dollars
- b. Calculate Total Procedural PAC Dollars
- c. Calculate Procedural PAC % = Total Procedural PAC Dollars / Total Procedural Episode Dollars

Example Calculation for Procedural PAC%- for illustrative purposes only

Step 3: Assign acuity levels into tiers

The following table illustrates acuity levels being assigned a tier group; this is done to address credibility concerns across the acuity levels.

Chronic Episode Count	Member Count	Procedural Episode Dollars (2A)	Procedural PAC Dollars (2B)	Procedural PAC% (2C) = (2B) / (2A)
0	599,181	\$271,222,883	\$10,272,783	3.79%
1	212,669	\$135,182,357	\$7,390,137	5.47%
2	105,534	\$108,829,590	\$7,326,697	6.73%
3	51,863	\$87,498,923	\$7,002,598	8.00%
4	26,048	\$66,019,988	\$6,013,531	9.11%
5	13,164	\$48,175,822	\$4,851,049	10.07%
6	6,561	\$29,837,556	\$3,394,144	11.38%
7	2915	\$16,726,920	\$2,030,214	12.14%
8	1324	\$9,365,552	\$1,451,508	15.50%
9	532	\$5,122,843	\$881,448	17.21%
10	239	\$2,595,921	\$366,345	14.11%
11	68	\$841,258	\$292,354	34.75%
12	14	\$199,568	\$79,552	39.86%
13	4	\$38,067	\$16,041	42.14%
14	3	\$2,414	\$0	0.00%

Chronic Episode Count	Episode Count Tier
0	-
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	4
10	4
11	4
12	4
13	4
14	4

Step 4: Calculate PAC normalization factors (risk factors) for each tier relative to zero chronic episode group

- a. Calculate Total Procedural Episode Dollars
- b. Calculate Total Procedural PAC Dollars
- c. Calculate Procedural PAC % = Total Procedural PAC Dollars / Total Procedural Episode Dollars
- d. Calculate PAC Normalization Factor (Risk Score) = Tiered Procedural PAC% / Zero Chronic Episode Count Procedural PAC %

Example Calculation for PAC Normalization Factors (Risk Factors)- for illustrative purposes only

Chronic Episode Count	Member Count	Procedural Episode Dollars (2A)	Procedural PAC Dollars (2B)	Procedural PAC% (2C) = (2B) / (2A)
0	599,181	\$271,222,883	\$10,272,783	3.79%

Episode Count Tier	Member Count	Procedural Episode Dollars (4A)	Procedural PAC Dollars (4B)	Procedural PAC% (4C) = (4B) / (4A)	PAC Normalization Factor (Risk Score) (4D) = (4C) / (2C)
1	318,203	\$244,011,948	\$14,716,835	6.03%	1.592
2	77,911	\$153,518,911	\$13,016,128	8.48%	2.239
3	19,725	\$78,013,378	\$8,245,193	10.57%	2.79
4	5,099	\$34,892,543	\$5,117,461	14.67%	3.872

2. Risk Adjusted Hospital Index Calculation

Each member is assigned a risk adjustment factor based on the tier they fall into from the Risk Factor Development outlined above. This is based on the number of chronic PROMETHEUS episodes they have during the measurement period, which is the most recent two years of data. If a member did not have any chronic conditions, a risk adjustment factor of 1.00 was assigned. The PAC percentage is then adjusted for each member's procedural episode(s) by dividing by PAC percentage by the risk adjustment factor assigned to that member. The risk adjusted PAC percentage is then converted to risk adjusted PAC dollars by applying the risk adjusted PAC percentage to the total episode cost. This allows for aggregation of risk adjusted data across members, episodes, hospitals, and peer groups.

Step 1 above is then calculated using non-risk adjusted data to calculate initial weights and baseline raw scores using FY14 through FY18 data. These weights will be used consistently for the next few years to ensure that changes in index score are not influenced by changes in weights. The risk adjusted data is then aggregated by episode and peer group, and an initial Peer Group Index Score is calculated by applying the non-risk adjusted weights to the risk adjusted PAC percentages by peer group and episode. Due to the nature of the risk adjustment, the initial risk adjusted Peer Group Index Score will be less than 100, so an Index Score Normalization Factor is calculated by peer group such that the risk adjusted Peer Group Index Score is 100 for each peer group. The remaining Steps 2-11 are then performed for

the Index Score Development and Credibility Determination calculation based on the risk adjusted PAC dollars, and the Index Score Normalization Factor is then applied to each Hospital Index Score based on their assigned peer group. This will step retain the relative relationships between individual Hospital Index Scores within a peer group.

The results of the index score and credibility analysis can be different from the non-risk adjusted scores and analysis.

D. Attribution to Facility and Attending Provider

Procedural episodes (generally centered around inpatient/outpatient services) are attributed to facilities based on uniformity in the provider IDs on these claims.

- Episodes with provider ID discrepancies between claims or no inpatient/outpatient claims at all were not incorporated into the model
- If there are inpatient claims within the procedural episode, then check only these claims for uniformity in provider IDs. If there are only outpatient claims at most, then check only these claims for uniformity in provider IDs (sometimes crosswalked from NPIs). Any episodes with multiple inpatient claims (or outpatient, if inpatient claims do not exist) in which services are rendered at more than one facility are currently not attributed to a hospital. This methodology captures roughly 80 percent of the Procedural, Filter ID = 1 episodes

Episodes are also assigned to an **attending provider**, typically the **surgeon**, as identified by the **episode's trigger claim**.

E. Substance Use Disorder (SUD) Scrubbing

Until the Department can obtain a legal opinion that SUD data can be shared with hospitals while complying with 42 CFR Part 2, the Department must scrub SUD data from the distributed dashboards, using the BIDM's definition of SUD.

F. Incorporation into HQIP and HTP

For the 2019-20 supplemental Hospital Quality Incentive Payments (HQIP), there will be a process measure based on PROMETHEUS and the Hospital Index.

PROMETHEUS and the Hospital Index will be utilized within the group of measures focused on clinical and operational efficiencies in the Hospital Transformation Program (HTP).

G. CY18 Population

Medicaid members enrolled in the Accountable Care Collaborative (ACC) between 7/1/13 (SFY13-14) and 6/30/16 (SFY15-16).

H. Exclusions

The PROMETHEUS model excludes members dually enrolled in Medicare and Medicaid, as well as members enrolled in PACE. The model assigns FFS claims and managed care encounters to episodes of care, so any claim or encounter that did not group to an episode will not be present in the PROMETHEUS results. Members who did not receive any care between 7/1/13 and 6/30/16 that could be grouped to a PROMETHEUS episode will not be present in the PROMETHEUS results.

I. Eligibility Types

The eligibility groups on the dashboard are an aggregation of client program aid codes, as well as member age, gender, disability status, and third-party liability (TPL) status at the time of service.

J. FY20 Population

Members enrolled in the ACC between 7/1/16 (SFY16-17) and 6/30/18 (SFY17-18).

1. Exclusions

The PROMETHEUS model excludes clients dually enrolled in Medicare and Medicaid, as well as members enrolled in PACE. The model assigns FFS claims and managed care encounters to episodes of care, so any claim or encounter that did not group to an episode will not be present in the PROMETHEUS results. Members who did not receive any care between 7/1/16 and 6/30/18 that could be grouped to a PROMETHEUS episode will not be present in the PROMETHEUS results.

XII. Dashboard Updates and Distribution

A. How the Dashboards are Created



1. Optumas runs claims data through the PROMETHEUS model
2. Raw PROMETHEUS output not directly connected to any claims (and thus not actionable).
3. Optumas crosswalks PAC percentages back to claims so it is actionable to HCPF and providers.
4. Tableau dashboard created by the Department and hosted on Optumas' Tableau Server.

B. What the Dashboards Shouldn't be Used to Measure

- **Care management** → the data is too old to be actionable (the episodes have already been completed)
- We are NOT looking at a complete picture of healthcare spending, so we are NOT able to assess **gaps in care or sufficiency of care**.
 - ✓ The PROMETHEUS model groups claims in clinically defined episodes → any claim that doesn't meet criteria for episode is **dropped** from the underlying dataset in step 1 above.

C. When the Dashboards will be Updated

Fiscal Year	FY19	FY20	FY21
Underlying Data as of 7/1	FY14-16	FY15-18	FY15-19
Index Score Data Points	1. FY14-16	1. FY15-16 2. FY17-18	1. FY15-16 2. FY17-18 3. FY18-19

D. Regional Accountable Entity Access to Hospital Dashboards

Because each hospital's Index score is based on performance across all locations and some hospitals have multiple locations in multiple regions, it was not feasible to separate and report on hospitals by Regional Accountable Entity (RAE) region. Instead, RAE dashboards identify hospital utilization wherever it occurs in any of the episode levels/types **without referencing the hospital's specific Index score**. For instance, hospital utilization that is associated with any chronic episode will be found in the **Rendering Providers portion** of the RAE dashboard and will likely be identified as a PAC because ambulatory sensitive conditions should not require hospital-level care if they are well managed.

RAEs can see which provider has been identified as the attending provider for procedural episodes, but their dashboards will show the member's historical PCMP as the attending/attributed provider for all other episode types.

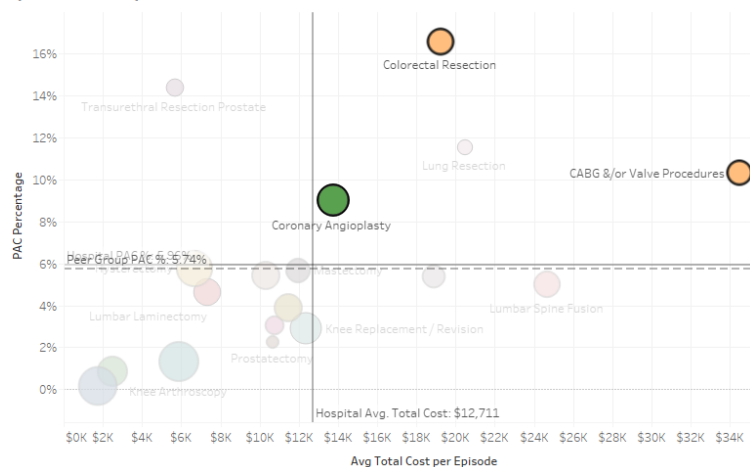
XIII. Guidance on Identifying Opportunities and Interpreting PROMETHEUS Dashboards

A. Start with biggest bang for our buck.

Identify which episodes, categories of service, providers, etc. have the **highest PAC costs**.

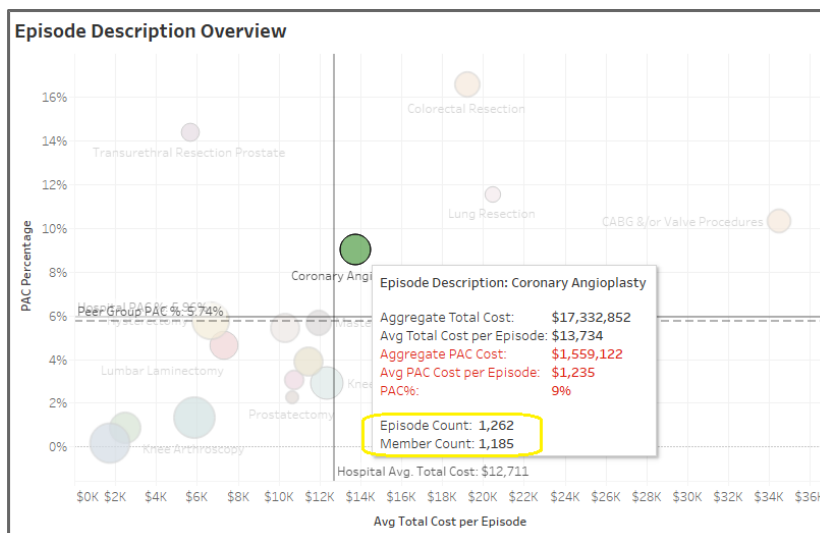
Episode Description	Total Cost	PAC Cost	PAC%	Episode Count
Vaginal Delivery	\$15,970,716	\$630,118	4%	3,471
Upper GI Endoscopy	\$6,205,777	\$584,121	9%	2,891
CABG &/or Valve Procedur..	\$3,414,323	\$490,036	14%	92
Colorectal Resection	\$1,662,205	\$298,920	18%	80
Coronary Angioplasty	\$2,045,640	\$286,323	14%	126
C-Section	\$7,015,525	\$259,194	4%	971

Episode Description Overview



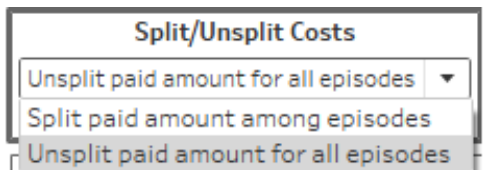
Category of Service	Total Cost	PAC Cost	PAC%	Episode Count
Inpatient	\$1,361,041	\$160,958	12%	92
Professional	\$231,312	\$56,126	24%	125
Outpatient - Non-ER	\$204,291	\$27,480	13%	73
Outpatient - ER	\$58,204	\$17,197	30%	43
Emergency Transportat..	\$38,413	\$12,997	34%	53
Lab/Rad	\$11,650	\$4,594	39%	107
Rx	\$103,523	\$2,665	3%	114
FQHC/RHC	\$12,395	\$1,700	14%	38

When viewing PAC %, remember to look at **volume** too. Lowering a high PAC % that only impacted one member or was worth only a few dollars will not be as effective as lowering a high PAC % associated with lots of costs and/or members.



B. Make fair and meaningful comparisons.

- Variation in average episode cost is partially driven by **variation in reimbursement rates** across providers. Before drawing conclusions about efficiency of care due to differences in cost, use the tool to drill down and look at unit pricing.
- In addition to unit pricing considerations, you also need to **account for episode mix** when comparing average episode cost. Note the example below. The variation identified in the graph on the top is largely due to a difference in the mix of episodes. For example, a provider might have a higher average episode treatment cost because they saw more members with expensive procedures like a hip replacement than other physicians who might have only seen members for tonsillectomies. The graph on the right shows just the variation in treatment of the Lower Back Pain episode, which is significantly more meaningful.
- There are two ways to view (Total/ Typical/ PAC) costs in the dashboard - on an unsplit or split basis. **Unsplit costs** count the total dollars on a given claim every time the claim is used in the model. For instance, if a \$100 claim is assigned to three separate episodes, then \$100 of cost is assigned to each episode. **Split costs** divide the total dollars on a given claim by the total number of episodes that claim was assigned to in the model. In above example, \$33 (\$100/3) of costs would be assigned to each episode. When evaluating a single episode description, look at costs on an unsplit basis to avoid understating them. When evaluating (i.e., ranking or listing) multiple episodes, look at costs on a split basis to avoid overstating them.



The PROMETHEUS algorithms consider all **Rx costs**, except Rxs associated with inpatient or ED visits that were driven by chronic condition exacerbation, as typical. Please refer to **other tools** for Rx management in particular.

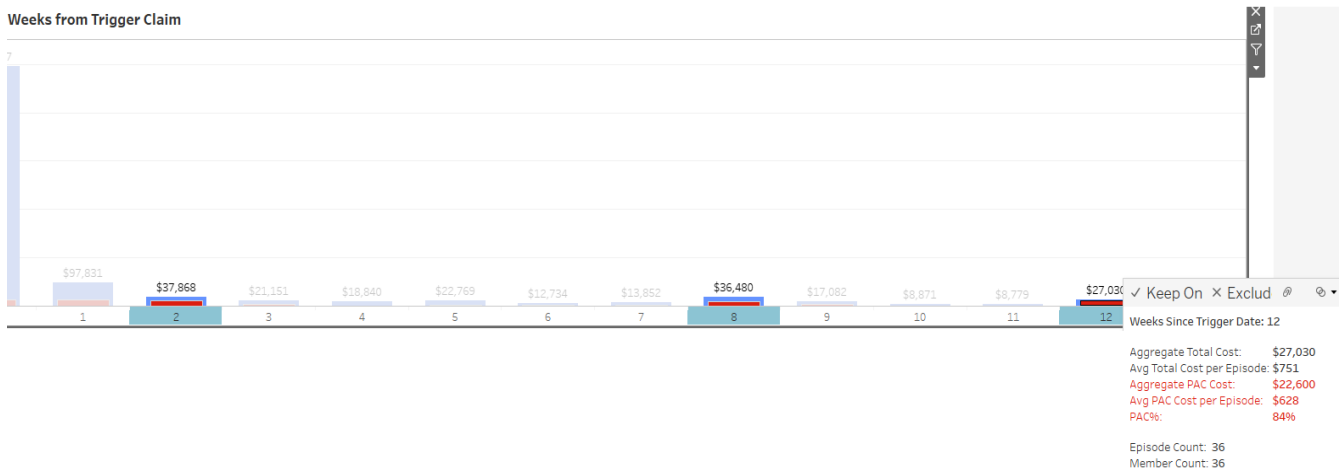
C. Identifying patterns.

Are there particular conditions, categories of service, DRGs/ services, or rendering providers where PAC costs are consistently high?

Category of Service	Total Cost	PAC Cost	PAC%	Episode Count
Inpatient	\$249,982,394	\$7,780,008	3%	51,272
Outpatient - ER	\$12,832,958	\$2,214,064	17%	10,526
Outpatient - Non-ER	\$81,396,518	\$1,564,874	2%	54,944
FQHC/RHC	\$8,015,945	\$714,342	9%	15,012
Lab/Rad	\$8,660,199	\$584,420	7%	61,304
DME	\$7,902,490	\$549,868	7%	7,053
Emergency Transportat..	\$1,512,862	\$286,149	19%	4,680
Home Health	\$4,019,668	\$229,336	6%	3,069
Rx	\$18,652,079	\$107,358	1%	70,168

DRG Description	Total Cost	PAC Cost	PAC%	Episode Count
Postpartum Diags w/o ...	\$926,225	\$865,404	93%	318
Septicemia & Dissemina..	\$1,849,359	\$695,805	38%	183
Rehabilitation	\$2,164,765	\$535,734	25%	192
Post-Op Device Inf	\$499,490	\$325,569	65%	36
Maj Small & Large Bowe..	\$6,326,297	\$246,058	4%	485

Does the same PAC or a **high PAC %** for a particular episode consistently occur at the same point in treatment?



D. Determine actionability.

- Bear in mind that different provider types have **differing amounts of influence** over each episode type and/or description. And the amount of each

provider type's influence will **change over time**, as well as potentially vary by the sub-population.

- Consider **how long** it will likely take a proposed intervention to **impact performance** on an episode. Outcome/performance improvements that cannot be realized for several years (or decades) will not help the provider pass near-term PROMETHEUS metrics, but should still be pursued to the extent feasible (i.e., in addition to the interventions that will produce near-term results).
- Consider the **resources** that will be required to address performance on a particular episode/implement a proposed intervention. Prioritize interventions that will require less capital (or staff) investments and/or will be simpler to implement.

XIV. Appendix

A. Exhibit A - Episode Associations

Episodes are constructed at different levels representing an isolated episode at the lowest level (level 1) up to the most inclusive level (level 5). This “leveling” allows for episode accountability at an individual surgeon or physician level or at an Accountable Care Organization (ACO) or similar group level who may be responsible for a member’s entire health care.

An association indicates a relationship between two episodes. In an association, two episodes coexist, with one being subsidiary to the other **provided that their time windows overlap**. The subsidiary episode and the services assigned to it may be viewed (analyzed) on its own, but it may also be viewed, at another level, as assigned to the primary episode. At the upper level the episodes are, in effect, consolidated. Associations may occur in chains, e.g., PCI - AMI and AMI - CAD. In this case the AMI association to the CAD would also include the PCI.

There are several types of associated episodes, including:

- Certain procedural episodes that are subsidiary to related acute medical episodes, e.g., PCI is subsidiary to AMI
- Certain acute medical and procedural episodes that are subsidiary to related Chronic or Other Condition episodes, e.g., AMI and PCI are subsidiary to CAD
- Procedural or acute medical episodes that trigger while an episode of the same type is open, which are subsidiary to the already open episode, and usually categorized as a complication

Generally, procedural episodes are completed at level 3 while final associations for acute episodes are made at level 4 and final associations for chronic care episodes occur at level 5.

The table below identifies the episode to episode associations indicating the primary and secondary episode, the level at which the secondary episode is associated to the primary and the type of association (complication vs. typical).

ASSOCIATION	LEVEL	PRIMARY_EPISODE_ID	SECONDARY_EPISODE_ID
Complication	3	EP0904 - MSTCMY	EA0403 - PNE
Complication	3	EP0904 - MSTCMY	EA0506 - AMI
Complication	3	EP1202 - PRSCMY	EA0506 - AMI
Complication	3	EP1202 - PRSCMY	EA0403 - PNE

ASSOCIATION	LEVEL	PRIMARY_EPISODE_ID	SECONDARY_EPISODE_ID
Complication	3	EP1202 - PRSCMY	EA0101 - STR
Complication	3	EP0817 - SHLDRP	EA0403 - PNE
Complication	3	EP0817 - SHLDRP	EA0506 - AMI
Complication	3	EP1203 - TURP	EA0101 - STR
Complication	3	EP1203 - TURP	EA0506 - AMI
Complication	3	EP1203 - TURP	EA0403 - PNE
Complication	3	EP0601 - EGD	EA0403 - PNE
Complication	3	EP0601 - EGD	EA0101 - STR
Complication	3	EP0601 - EGD	EA0506 - AMI
Complication	3	EP0813 - KNRPL	EA0101 - STR
Complication	3	EP0813 - KNRPL	EA0403 - PNE
Complication	3	EP0813 - KNRPL	EA0506 - AMI
Complication	3	EP0811 - KNARTH	EA0101 - STR
Complication	3	EP0811 - KNARTH	EA0403 - PNE
Complication	3	EP0811 - KNARTH	EA0506 - AMI
Complication	3	EP0812 - HIPRPL	EA0101 - STR
Complication	3	EP0812 - HIPRPL	EA0403 - PNE
Complication	3	EP0812 - HIPRPL	EA0506 - AMI
Complication	3	EP0401 - LNGSRG	EA0101 - STR
Complication	3	EP0401 - LNGSRG	EA0403 - PNE
Complication	3	EP0401 - LNGSRG	EA0506 - AMI
Complication	3	EP0509 - CXCABG	EP0509 - CXCABG
Complication	3	EP0509 - CXCABG	EA0506 - AMI
Complication	3	EP0509 - CXCABG	EP0520 - PCI
Complication	3	EP0509 - CXCABG	EA0403 - PNE
Complication	3	EP0509 - CXCABG	EA0101 - STR
Complication	3	EP0520 - PCI	EP0509 - CXCABG
Complication	3	EP0520 - PCI	EP0520 - PCI
Complication	3	EP0520 - PCI	EA0506 - AMI
Complication	3	EP0520 - PCI	EA0101 - STR
Complication	3	EP0520 - PCI	EA0403 - PNE
Complication	3	EA0101 - STR	EA0101 - STR
Complication	3	EA0101 - STR	EA0403 - PNE
Complication	3	EA0101 - STR	EA0506 - AMI
Complication	3	EP0816 - LBRLAM	EA0403 - PNE
Complication	3	EP0816 - LBRLAM	EA0101 - STR
Complication	3	EP0816 - LBRLAM	EA0506 - AMI
Complication	3	EA0506 - AMI	EA0506 - AMI
Complication	3	EA0506 - AMI	EA0101 - STR
Complication	3	EA0506 - AMI	EA0403 - PNE
Complication	3	EP0603 - COLOS	EA0506 - AMI
Complication	3	EP0603 - COLOS	EA0403 - PNE
Complication	3	EP0826 - FUSION	EA0403 - PNE
Complication	3	EP0826 - FUSION	EA0101 - STR
Complication	3	EP0826 - FUSION	EA0506 - AMI
Complication	3	EP0602 - COLON	EA0403 - PNE
Complication	3	EP0602 - COLON	EA0506 - AMI
Complication	3	EP0604 - GBSURG	EA0403 - PNE

ASSOCIATION	LEVEL	PRIMARY_EPISODE_ID	SECONDARY_EPISODE_ID
Complication	3	EP0604 - GBSURG	EA0506 - AMI
Complication	3	EP1301 - HYST	EA0403 - PNE
Complication	3	EP1301 - HYST	EA0506 - AMI
Complication	3	EP0301 - TONSIL	EA0403 - PNE
Complication	3	EA0403 - PNE	EA0506 - AMI
Complication	3	EP1404 - CSECT	EA0403 - PNE
Complication	3	EP1404 - CSECT	EA0101 - STR
Complication	3	EP1404 - CSECT	EA0506 - AMI
Complication	3	EP1404 - CSECT	EP1301 - HYST
Complication	3	EP1403 - VAGDEL	EA0101 - STR
Complication	3	EP1403 - VAGDEL	EA0403 - PNE
Complication	3	EP1403 - VAGDEL	EA0506 - AMI
Complication	3	EP1403 - VAGDEL	EP1301 - HYST
Complication	3	EP0610 - BARI	EA0403 - PNE
Complication	3	EP0610 - BARI	EA0506 - AMI
Complication	3	EP0510 - PCMDFR	EA0101 - STR
Complication	3	EP0510 - PCMDFR	EA0403 - PNE
Complication	3	EP0510 - PCMDFR	EA0506 - AMI
Complication	4	EA0303 - URI	EA0403 - PNE
Complication	4	EA0101 - STR	EA0101 - STR
Complication	4	EA0101 - STR	EA0403 - PNE
Complication	4	EA0101 - STR	EA0506 - AMI
Complication	4	EA0807 - HIPLFR	EA0101 - STR
Complication	4	EA0807 - HIPLFR	EA0403 - PNE
Complication	4	EA0807 - HIPLFR	EA0506 - AMI
Complication	4	EA0506 - AMI	EA0101 - STR
Complication	4	EA0506 - AMI	EA0403 - PNE
Complication	4	EA0506 - AMI	EA0506 - AMI
Complication	4	EA0610 - DIVERT	EA0403 - PNE
Complication	4	EA0610 - DIVERT	EA0506 - AMI
Complication	4	EA0403 - PNE	EA0506 - AMI
Complication	5	EX0602 - CLNCAN	EA0101 - STR
Complication	5	EX0602 - CLNCAN	EA0506 - AMI
Complication	5	EX0602 - CLNCAN	EA0403 - PNE
Complication	5	EC1001 - DIAB	EA0101 - STR
Complication	5	EC1001 - DIAB	EA0403 - PNE
Complication	5	EC1001 - DIAB	EA0506 - AMI
Complication	5	EX0402 - LNGCAN	EA0101 - STR
Complication	5	EX0402 - LNGCAN	EA0403 - PNE
Complication	5	EX0402 - LNGCAN	EA0506 - AMI
Complication	5	EX0902 - BRSTCA	EA0101 - STR
Complication	5	EX0902 - BRSTCA	EA0403 - PNE
Complication	5	EX0902 - BRSTCA	EA0506 - AMI
Complication	5	EX1303 - GYNCAN	EA0403 - PNE
Complication	5	EX1303 - GYNCAN	EA0101 - STR
Complication	5	EX1303 - GYNCAN	EA0506 - AMI
Complication	5	ES9901 - SICKCR	ES2302 - COMPLC
Complication	5	ES9901 - SICKCR	ES2301 - DEVICE

ASSOCIATION	LEVEL	PRIMARY_EPISODE_ID	SECONDARY_EPISODE_ID
Complication	5	ES9901 - SICKCR	ES2103 - POISON
Complication	5	ES9901 - SICKCR	ES2102 - ADRUG
Complication	5	ES9901 - SICKCR	ES1803 - INFECT
Complication	5	ES9901 - SICKCR	ES1802 - MRSA
Complication	5	ES9901 - SICKCR	ES1801 - SEPSIS
Complication	5	ES9901 - SICKCR	ES1601 - TRNSFU
Complication	5	ES9901 - SICKCR	ES1106 - UTI
Complication	5	ES9901 - SICKCR	ES1104 - ARF
Complication	5	ES9901 - SICKCR	ES1102 - CTHUTI
Complication	5	ES9901 - SICKCR	ES1004 - NUTDEF
Complication	5	ES9901 - SICKCR	ES1003 - DMUNC
Complication	5	ES9901 - SICKCR	ES0904 - CELUTS
Complication	5	ES9901 - SICKCR	ES0903 - DRMTIS
Complication	5	ES9901 - SICKCR	ES0902 - DECUB
Complication	5	ES9901 - SICKCR	ES0806 - FALL
Complication	5	ES9901 - SICKCR	ES0703 - PNCRTS
Complication	5	ES9901 - SICKCR	ES0702 - HPTTIS
Complication	5	ES9901 - SICKCR	ES0607 - INTOBS
Complication	5	ES9901 - SICKCR	ES0605 - CDIFF
Complication	5	ES9901 - SICKCR	ES0604 - GIBLD
Complication	5	ES9901 - SICKCR	ES0529 - EMBOL
Complication	5	ES9901 - SICKCR	ES0526 - MGHTN
Complication	5	ES9901 - SICKCR	ES0525 - ACCHF
Complication	5	ES9901 - SICKCR	ES0522 - LINE
Complication	5	ES9901 - SICKCR	ES0521 - IMBALN
Complication	5	ES9901 - SICKCR	ES0520 - DVTPE
Complication	5	ES9901 - SICKCR	ES0508 - SHOCK
Complication	5	ES9901 - SICKCR	ES0507 - HYPOTN
Complication	5	ES9901 - SICKCR	ES0408 - ASPPNE
Complication	5	ES9901 - SICKCR	ES0407 - RESPFL
Complication	5	ES9901 - SICKCR	ES0108 - DLRMEN
Complication	5	ES9901 - SICKCR	ES0107 - MNGENC
Complication	5	ES9901 - SICKCR	ES0106 - COMA
Complication	5	ES9901 - SICKCR	ES9901 - SICKCR
Complication	5	ES9901 - SICKCR	ES0401 - HAPneu
Complication	5	EX0601 - RCLCAN	EA0506 - AMI
Complication	5	EX0601 - RCLCAN	EA0403 - PNE
Complication	5	EX0601 - RCLCAN	EA0101 - STR
Complication	5	EX1401 - PREGN	EA0101 - STR
Complication	5	EX1401 - PREGN	EA0403 - PNE
Complication	5	EX1401 - PREGN	EA0506 - AMI
Complication	5	EX1401 - PREGN	EP1404 - CSECT
Complication	5	EC0301 - RHNTS	EA0303 - URI
Complication	5	EC0401 - ASTHMA	EA0403 - PNE
Complication	5	EC0401 - ASTHMA	EA0303 - URI
Complication	5	EC0402 - COPD	EA0403 - PNE
Complication	5	EC0402 - COPD	EA0303 - URI
Complication	5	EC0508 - CAD	EA0506 - AMI

ASSOCIATION	LEVEL	PRIMARY_EPISODE_ID	SECONDARY_EPISODE_ID
Complication	5	EC0508 - CAD	EA0101 - STR
Complication	5	EC0508 - CAD	EA0403 - PNE
Complication	5	EC0521 - HF	EA0506 - AMI
Complication	5	EC0521 - HF	EA0101 - STR
Complication	5	EC0521 - HF	EA0403 - PNE
Complication	5	EC0511 - HTN	EA0506 - AMI
Complication	5	EC0511 - HTN	EA0101 - STR
Complication	5	EC0518 - ARRBLK	EA0101 - STR
Complication	5	EC0518 - ARRBLK	EA0506 - AMI
Complication	5	EC0611 - CROHNS	EA0506 - AMI
Complication	5	EC0611 - CROHNS	EA0403 - PNE
Complication	5	EC0612 - ULCLTS	EA0403 - PNE
Complication	5	EC0612 - ULCLTS	EA0506 - AMI
Complication	5	EX0701 - HCV	EA0403 - PNE
Complication	5	EX0701 - HCV	EA0303 - URI
Complication	5	EX1201 - PRSTCA	EA0506 - AMI
Complication	5	EX1201 - PRSTCA	EA0101 - STR
Complication	5	EX1201 - PRSTCA	EA0403 - PNE
Typical	2	EP0904 - MSTCMY	EP0902 - BSTBIO
Typical	2	EA0303 - URI	EA0303 - URI
Typical	2	EP0509 - CXCABG	EP0520 - PCI
Typical	2	EP0509 - CXCABG	EP0510 - PCMDFR
Typical	2	EP0520 - PCI	EP0520 - PCI
Typical	2	EP0520 - PCI	EP0510 - PCMDFR
Typical	2	EP0603 - COLOS	EP0603 - COLOS
Typical	2	EP0826 - FUSION	EP0816 - LBRLAM
Typical	2	EP0826 - FUSION	EP0826 - FUSION
Typical	2	EA0610 - DIVERT	EA0610 - DIVERT
Typical	2	EP0602 - COLON	EP0603 - COLOS
Typical	2	EP0604 - GBSURG	EP0601 - EGD
Typical	2	EA0403 - PNE	EA0403 - PNE
Typical	2	EX1401 - PREGN	EX1401 - PREGN
Typical	2	EP1404 - CSECT	EP1403 - VAGDEL
Typical	2	EP1404 - CSECT	EP1404 - CSECT
Typical	2	EP1403 - VAGDEL	EP1403 - VAGDEL
Typical	2	EP0610 - BARI	EP0601 - EGD
Typical	3	EA0506 - AMI	EP0520 - PCI
Typical	3	EA0506 - AMI	EP0509 - CXCABG
Typical	3	EA0506 - AMI	EP0510 - PCMDFR
Typical	4	EA0807 - HIPLFR	EP0812 - HIPRPL
Typical	4	EA0506 - AMI	EP0509 - CXCABG
Typical	4	EA0506 - AMI	EP0520 - PCI
Typical	4	EA0506 - AMI	EP0510 - PCMDFR
Typical	4	EA0610 - DIVERT	EP0603 - COLOS
Typical	4	EA0610 - DIVERT	EP0602 - COLON
Typical	5	EX0602 - CLNCAN	EP0602 - COLON
Typical	5	EX0602 - CLNCAN	EP0603 - COLOS
Typical	5	EX0402 - LNGCAN	EP0401 - LNGSRG

ASSOCIATION	LEVEL	PRIMARY_EPISODE_ID	SECONDARY_EPISODE_ID
Typical	5	EX0902 - BRSTCA	EP0904 - MSTCMY
Typical	5	EX0902 - BRSTCA	EP0902 - BSTBIO
Typical	5	EX9901 - PREVNT	EP0603 - COLOS
Typical	5	EX1303 - GYNCAN	EP1301 - HYST
Typical	5	EX0601 - RCLCAN	EP0602 - COLON
Typical	5	EX0601 - RCLCAN	EP0603 - COLOS
Typical	5	EX1401 - PREGN	EP1403 - VAGDEL
Typical	5	EC1906 - SCHIZO	EC1909 - DEPANX
Typical	5	EC1903 - BIPLR	EC1909 - DEPANX
Typical	5	EC0508 - CAD	EP0509 - CXCABG
Typical	5	EC0508 - CAD	EP0520 - PCI
Typical	5	EC0508 - CAD	EP0510 - PCMDFR
Typical	5	EC0521 - HF	EP0509 - CXCABG
Typical	5	EC0521 - HF	EP0520 - PCI
Typical	5	EC0521 - HF	EP0510 - PCMDFR
Typical	5	EC0518 - ARRBLK	EP0509 - CXCABG
Typical	5	EC0518 - ARRBLK	EP0520 - PCI
Typical	5	EC0518 - ARRBLK	EP0510 - PCMDFR
Typical	5	EC0601 - GERD	EP0601 - EGD
Typical	5	EC0611 - CROHNS	EP0603 - COLOS
Typical	5	EC0611 - CROHNS	EP0602 - COLON
Typical	5	EC0612 - ULCLTS	EP0603 - COLOS
Typical	5	EC0612 - ULCLTS	EP0602 - COLON
Typical	5	EC0801 - LBP	EP0816 - LBRLAM
Typical	5	EC0801 - LBP	EP0826 - FUSION
Typical	5	EX0701 - HCV	EP0601 - EGD
Typical	5	EX1201 - PRSTCA	EP1202 - PRSCMY
Typical	5	EC0802 - OSTEOA	EP0812 - HIPRPL
Typical	5	EC0802 - OSTEOA	EP0813 - KNRPL
Typical	5	EC0802 - OSTEOA	EP0811 - KNARTH
Typical	5	EC0802 - OSTEOA	EP0817 - SHLDRP

B. Exhibit B - Episode Parameters

Episodes #	MDC #	MDC	TYPE	EPISODES	EPS_ID	Acronym	Look-Back	Look-Forward	Age Range
37	2	Eye	Procedural	Cataract Surgery	EP0202	CTRTSU	3 days	14 days	18-65
38	3	Ear Nose Throat	Procedural	Tonsillectomy	EP0301	TONSIL	30 days	90 days	2-65
39	4	Respiratory	Procedural	Lung Resection	EP0401	LNGSRG	30 days	90 days	18-65
40	5	Circulatory	Procedural	CABG and Related Procedures	EP0509	CxCABG	30 days	90 days	18-65
41	5	Circulatory	Procedural	Pacemakers/defibrillators	EP0510	PCMDFR	7 days	30 days	18-65
42	5	Circulatory	Procedural	PCI	EP0520	PCI	30 days	90 days	18-65
43	6	Digestive	Procedural	Upper GI endoscopy	EP0601	EGD	3 days	14 days	18-65
44	6	Digestive	Procedural	Colon Resection	EP0602	COLON	30 days	90 days	18-65
45	6	Digestive	Procedural	Colonoscopy	EP0603	COLOS	3 days	14 days	18-65
46	6	Digestive	Procedural	Bariatric Surgery	EP0610	BARI	30 days	90 days	18-65
47	7	Liver / GB	Procedural	GB Surgery	EP0604	GBSURG	30 days	90 days	18-65
48	8	Musculoskeletal	Procedural	Knee Arthroscopy	EP0811	KNARTH	30 days	90 days	18-65
49	8	Musculoskeletal	Procedural	Hip Replacement / Hip Revision	EP0812	HIPRPL	30 days	90 days	18-65
50	8	Musculoskeletal	Procedural	Knee Replacement / Knee Revision	EP0813	KNRPL	30 days	90 days	18-65
51	8	Musculoskeletal	Procedural	Lumbar Spine Fusion	EP0826	FUSION	30 days	180 days	18-65
52	8	Musculoskeletal	Procedural	Lumbar Discectomy / Laminectomy	EP0816	LBRLAM	30 days	90 days	18-65
53	8	Musculoskeletal	Procedural	Shoulder Replacement	EP0817	SHLDRP	30 days	90 days	18-65
54	9	Skin / Breast	Procedural	Breast Biopsy	EP0902	BSTBIO	7 days	7 days	18-65
55	9	Skin / Breast	Procedural	Mastectomy	EP0904	MSTCMY	30 days	90 days	18-65
56	12	Male Repr	Procedural	Prostatectomy	EP1202	PRSCMY	30 days	90 days	18-65
57	12	Male Repr	Procedural	TURP (Transurethral prostate resection)	EP1203	TURP	30 days	90 days	18-65
58	13	Female Repr	Procedural	Hysterectomy	EP1301	HYST	60 days	90 days	18-65
59	14	Pregnancy, Childbirth	Procedural	Vaginal Delivery	EP1403	VAGDEL	3 days	60 days	12-65
60	14	Pregnancy, Childbirth	Procedural	C-Section	EP1404	CSECT	3 days	60 days	12-65

C. Exhibit C - Colonoscopy Handout

Trigger

The Colonoscopy episode can be triggered by:

- An outpatient facility claim with an Colonoscopy procedure and a qualifying diagnosis; or
- A professional claim with a Colonoscopy procedure and a qualifying diagnosis

Duration

There is a three-day look-back and the episode remains open for a fourteen-day look-forward/post-procedure period.

Claims Assignment

All claims from the episode start through episode end that have relevant procedures and/or diagnosis codes are assigned to the episode. Services with diagnosis codes related to Colonoscopy and for other associated conditions (e.g. neoplasms/cancer, GI bleed, irritable bowel, gastroenteritis, ulcerative colitis, or other GI disorders), or have been defined by physician consultants as typical care for Colonoscopy, are included in the episode. Relevant Rx claims are also assigned as typical.

Episode Associations

At level 2, Colonoscopy (COLOS) is associated to Colorectal Resection (COLON) and Colonoscopy (COLOS) as typical.

At level 3, Pneumonia (PNE), Stroke (STR), and Acute Myocardial Infarction are associated to Colonoscopy (COLOS) as complications.

At level 4, Colonoscopy (COLOS) is associated to Diverticulitis (DIVERT) as typical.

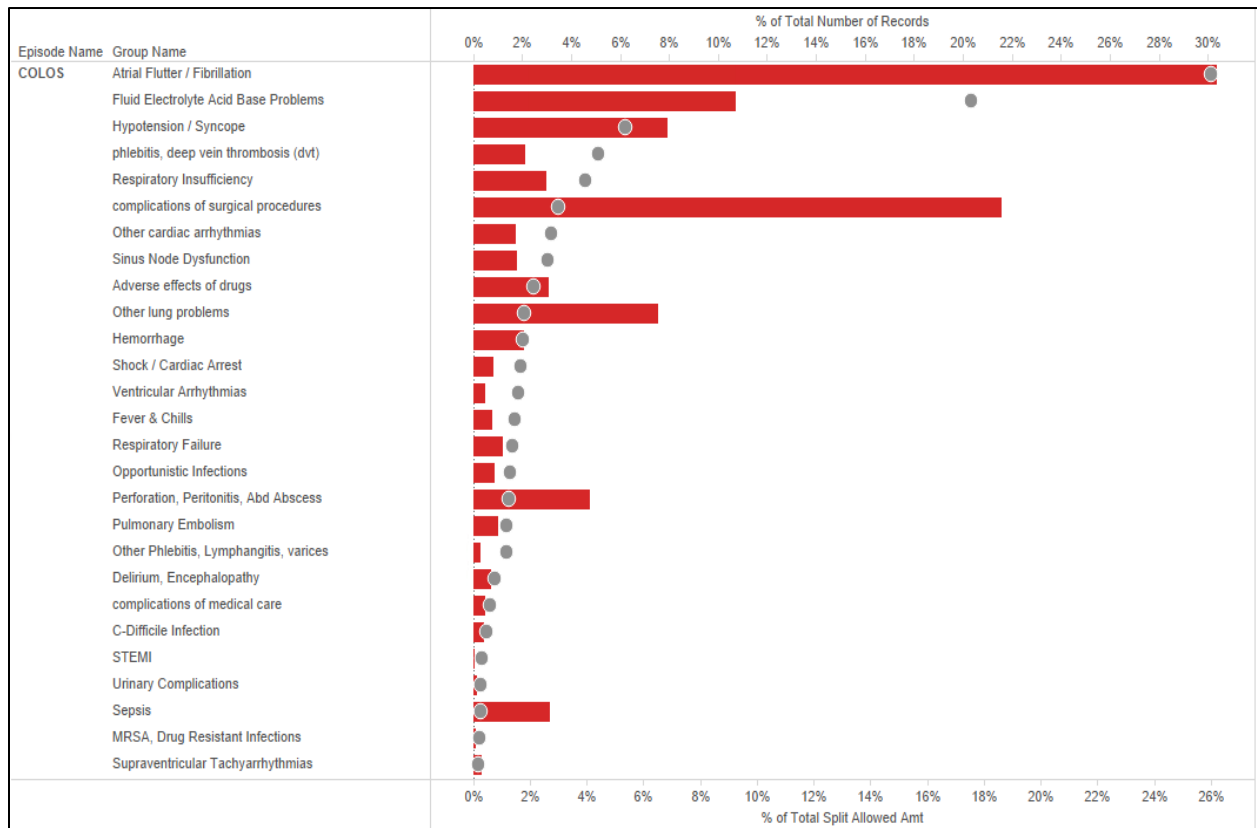
At level 5, Colonoscopy (COLOS) is associated to Colon Cancer (CLNCAN), Rectal Cancer (RCLCAN), Chron's Disease (CROHNS), Ulcerative Colitis (ULCLTS), and Preventive Care (PREVNT) as typical.

Subtypes

Subtype groups include different types and severity of neoplasms/cancer, congenital GI problems, ulcerative colitis, diverticulitis, and lower GI disorders; and different Colonoscopy procedures (therapeutic, with biopsy/polypectomy, through stoma, partial colectomy, sigmoidoscopy, etc.).

PACs

PAC costs typically make up about 3 percent of total episode costs. The diagnoses contributing to the highest volume and proportion of PAC costs include atrial flutter/fibrillation, fluid electrolyte problems, hypotension/syncope, and other surgical complications.



PAC costs by group as a percentage of total PAC costs

D. Exhibit D - Maternity Handout

Background:

PROMETHEUS contains several episodes designed to track costs and improve care for both mother and child during the prenatal and immediate post-delivery periods. Currently, those episodes are Pregnancy (PREGN), C-Section (CSECT), Vaginal Delivery (VAGDEL) and Newborn. Together, these comprise the “Maternity Episodes.”

Triggers:

PREGN is unique among episodes in that it is triggered retroactively by the presence of a VAGDEL or CSECT episode.

Together, these delivery episodes are triggered by procedural and/or diagnosis codes that are consistent with either a vaginal delivery or a cesarean section.

The Newborn episode is in turn triggered by a definitive newborn diagnosis.

Duration:

Since PREGN is triggered by a delivery episode, it has a 300-day look-back and no look-forward period.

VAGDEL and CSECT have a three-day look-back period and a 60-day post-discharge period to capture any follow-up care.

The newborn episode has no look-back period and a 30-day look-forward period.

Claims Assignment:

Services with diagnosis codes for signs and symptoms related to pregnancy such as absence of menstruation have been defined as typical care for PREGN, and conditions such as electrolyte disturbances have been labeled as complications.

Services that are part of expected or routine care of the mother during and after a delivery are assigned to VAGDEL or CSECT as typical costs. Those related to complications or adverse outcomes are assigned as complications.

Services that are part of the expected or routine care of the child during and after a delivery are assigned to the Newborn episode as typical costs. Those related to complications or adverse outcomes are assigned as complications.

Episode Associations:

Vaginal Delivery (VAGDEL) or Cesarean Section (CSECT) episodes are linked back to the Pregnancy episode to understand the frequency and consequently the appropriateness of C-sections in pregnancy. In addition, other concurrent episodes of AMI, Pneumonia and Stroke are linked back at the member level to the Maternity episodes as complications (with the exception of NBORN as they would represent maternal complications). The full list of associations is as follows

Primary Episode	Subsidiary Episode	Association Type	Level of Association
PREGN	STR (Stroke)	Complication	5
PREGN	PNE (Pneumonia)	Complication	5
PREGN	AMI (Acute Myocardial Infarction)	Complication	5
PREGN	VAGDEL	Typical	5
PREGN	CSECT	Complication	5
VAGDEL	STR	Complication	3
VAGDEL	PNE	Complication	3
VAGDEL	AMI	Complication	3
VAGDEL	HYST (Hysterectomy)	Complication	3
CSECT	STR	Complication	3
CSECT	PNE	Complication	3
CSECT	AMI	Complication	3
CSECT	HYST	Complication	3
NBORN	(None)	(NA)	(NA)

PACs:

PACs typically make up less than 10 percent of the episode costs for deliveries and newborns, while they make up about 40 percent of the episode costs for pregnancy. In pregnancy, PACs include fetal abnormalities and poor fetal growth as well as nausea and vomiting. However, the most significant contributor to the relatively higher proportion of costs being classified as PACs for the pregnancy is the fact that as noted above, C-Section costs in their entirety are associated to the pregnancies at the highest level as PAC costs. More than 85 percent of the PAC costs for vaginal delivery episodes were for complications during labor and delivery (obstetrical trauma, post-partum hemorrhage and other puerperal complications). For C-Sections, the highest volume of PACs was for complications related to the index procedure such as post-op adhesions and obstetrical wound complications, making up about 15 percent of PAC costs. While cardiac arrest was much less frequent, it comprised nearly one-half of the PAC costs in C-

section episodes. The most significant PAC costs for newborns were for sepsis and respiratory complications.

Subtypes:

Each episode has its own list of subtypes designed to provide more granularity to analysis. Many are related to complications or member risk factors and others are related to other clinical distinction of potential interest or significance. Many subtypes are relevant across all the Maternity episodes. Some representative examples for each episode include the following:

PREGN - Gestational diabetes, history of fetal loss, elderly primi, ABO/Rh iso-immunization, maternal alcohol use, HIV, previous c-section, high risk pregnancy, malpresentation, multiple gestation

VAGDEL - ABO/Rh iso-immunization, maternal alcohol use, HIV, previous C-section, high risk pregnancy, malpresentation, multiple gestation

CSECT - ABO/Rh iso-immunization, maternal alcohol use, HIV, previous C-section, high risk pregnancy, malpresentation, multiple gestation

NBORN - Failure to thrive, maternal conditions affecting newborn, neonatal ICU level, umbilical cord prolapse, complicated vaginal birth

E. Exhibit E - Gall Bladder Handout

Trigger

The Gall Bladder Surgery episode can be triggered by:

- An inpatient stay with a Gall Bladder Surgery-specific principal procedure code and the principal diagnosis is qualifying for Gall Bladder Surgery;
- An outpatient facility claim with a Gall Bladder Surgery procedure code and a qualifying diagnosis; or
- A professional claim with a Gall Bladder Surgery procedure code and a qualifying diagnosis

Duration

There is a 30-day look-back period to capture pre-operative diagnostic workup leading to the surgery and a 90-day post-discharge period.

Claims Assignment

All claims from the episode start through episode end that have relevant procedures and/or diagnosis codes are assigned to the episode. Services with diagnosis codes related to Gall Bladder Surgery and for other associated conditions (e.g. cholangitis, cholecystitis, or other gall bladder or biliary tract disease), or have been defined by physician consultants as typical care for Gall Bladder Surgery, are included in the episode. Relevant Rx claims are also assigned as typical.

Episode Associations

At level 2, Upper GI Endoscopy (EGD) is associated to Gall Bladder Surgery (GBSURG) as typical.

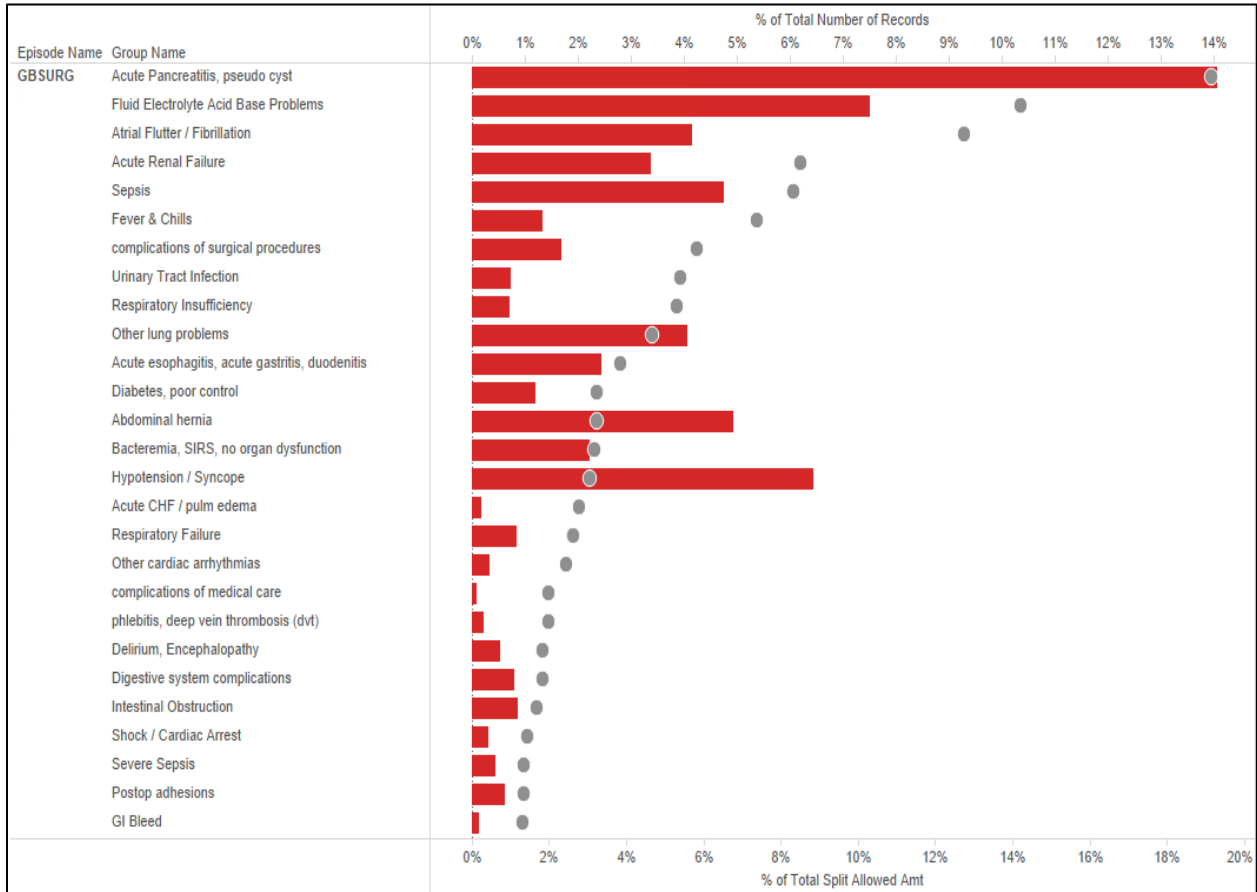
At level 3, Pneumonia (PNE) and Acute Myocardial Infarction (AMI) are associated to Gall Bladder Surgery (GBSURG) as complications.

Subtypes

Subtype groups include; different types and severity of gall bladder or hepatobiliary cancer, cholangitis, and cholecystitis; and different Gall Bladder Surgery procedures (e.g. laparoscopic, open, robotic).

PACs

PACs typically make up about 11 percent of total episode costs. The diagnoses contributing to the highest volume and proportion of PAC costs include acute pancreatitis, fluid electrolyte problems, acute renal failure, sepsis, and respiratory failure.



PAC costs by group as a percentage of total PAC costs

F. Exhibit F - Upper GI handout

Trigger

The Upper GI Endoscopy episode can be triggered by:

- An outpatient facility claim with an Upper GI Endoscopy procedure code and a qualifying diagnosis; or
- A professional claim with an Upper GI Endoscopy procedure code and a qualifying diagnosis

Duration

There is a three-day look-back and the episode remains open for a 14-day look-forward/post-procedure period.

Claims Assignment

All claims from the episode start through episode end that have relevant procedures and/or diagnosis codes are assigned to the episode. Services with diagnosis codes related to Upper GI Endoscopy and for other associated conditions (e.g. GERD, neoplasms/cancer, GI bleed, esophagitis/gastritis, or other GI disorders), or that have been defined by physician consultants as typical care for Upper GI Endoscopy, are included in the episode. Relevant Rx claims are also assigned to the episode as typical.

Episode Associations

At level 2, Upper GI Endoscopy (EGD) is associated to Gall Bladder Surgery (GBSURG) and Bariatric Surgery (BARI) as typical.

At level 3, Pneumonia (PNE), Stroke (STR), and Acute Myocardial Infarction (AMI) are associated to Upper GI Endoscopy (EGD) as complications.

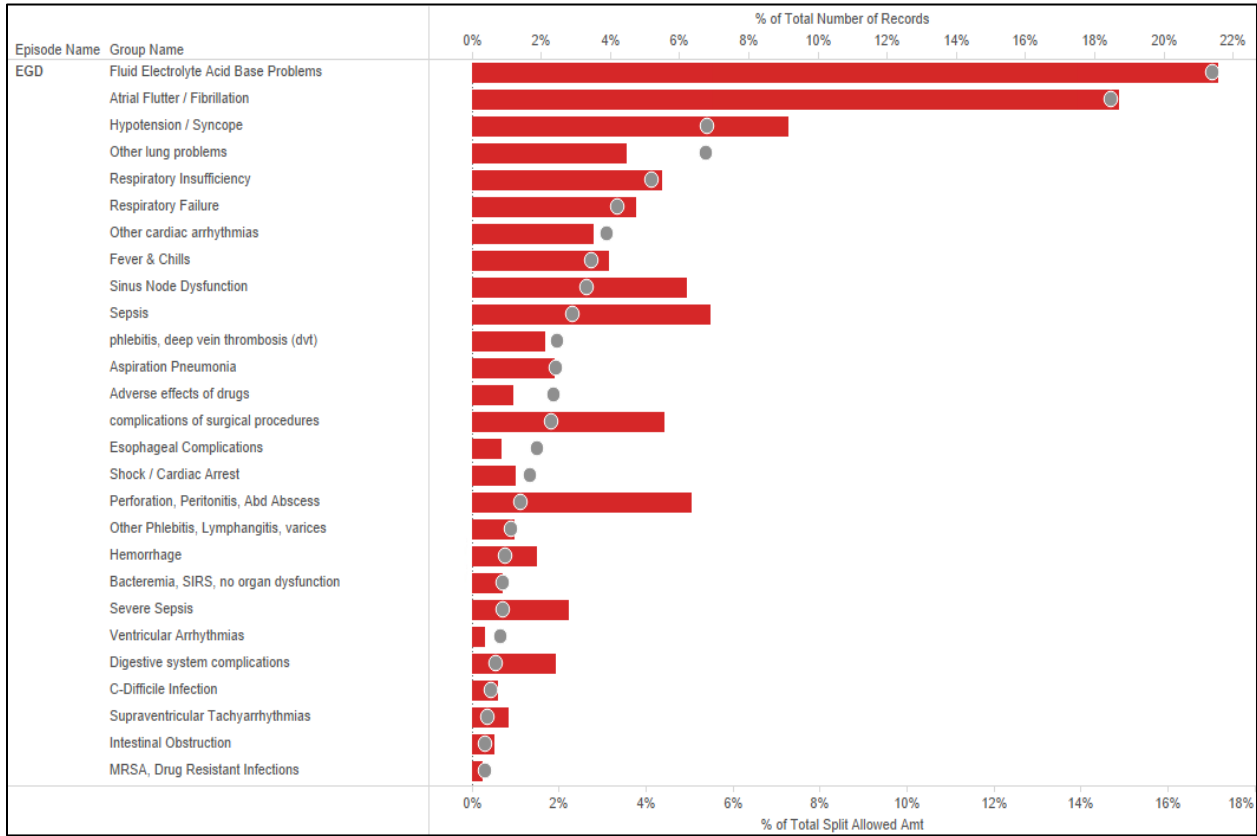
At level 5, Upper GI Endoscopy (EGD) is associated to Hepatitis C (HCV) and Gastro-Esophageal Reflux Disease (GERD) as typical.

Subtypes

Subtype groups include different types and severity of neoplasms/cancer, congenital GI problems, upper GI disorders, and different Upper GI Endoscopy procedures (with dilation, with biopsy, or with treatment of varices, etc.).

PACs

PACs typically make up about 7 percent of total episode costs. The diagnoses contributing to the highest volume and proportion of PAC costs include fluid electrolyte problems, atrial flutter/fibrillation, hypotension/syncope, sepsis, and perforation/peritonitis/abscess.



PAC costs by group as a percentage of total PAC costs

G. Exhibit G - BIDM Definition of SUD for Data Scrubbing

Type	Code	Description
APRDRG	770	Drug & Alcohol Abuse or Dependence, Left Against Medical Advice
APRDRG	772	Alcohol & Drug Dependence w Rehab or Rehab/detox Therapy
APRDRG	773	Opioid Abuse & Dependence
APRDRG	774	Cocaine Abuse & Dependence
APRDRG	775	Alcohol Abuse & Dependence
APRDRG	776	Other Drug Abuse & Dependence
APRDRG	816	Toxic Effects of Non-Medicinal Substances
CMSDRG	0433	
CMSDRG	0521	
CMSDRG	0522	
CMSDRG	0523	
CMSDRG	0936	
CPT4_Code	4158F	Pt Edu Re Alcoh Drnkng Done
CPT4_Code	4290F	Pt Scrned For Inj Drug Use
CPT4_Code	4306F	Pt Tlk Psych & Rx Opd Addic
CPT4_Code	4320F	Pt Talk Psychsoc&rx Oh Dpnd
CPT4_Code	80100	Drug Screen Qualitate/multi
CPT4_Code	80101	Drug Screen Single
CPT4_Code	80102	Drug Confirmation
CPT4_Code	80154	Assay Of Benzodiazepines
CPT4_Code	80299	Quantitative Assay Drug
CPT4_Code	82055	Assay Of Ethanol
CPT4_Code	82075	Assay Of Breath Ethanol
CPT4_Code	82145	Assay Of Amphetamines
CPT4_Code	82205	Assay Of Barbiturates
CPT4_Code	82441	Test For Chlorohydrocarbons
CPT4_Code	82491	Chromotography Quant Sing
CPT4_Code	82520	Assay Of Cocaine
CPT4_Code	82646	Assay Of Dihydrocodeinone
CPT4_Code	82649	Assay Of Dihydromorphinone
CPT4_Code	83840	Assay Of Methadone
CPT4_Code	83925	Assay Of Opiates
CPT4_Code	83992	Assay For Phencyclidine
CPT4_Code	99408	Audit/dast 15-30 Min
CPT4_Code	99409	Audit/dast Over 30 Min
CPT4_Code	G0396	Alcohol/subs Interv 15-30mn
CPT4_Code	G0397	Alcohol/subs Interv >30 Min
CPT4_Code	G0431	Drug Screen Multiple Class
CPT4_Code	G0434	Drug Screen Multi Drug Class
CPT4_Code	H0001	Alcohol And/or Drug Assess
CPT4_Code	H0002	Alcohol And/or Drug Screenin
CPT4_Code	H0003	Alcohol And/or Drug Screenin
CPT4_Code	H0004	Alcohol And/or Drug Services
CPT4_Code	H0005	Alcohol And/or Drug Services
CPT4_Code	H0006	Alcohol And/or Drug Services
CPT4_Code	H0007	Alcohol And/or Drug Services

Type	Code	Description
CPT4_Code	H0008	Alcohol And/or Drug Services
CPT4_Code	H0009	Alcohol And/or Drug Services
CPT4_Code	H0010	Alcohol And/or Drug Services
CPT4_Code	H0011	Alcohol And/or Drug Services
CPT4_Code	H0012	Alcohol And/or Drug Services
CPT4_Code	H0013	Alcohol And/or Drug Services
CPT4_Code	H0014	Alcohol And/or Drug Services
CPT4_Code	H0015	Alcohol And/or Drug Services
CPT4_Code	H0016	Alcohol And/or Drug Services
CPT4_Code	H0017	Alcohol And/or Drug Services
CPT4_Code	H0018	Alcohol And/or Drug Services
CPT4_Code	H0019	Alcohol And/or Drug Services
CPT4_Code	H0020	Alcohol And/or Drug Services
CPT4_Code	H0021	Alcohol And/or Drug Training
CPT4_Code	H0022	Alcohol And/or Drug Interven
CPT4_Code	H0023	Alcohol And/or Drug Outreach
CPT4_Code	H0024	Alcohol And/or Drug Preventi
CPT4_Code	H0025	Alcohol And/or Drug Preventi
CPT4_Code	H0026	Alcohol And/or Drug Preventi
CPT4_Code	H0027	Alcohol And/or Drug Preventi
CPT4_Code	H0028	Alcohol And/or Drug Preventi
CPT4_Code	H0029	Alcohol And/or Drug Preventi
CPT4_Code	H0030	Alcohol And/or Drug Hotline
CPT4_Code	H0047	Alcohol/drug Abuse Svc Nos
CPT4_Code	H0049	Alcohol/drug Screening
CPT4_Code	H0050	Alcohol/drug Service 15 Min
CPT4_Code	H2034	A/d Halfway House, Per Diem
CPT4_Code	H2035	A/d Tx Program, Per Hour
CPT4_Code	H2036	A/d Tx Program, Per Diem
CPT4_Code	S3005	Eval Self-Assess Depression
CPT4_Code	S9445	Pt Education Noc Individ
CPT4_Code	S9475	Ambulatory Setting Substance
CPT4_Code	T1006	Family/couple Counseling
CPT4_Code	T1007	Treatment Plan Development
CPT4_Code	T1008	Day Treatment For Individual
CPT4_Code	T1009	Child Sitting Services
CPT4_Code	T1010	Meals When Receive Services
CPT4_Code	T1011	Alcohol/substance Abuse Noc
CPT4_Code	T1012	Alcohol/substance Abuse Skil
CPT4_Code	T1019	Detox: provision of daily needs
CPT4_Code	T1023	Program Intake Assessment
EAPG	00311	Full Day Partial Hospitalization for Substance Abuse
EAPG	00313	Half Day Partial Hospitalization for Substance Abuse
EAPG	00320	Case Management & Treatment Plan Development - Mental Health or Substance Abuse
EAPG	00840	Opioid Abuse & Dependence
EAPG	00841	Cocaine Abuse & Dependence
EAPG	00842	Alcohol Abuse & Dependence
EAPG	00843	Other Drug Abuse & Dependence

Type	Code	Description
EAPG	00854	Toxic Effects of Non-Medicinal Substances
ICD10DX	F1010	Alcohol abuse, uncomplicated
ICD10DX	F10120	Alcohol abuse with intoxication, uncompl
ICD10DX	F10121	Alcohol abuse with intoxication delirium
ICD10DX	F10129	Alcohol abuse with intoxication, unspeci
ICD10DX	F1014	Alcohol abuse with alcohol-induced mood
ICD10DX	F10150	Alcohol abuse w alcoh-induce psychotic d
ICD10DX	F10151	Alcohol abuse w alcoh-induce psychotic d
ICD10DX	F10159	Alcohol abuse with alcohol-induced psych
ICD10DX	F10180	Alcohol abuse with alcohol-induced anxie
ICD10DX	F10181	Alcohol abuse with alcohol-induced sexua
ICD10DX	F10182	Alcohol abuse with alcohol-induced sleep
ICD10DX	F10188	Alcohol abuse with other alcohol-induced
ICD10DX	F1019	Alcohol abuse with unspecified alcohol-i
ICD10DX	F1020	Alcohol dependence, uncomplicated
ICD10DX	F1021	Alcohol dependence, in remission
ICD10DX	F10220	Alcohol dependence with intoxication, un
ICD10DX	F10221	Alcohol dependence with intoxication del
ICD10DX	F10229	Alcohol dependence with intoxication, un
ICD10DX	F10230	Alcohol dependence with withdrawal, unco
ICD10DX	F10231	Alcohol dependence with withdrawal delir
ICD10DX	F10232	Alcohol dependence w withdrawal with per
ICD10DX	F10239	Alcohol dependence with withdrawal, unsp
ICD10DX	F1024	Alcohol dependence with alcohol-induced
ICD10DX	F10250	Alcohol depend w alcoh-induce psychotic
ICD10DX	F10251	Alcohol depend w alcoh-induce psychotic
ICD10DX	F10259	Alcohol dependence w alcoh-induce psycho
ICD10DX	F1026	Alcohol depend w alcoh-induce persisting
ICD10DX	F1027	Alcohol dependence with alcohol-induced
ICD10DX	F10280	Alcohol dependence with alcohol-induced
ICD10DX	F10281	Alcohol dependence with alcohol-induced
ICD10DX	F10282	Alcohol dependence with alcohol-induced
ICD10DX	F10288	Alcohol dependence with other alcohol-in
ICD10DX	F1029	Alcohol dependence with unspecified alco
ICD10DX	F10920	Alcohol use, unspecified with intoxicati
ICD10DX	F10921	Alcohol use, unspecified with intoxicati
ICD10DX	F10929	Alcohol use, unspecified with intoxicati
ICD10DX	F1094	Alcohol use, unspecified with alcohol-in
ICD10DX	F10950	Alcohol use, unsp w alcoh-induce psych d
ICD10DX	F10951	Alcohol use, unsp w alcoh-induce psych d
ICD10DX	F10959	Alcohol use, unsp w alcohol-induced psyc
ICD10DX	F1096	Alcohol use, unsp w alcoh-induce persist
ICD10DX	F10980	Alcohol use, unsp with alcohol-induced a
ICD10DX	F10981	Alcohol use, unsp with alcohol-induced s
ICD10DX	F10982	Alcohol use, unspecified with alcohol-in
ICD10DX	F10988	Alcohol use, unspecified with other alco
ICD10DX	F1099	Alcohol use, unsp with unspecified alcoh
ICD10DX	F1110	Opioid abuse, uncomplicated
ICD10DX	F11120	Opioid abuse with intoxication, uncompli

Type	Code	Description
ICD10DX	F11121	Opioid abuse with intoxication delirium
ICD10DX	F11122	Opioid abuse with intoxication with perc
ICD10DX	F11129	Opioid abuse with intoxication, unspecif
ICD10DX	F1114	Opioid abuse with opioid-induced mood di
ICD10DX	F11150	Opioid abuse w opioid-induced psychotic
ICD10DX	F11151	Opioid abuse w opioid-induced psychotic
ICD10DX	F11159	Opioid abuse with opioid-induced psychot
ICD10DX	F11181	Opioid abuse with opioid-induced sexual
ICD10DX	F11182	Opioid abuse with opioid-induced sleep d
ICD10DX	F11188	Opioid abuse with other opioid-induced d
ICD10DX	F1119	Opioid abuse with unspecified opioid-ind
ICD10DX	F1120	Opioid dependence, uncomplicated
ICD10DX	F1121	Opioid dependence, in remission
ICD10DX	F11220	Opioid dependence with intoxication, unc
ICD10DX	F11221	Opioid dependence with intoxication deli
ICD10DX	F11222	Opioid dependence w intoxication with pe
ICD10DX	F11229	Opioid dependence with intoxication, uns
ICD10DX	F1123	Opioid dependence with withdrawal
ICD10DX	F1124	Opioid dependence with opioid-induced mo
ICD10DX	F11250	Opioid depend w opioid-induc psychotic d
ICD10DX	F11251	Opioid depend w opioid-induc psychotic d
ICD10DX	F11259	Opioid dependence w opioid-induced psych
ICD10DX	F11281	Opioid dependence with opioid-induced se
ICD10DX	F11282	Opioid dependence with opioid-induced sl
ICD10DX	F11288	Opioid dependence with other opioid-indu
ICD10DX	F1129	Opioid dependence with unspecified opioi
ICD10DX	F1190	Opioid use, unspecified, uncomplicated
ICD10DX	F11920	Opioid use, unspecified with intoxicatio
ICD10DX	F11921	Opioid use, unspecified with intoxicatio
ICD10DX	F11922	Opioid use, unsp w intoxication with per
ICD10DX	F11929	Opioid use, unspecified with intoxicatio
ICD10DX	F1193	Opioid use, unspecified with withdrawal
ICD10DX	F1194	Opioid use, unspecified with opioid-indu
ICD10DX	F11950	Opioid use, unsp w opioid-induc psych di
ICD10DX	F11951	Opioid use, unsp w opioid-induc psych di
ICD10DX	F11959	Opioid use, unsp w opioid-induced psycho
ICD10DX	F11981	Opioid use, unsp with opioid-induced sex
ICD10DX	F11982	Opioid use, unspecified with opioid-indu
ICD10DX	F11988	Opioid use, unspecified with other opioi
ICD10DX	F1199	Opioid use, unsp with unspecified opioid
ICD10DX	F1210	Cannabis abuse, uncomplicated
ICD10DX	F12120	Cannabis abuse with intoxication, uncomp
ICD10DX	F12121	Cannabis abuse with intoxication deliriu
ICD10DX	F12122	Cannabis abuse with intoxication with pe
ICD10DX	F12129	Cannabis abuse with intoxication, unspec
ICD10DX	F12150	Cannabis abuse with psychotic disorder w
ICD10DX	F12151	Cannabis abuse with psychotic disorder w
ICD10DX	F12159	Cannabis abuse with psychotic disorder,
ICD10DX	F12180	Cannabis abuse with cannabis-induced anx

Type	Code	Description
ICD10DX	F12188	Cannabis abuse with other cannabis-induc
ICD10DX	F1219	Cannabis abuse with unspecified cannabis
ICD10DX	F1220	Cannabis dependence, uncomplicated
ICD10DX	F1221	Cannabis dependence, in remission
ICD10DX	F12220	Cannabis dependence with intoxication, u
ICD10DX	F12221	Cannabis dependence with intoxication de
ICD10DX	F12222	Cannabis dependence w intoxication w per
ICD10DX	F12229	Cannabis dependence with intoxication, u
ICD10DX	F12250	Cannabis dependence with psychotic disor
ICD10DX	F12251	Cannabis dependence w psychotic disorder
ICD10DX	F12259	Cannabis dependence with psychotic disor
ICD10DX	F12280	Cannabis dependence with cannabis-induce
ICD10DX	F12288	Cannabis dependence with other cannabis-
ICD10DX	F1229	Cannabis dependence with unsp cannabis-i
ICD10DX	F1290	Cannabis use, unspecified, uncomplicated
ICD10DX	F12920	Cannabis use, unspecified with intoxicat
ICD10DX	F12921	Cannabis use, unspecified with intoxicat
ICD10DX	F12922	Cannabis use, unsp w intoxication w perc
ICD10DX	F12929	Cannabis use, unspecified with intoxicat
ICD10DX	F12950	Cannabis use, unsp with psychotic disord
ICD10DX	F12951	Cannabis use, unsp w psychotic disorder
ICD10DX	F12959	Cannabis use, unsp with psychotic disord
ICD10DX	F12980	Cannabis use, unspecified with anxiety d
ICD10DX	F12988	Cannabis use, unsp with other cannabis-i
ICD10DX	F1299	Cannabis use, unsp with unsp cannabis-in
ICD10DX	F1310	Sedative, hypnotic or anxiolytic abuse,
ICD10DX	F13120	Sedatv/hyp/anxiolytc abuse w intoxicatio
ICD10DX	F13121	Sedatv/hyp/anxiolytc abuse w intoxicatio
ICD10DX	F13129	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F1314	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F13150	Sedatv/hyp/anxiolytc abuse w psychotic d
ICD10DX	F13151	Sedatv/hyp/anxiolytc abuse w psychotic d
ICD10DX	F13159	Sedatv/hyp/anxiolytc abuse w psychotic d
ICD10DX	F13180	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F13181	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F13182	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F13188	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F1319	Sedative, hypnotic or anxiolytic abuse w
ICD10DX	F1320	Sedative, hypnotic or anxiolytic depende
ICD10DX	F1321	Sedative, hypnotic or anxiolytic depende
ICD10DX	F13220	Sedatv/hyp/anxiolytc dependence w intoxi
ICD10DX	F13221	Sedatv/hyp/anxiolytc dependence w intoxi
ICD10DX	F13229	Sedatv/hyp/anxiolytc dependence w intoxi
ICD10DX	F13230	Sedatv/hyp/anxiolytc dependence w withdr
ICD10DX	F13231	Sedatv/hyp/anxiolytc dependence w withdr
ICD10DX	F13232	Sedatv/hyp/anxiolytc depend w w/drawal w
ICD10DX	F13239	Sedatv/hyp/anxiolytc dependence w withdr
ICD10DX	F1324	Sedative, hypnotic or anxiolytic depende
ICD10DX	F13250	Sedatv/hyp/anxiolytc depend w psychotic

Type	Code	Description
ICD10DX	F13251	Sedativ/hyp/anxiolytic depend w psychotic
ICD10DX	F13259	Sedativ/hyp/anxiolytic dependence w psycho
ICD10DX	F1326	Sedativ/hyp/anxiolytic depend w persisting
ICD10DX	F1327	Sedativ/hyp/anxiolytic dependence w persis
ICD10DX	F13280	Sedativ/hyp/anxiolytic dependence w anxiet
ICD10DX	F13281	Sedativ/hyp/anxiolytic dependence w sexual
ICD10DX	F13282	Sedative, hypnotic or anxiolytic depende
ICD10DX	F13288	Sedative, hypnotic or anxiolytic depende
ICD10DX	F1329	Sedative, hypnotic or anxiolytic depende
ICD10DX	F1390	Sedative, hypnotic, or anxiolytic use, u
ICD10DX	F13920	Sedativ/hyp/anxiolytic use, unsp w intoxic
ICD10DX	F13921	Sedativ/hyp/anxiolytic use, unsp w intoxic
ICD10DX	F13929	Sedativ/hyp/anxiolytic use, unsp w intoxic
ICD10DX	F13930	Sedativ/hyp/anxiolytic use, unsp w withdra
ICD10DX	F13931	Sedativ/hyp/anxiolytic use, unsp w withdra
ICD10DX	F13932	Sedativ/hyp/anxiolytic use, unsp w w/drawa
ICD10DX	F13939	Sedativ/hyp/anxiolytic use, unsp w withdra
ICD10DX	F1394	Sedative, hypnotic or anxiolytic use, un
ICD10DX	F13950	Sedativ/hyp/anxiolytic use, unsp w psych d
ICD10DX	F13951	Sedativ/hyp/anxiolytic use, unsp w psych d
ICD10DX	F13959	Sedativ/hyp/anxiolytic use, unsp w psychot
ICD10DX	F1396	Sedativ/hyp/anxiolytic use, unsp w persist
ICD10DX	F1397	Sedativ/hyp/anxiolytic use, unsp w persist
ICD10DX	F13980	Sedativ/hyp/anxiolytic use, unsp w anxiety
ICD10DX	F13981	Sedativ/hyp/anxiolytic use, unsp w sexual
ICD10DX	F13982	Sedative, hypnotic or anxiolytic use, un
ICD10DX	F13988	Sedative, hypnotic or anxiolytic use, un
ICD10DX	F1399	Sedative, hypnotic or anxiolytic use, un
ICD10DX	F1410	Cocaine abuse, uncomplicated
ICD10DX	F14120	Cocaine abuse with intoxication, uncompl
ICD10DX	F14121	Cocaine abuse with intoxication with del
ICD10DX	F14122	Cocaine abuse with intoxication with per
ICD10DX	F14129	Cocaine abuse with intoxication, unspeci
ICD10DX	F1414	Cocaine abuse with cocaine-induced mood
ICD10DX	F14150	Cocaine abuse w cocaine-induc psychotic
ICD10DX	F14151	Cocaine abuse w cocaine-induc psychotic
ICD10DX	F14159	Cocaine abuse with cocaine-induced psych
ICD10DX	F14180	Cocaine abuse with cocaine-induced anxie
ICD10DX	F14181	Cocaine abuse with cocaine-induced sexua
ICD10DX	F14182	Cocaine abuse with cocaine-induced sleep
ICD10DX	F14188	Cocaine abuse with other cocaine-induced
ICD10DX	F1419	Cocaine abuse with unspecified cocaine-i
ICD10DX	F1420	Cocaine dependence, uncomplicated
ICD10DX	F1421	Cocaine dependence, in remission
ICD10DX	F14220	Cocaine dependence with intoxication, un
ICD10DX	F14221	Cocaine dependence with intoxication del
ICD10DX	F14222	Cocaine dependence w intoxication w perc
ICD10DX	F14229	Cocaine dependence with intoxication, un
ICD10DX	F1423	Cocaine dependence with withdrawal

Type	Code	Description
ICD10DX	F1424	Cocaine dependence with cocaine-induced
ICD10DX	F14250	Cocaine depend w cocaine-induc psych dis
ICD10DX	F14251	Cocaine depend w cocaine-induc psychotic
ICD10DX	F14259	Cocaine dependence w cocaine-induc psych
ICD10DX	F14280	Cocaine dependence with cocaine-induced
ICD10DX	F14281	Cocaine dependence with cocaine-induced
ICD10DX	F14282	Cocaine dependence with cocaine-induced
ICD10DX	F14288	Cocaine dependence with other cocaine-in
ICD10DX	F1429	Cocaine dependence with unspecified coca
ICD10DX	F1490	Cocaine use, unspecified, uncomplicated
ICD10DX	F14920	Cocaine use, unspecified with intoxicati
ICD10DX	F14921	Cocaine use, unspecified with intoxicati
ICD10DX	F14922	Cocaine use, unsp w intoxication with pe
ICD10DX	F14929	Cocaine use, unspecified with intoxicati
ICD10DX	F1494	Cocaine use, unspecified with cocaine-in
ICD10DX	F14950	Cocaine use, unsp w cocaine-induc psych
ICD10DX	F14951	Cocaine use, unsp w cocaine-induc psych
ICD10DX	F14959	Cocaine use, unsp w cocaine-induced psyc
ICD10DX	F14980	Cocaine use, unsp with cocaine-induced a
ICD10DX	F14981	Cocaine use, unsp with cocaine-induced s
ICD10DX	F14982	Cocaine use, unspecified with cocaine-in
ICD10DX	F14988	Cocaine use, unspecified with other coca
ICD10DX	F1499	Cocaine use, unsp with unspecified cocai
ICD10DX	F1510	Other stimulant abuse, uncomplicated
ICD10DX	F15120	Other stimulant abuse with intoxication,
ICD10DX	F15121	Other stimulant abuse with intoxication
ICD10DX	F15122	Oth stimulant abuse w intoxication w per
ICD10DX	F15129	Other stimulant abuse with intoxication,
ICD10DX	F1514	Other stimulant abuse with stimulant-ind
ICD10DX	F15150	Oth stimulant abuse w stim- induce psych
ICD10DX	F15151	Oth stimulant abuse w stim- induce psych
ICD10DX	F15159	Oth stimulant abuse w stim- induce psycho
ICD10DX	F15180	Oth stimulant abuse with stimulant-induc
ICD10DX	F15181	Oth stimulant abuse w stimulant-induced
ICD10DX	F15182	Other stimulant abuse with stimulant-ind
ICD10DX	F15188	Other stimulant abuse with other stimula
ICD10DX	F1519	Other stimulant abuse with unsp stimulan
ICD10DX	F1520	Other stimulant dependence, uncompliate
ICD10DX	F1521	Other stimulant dependence, in remission
ICD10DX	F15220	Other stimulant dependence with intoxica
ICD10DX	F15221	Other stimulant dependence with intoxica
ICD10DX	F15222	Oth stimulant dependence w intox w perce
ICD10DX	F15229	Other stimulant dependence with intoxica
ICD10DX	F1523	Other stimulant dependence with withdraw
ICD10DX	F1524	Oth stimulant dependence w stimulant-ind
ICD10DX	F15250	Oth stim depend w stim- induce psych diso
ICD10DX	F15251	Oth stimulant depend w stim- induce psych
ICD10DX	F15259	Oth stimulant depend w stim- induce psych
ICD10DX	F15280	Oth stimulant dependence w stim- induce a

Type	Code	Description
ICD10DX	F15281	Oth stimulant dependence w stim- induce s
ICD10DX	F15282	Oth stimulant dependence w stimulant-ind
ICD10DX	F15288	Oth stimulant dependence with oth stimul
ICD10DX	F1529	Oth stimulant dependence w unsp stimulan
ICD10DX	F1590	Other stimulant use, unspecified, uncomp
ICD10DX	F15920	Other stimulant use, unsp with intoxicat
ICD10DX	F15921	Other stimulant use, unspecified with in
ICD10DX	F15922	Oth stimulant use, unsp w intox w percep
ICD10DX	F15929	Other stimulant use, unsp with intoxicat
ICD10DX	F1593	Other stimulant use, unspecified with wi
ICD10DX	F1594	Oth stimulant use, unsp with stimulant-i
ICD10DX	F15950	Oth stim use, unsp w stim- induce psych d
ICD10DX	F15951	Oth stim use, unsp w stim- induce psych d
ICD10DX	F15959	Oth stimulant use, unsp w stim- induce ps
ICD10DX	F15980	Oth stimulant use, unsp w stimulant-indu
ICD10DX	F15981	Oth stimulant use, unsp w stim- induce se
ICD10DX	F15982	Oth stimulant use, unsp w stimulant-indu
ICD10DX	F15988	Oth stimulant use, unsp with oth stimula
ICD10DX	F1599	Oth stimulant use, unsp with unsp stimul
ICD10DX	F1610	Hallucinogen abuse, uncomplicated
ICD10DX	F16120	Hallucinogen abuse with intoxication, un
ICD10DX	F16121	Hallucinogen abuse with intoxication wit
ICD10DX	F16122	Hallucinogen abuse w intoxication w perc
ICD10DX	F16129	Hallucinogen abuse with intoxication, un
ICD10DX	F1614	Hallucinogen abuse with hallucinogen-ind
ICD10DX	F16150	Hallucinogen abuse w psychotic disorder
ICD10DX	F16151	Hallucinogen abuse w psychotic disorder
ICD10DX	F16159	Hallucinogen abuse w psychotic disorder,
ICD10DX	F16180	Hallucinogen abuse w hallucinogen- induce
ICD10DX	F16183	Hallucign abuse w hallucign persisting p
ICD10DX	F16188	Hallucinogen abuse with other hallucinog
ICD10DX	F1619	Hallucinogen abuse with unsp hallucinoge
ICD10DX	F1620	Hallucinogen dependence, uncomplicated
ICD10DX	F1621	Hallucinogen dependence, in remission
ICD10DX	F16220	Hallucinogen dependence with intoxicatio
ICD10DX	F16221	Hallucinogen dependence with intoxicatio
ICD10DX	F16229	Hallucinogen dependence with intoxicatio
ICD10DX	F1624	Hallucinogen dependence w hallucinogen-i
ICD10DX	F16250	Hallucinogen dependence w psychotic diso
ICD10DX	F16251	Hallucinogen dependence w psychotic diso
ICD10DX	F16259	Hallucinogen dependence w psychotic diso
ICD10DX	F16280	Hallucinogen dependence w anxiety disord
ICD10DX	F16283	Hallucign depend w hallucign persisting
ICD10DX	F16288	Hallucinogen dependence w oth hallucinog
ICD10DX	F1629	Hallucinogen dependence w unsp hallucino
ICD10DX	F1690	Hallucinogen use, unspecified, uncomplc
ICD10DX	F16920	Hallucinogen use, unsp with intoxication
ICD10DX	F16921	Hallucinogen use, unsp with intoxication
ICD10DX	F16929	Hallucinogen use, unspecified with intox

Type	Code	Description
ICD10DX	F1694	Hallucinogen use, unsp w hallucinogen-in
ICD10DX	F16950	Hallucinogen use, unsp w psychotic disor
ICD10DX	F16951	Hallucinogen use, unsp w psychotic disor
ICD10DX	F16959	Hallucinogen use, unsp w psychotic disor
ICD10DX	F16980	Hallucinogen use, unsp w anxiety disorde
ICD10DX	F16983	Hallucign use, unsp w hallucign persist
ICD10DX	F16988	Hallucinogen use, unsp w oth hallucinoge
ICD10DX	F1699	Hallucinogen use, unsp w unsp hallucinog
ICD10DX	F1810	Inhalant abuse, uncomplicated
ICD10DX	F18120	Inhalant abuse with intoxication, uncomp
ICD10DX	F18121	Inhalant abuse with intoxication deliriu
ICD10DX	F18129	Inhalant abuse with intoxication, unspec
ICD10DX	F1814	Inhalant abuse with inhalant-induced moo
ICD10DX	F18150	Inhalant abuse w inhalnt-induce psych di
ICD10DX	F18151	Inhalant abuse w inhalnt-induce psych di
ICD10DX	F18159	Inhalant abuse w inhalant-induced psycho
ICD10DX	F1817	Inhalant abuse with inhalant-induced dem
ICD10DX	F18180	Inhalant abuse with inhalant-induced anx
ICD10DX	F18188	Inhalant abuse with other inhalant-induc
ICD10DX	F1819	Inhalant abuse with unspecified inhalant
ICD10DX	F1820	Inhalant dependence, uncomplicated
ICD10DX	F1821	Inhalant dependence, in remission
ICD10DX	F18220	Inhalant dependence with intoxication, u
ICD10DX	F18221	Inhalant dependence with intoxication de
ICD10DX	F18229	Inhalant dependence with intoxication, u
ICD10DX	F1824	Inhalant dependence with inhalant-induce
ICD10DX	F18250	Inhalant depend w inhalnt-induce psych d
ICD10DX	F18251	Inhalant depend w inhalnt-induce psych d
ICD10DX	F18259	Inhalant depend w inhalnt-induce psychot
ICD10DX	F1827	Inhalant dependence with inhalant-induce
ICD10DX	F18280	Inhalant dependence with inhalant-induce
ICD10DX	F18288	Inhalant dependence with other inhalant-
ICD10DX	F1829	Inhalant dependence with unsp inhalant-i
ICD10DX	F1890	Inhalant use, unspecified, uncomplicated
ICD10DX	F18920	Inhalant use, unspecified with intoxicat
ICD10DX	F18921	Inhalant use, unspecified with intoxicat
ICD10DX	F18929	Inhalant use, unspecified with intoxicat
ICD10DX	F1894	Inhalant use, unsp with inhalant-induced
ICD10DX	F18950	Inhalant use, unsp w inhalnt-induce psyc
ICD10DX	F18951	Inhalant use, unsp w inhalnt-induce psyc
ICD10DX	F18959	Inhalant use, unsp w inhalnt-induce psyc
ICD10DX	F1897	Inhalant use, unsp with inhalant-induced
ICD10DX	F18980	Inhalant use, unsp with inhalant-induced
ICD10DX	F18988	Inhalant use, unsp with other inhalant-i
ICD10DX	F1899	Inhalant use, unsp with unsp inhalant-in
ICD10DX	F1910	Other psychoactive substance abuse, unco
ICD10DX	F19120	Oth psychoactive substance abuse w intox
ICD10DX	F19121	Oth psychoactive substance abuse with in
ICD10DX	F19122	Oth psychoactv substance abuse w intox w

Type	Code	Description
ICD10DX	F19129	Other psychoactive substance abuse with
ICD10DX	F1914	Oth psychoactive substance abuse w mood
ICD10DX	F19150	Oth psychoactv substance abuse w psych d
ICD10DX	F19151	Oth psychoactv substance abuse w psych d
ICD10DX	F19159	Oth psychoactive substance abuse w psych
ICD10DX	F1916	Oth psychoactv substance abuse w persist
ICD10DX	F1917	Oth psychoactive substance abuse w persi
ICD10DX	F19180	Oth psychoactive substance abuse w anxie
ICD10DX	F19181	Oth psychoactive substance abuse w sexua
ICD10DX	F19182	Oth psychoactive substance abuse w sleep
ICD10DX	F19188	Oth psychoactive substance abuse w oth d
ICD10DX	F1919	Oth psychoactive substance abuse w unsp
ICD10DX	F1920	Other psychoactive substance dependence,
ICD10DX	F1921	Other psychoactive substance dependence,
ICD10DX	F19220	Oth psychoactive substance dependence w
ICD10DX	F19221	Oth psychoactive substance dependence w
ICD10DX	F19222	Oth psychoactv substance depend w intox
ICD10DX	F19229	Oth psychoactive substance dependence w
ICD10DX	F19230	Oth psychoactive substance dependence w
ICD10DX	F19231	Oth psychoactive substance dependence w
ICD10DX	F19232	Oth psychoactv sub depend w w/drawal w p
ICD10DX	F19239	Oth psychoactive substance dependence wi
ICD10DX	F1924	Oth psychoactive substance dependence w
ICD10DX	F19250	Oth psychoactv substance depend w psych
ICD10DX	F19251	Oth psychoactv substance depend w psych
ICD10DX	F19259	Oth psychoactv substance depend w psycho
ICD10DX	F1926	Oth psychoactv substance depend w persis
ICD10DX	F1927	Oth psychoactive substance dependence w
ICD10DX	F19280	Oth psychoactive substance dependence w
ICD10DX	F19281	Oth psychoactive substance dependence w
ICD10DX	F19282	Oth psychoactive substance dependence w
ICD10DX	F19288	Oth psychoactive substance dependence w
ICD10DX	F1929	Oth psychoactive substance dependence w
ICD10DX	F1990	Other psychoactive substance use, unspc
ICD10DX	F19920	Oth psychoactive substance use, unsp w i
ICD10DX	F19921	Oth psychoactive substance use, unsp w i
ICD10DX	F19922	Oth psychoactv sub use, unsp w intox w p
ICD10DX	F19929	Oth psychoactive substance use, unsp wit
ICD10DX	F19930	Oth psychoactive substance use, unsp w w
ICD10DX	F19931	Oth psychoactive substance use, unsp w w
ICD10DX	F19932	Oth psychoactv sub use, unsp w w/drawal
ICD10DX	F19939	Other psychoactive substance use, unsp w
ICD10DX	F1994	Oth psychoactive substance use, unsp w m
ICD10DX	F19950	Oth psychoactv sub use, unsp w psych dis
ICD10DX	F19951	Oth psychoactv sub use, unsp w psych dis
ICD10DX	F19959	Oth psychoactv substance use, unsp w psy
ICD10DX	F1996	Oth psychoactv sub use, unsp w persist a
ICD10DX	F1997	Oth psychoactive substance use, unsp w p
ICD10DX	F19980	Oth psychoactive substance use, unsp w a

Type	Code	Description
ICD10DX	F19981	Oth psychoactive substance use, unsp w s
ICD10DX	F19982	Oth psychoactive substance use, unsp w s
ICD10DX	F19988	Oth psychoactive substance use, unsp w o
ICD10DX	F1999	Oth psychoactive substance use, unsp w u
ICD10DX	F550	Abuse of antacids
ICD10DX	F551	Abuse of herbal or folk remedies
ICD10DX	F552	Abuse of laxatives
ICD10DX	F553	Abuse of steroids or hormones
ICD10DX	F554	Abuse of vitamins
ICD10DX	F558	Abuse of other non-psychoactive substanc
ICD10DX	G312	Degeneration of nervous system due to al
ICD10DX	G720	Drug-induced myopathy
ICD10DX	G721	Alcoholic myopathy
ICD10DX	K2920	Alcoholic gastritis without bleeding
ICD10DX	K2921	Alcoholic gastritis with bleeding
ICD10DX	K700	Alcoholic fatty liver
ICD10DX	K7010	Alcoholic hepatitis without ascites
ICD10DX	K7011	Alcoholic hepatitis with ascites
ICD10DX	K702	Alcoholic fibrosis and sclerosis of live
ICD10DX	K7030	Alcoholic cirrhosis of liver without asc
ICD10DX	K7031	Alcoholic cirrhosis of liver with ascite
ICD10DX	K7040	Alcoholic hepatic failure without coma
ICD10DX	K7041	Alcoholic hepatic failure with coma
ICD10DX	K709	Alcoholic liver disease, unspecified
ICD10DX	O99320	Drug use complicating pregnancy, unspeci
ICD10DX	O99321	Drug use complicating pregnancy, first t
ICD10DX	O99322	Drug use complicating pregnancy, second
ICD10DX	O99323	Drug use complicating pregnancy, third t
ICD10DX	O99324	Drug use complicating childbirth
ICD10DX	O99325	Drug use complicating the puerperium
ICD10DX	P043	Newborn affected by maternal use of alco
ICD10DX	P0441	Newborn affected by maternal use of coca
ICD10DX	P0449	Newborn affected by maternal use of drug
ICD10DX	P962	Withdrawal symptoms from therapeutic use
ICD10DX	Q860	Fetal alcohol syndrome (dysmorphic)
ICD10DX	T401x4S	Poisoning by heroin, undetermined, seque
ICD10DX	T402x4S	Poisoning by other opioids, undetermined
ICD10DX	T403x4S	Poisoning by methadone, undetermined, se
ICD10DX	T404x4S	Poisoning by oth synthetic narcotics, un
ICD10DX	T405x1A	Poisoning by cocaine, accidental (uninte
ICD10DX	T405x4A	Poisoning by cocaine, undetermined, init
ICD10DX	T405x4S	Poisoning by cocaine, undetermined, sequ
ICD10DX	T405x5A	Adverse effect of cocaine, initial encou
ICD10DX	T405x5S	Adverse effect of cocaine, sequela
ICD10DX	T40604A	Poisoning by unsp narcotics, undetermine
ICD10DX	T40604S	Poisoning by unspecified narcotics, unde
ICD10DX	T40694A	Poisoning by other narcotics, undetermin
ICD10DX	T40694S	Poisoning by other narcotics, undetermin
ICD10DX	T407x1A	Poisoning by cannabis (derivatives), acc

Type	Code	Description
ICD10DX	T407x4S	Poisoning by cannabis (derivatives), und
ICD10DX	T408x1A	Poisoning by lysergide, accidental (unin
ICD10DX	T408x4S	Poisoning by lysergide ?LSD?, undetermin
ICD10DX	T40901A	Poisoning by unsp psychodyslept, acciden
ICD10DX	T40991A	Poisoning by oth psychodyslept, accident
ICD10DX	T43601A	Poisoning by unsp psychostim, accidental
ICD10DX	T510x1A	Toxic effect of ethanol, accidental (uni
ICD10DX	T510X2A	Toxic effect of ethanol, intentional sel
ICD10DX	T510X3A	Toxic effect of ethanol, assault, initia
ICD10DX	T510X4A	Toxic effect of ethanol, undetermined, i
ICD10DX	T511X1A	Toxic effect of methanol, accidental (un
ICD10DX	T511X2A	Toxic effect of methanol, intentional se
ICD10DX	T511X3A	Toxic effect of methanol, assault, initi
ICD10DX	T511X4A	Toxic effect of methanol, undetermined,
ICD10DX	T518x1D	Toxic effect of alcohols, accidental (un
ICD10DX	T518x2D	Toxic effect of oth alcohols, intentiona
ICD10DX	T518x3D	Toxic effect of other alcohols, assault,
ICD10DX	T518x4D	Toxic effect of other alcohols, undeterm
ICD10DX	T5191XA	Toxic effect of unsp alcohol, accidental
ICD10DX	T5191xD	Toxic effect of unsp alcohol, accidental
ICD10DX	T5192XA	Toxic effect of unsp alcohol, intentiona
ICD10DX	T5192xD	Toxic effect of unsp alcohol, intentiona
ICD10DX	T5193XA	Toxic effect of unspecified alcohol, ass
ICD10DX	T5193xD	Toxic effect of unspecified alcohol, ass
ICD10DX	T5194XA	Toxic effect of unsp alcohol, undetermin
ICD10DX	T5194xD	Toxic effect of unsp alcohol, undetermin
ICD10DX	Z6372	Alcoholism and drug addiction in family
ICD10DX	Z7141	Alcohol abuse counseling and surveillanc
ICD10DX	Z7142	Counseling for family member of alcoholi
ICD10DX	Z7151	Drug abuse counseling and surveillance o
ICD10DX	Z7152	Counseling for family member of drug abu
ICD10DX	Z811	Family history of alcohol abuse and depe
ICD10DX	Z813	Family history of psychoactv substance a
ICD10DX	Z814	Family history of other substance abuse
ICD10Proc	HZ2ZZZZ	Detoxification Services for Substance Ab
ICD10Proc	HZ30ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ31ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ32ZZZ	Indiv Counsel for Substance Abuse, Cogni
ICD10Proc	HZ33ZZZ	Individual Counseling for Substance Abus
ICD10Proc	HZ34ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ35ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ36ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ37ZZZ	Indiv Counsel for Substance Abuse, Motiv
ICD10Proc	HZ38ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ39ZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ3BZZZ	Indiv Counsel for Substance Abuse Treatm
ICD10Proc	HZ40ZZZ	Group Counseling for Substance Abuse Tre
ICD10Proc	HZ41ZZZ	Group Counseling for Substance Abuse Tre
ICD10Proc	HZ42ZZZ	Group Counsel for Substance Abuse, Cogni

Type	Code	Description
ICD10Proc	HZ43ZZZ	Group Counseling for Substance Abuse Tre
ICD10Proc	HZ44ZZZ	Group Counsel for Substance Abuse Treatm
ICD10Proc	HZ45ZZZ	Group Counseling for Substance Abuse Tre
ICD10Proc	HZ46ZZZ	Group Counsel for Substance Abuse Treatm
ICD10Proc	HZ47ZZZ	Group Counsel for Substance Abuse, Motiv
ICD10Proc	HZ48ZZZ	Group Counsel for Substance Abuse Treatm
ICD10Proc	HZ49ZZZ	Group Counsel for Substance Abuse Treatm
ICD10Proc	HZ4BZZZ	Group Counseling for Substance Abuse Tre
ICD10Proc	HZ93ZZZ	Pharmacotherapy for Substance Abuse Trea
ICD10Proc	HZ96ZZZ	Pharmacotherapy for Substance Abuse Trea
ICD9DX	2910	Alcohol withdrawal delirium
ICD9DX	2911	Alcohol-induced persisting amnesic disorder
ICD9DX	2912	Alcohol-induced persisting dementia
ICD9DX	2913	Alcohol-induced psychotic disorder with hallucinations
ICD9DX	29181	Alcohol withdrawal
ICD9DX	29182	Alcohol induced sleep disorders
ICD9DX	29189	Other alcohol-induced mental disorders
ICD9DX	2919	Unspecified alcohol-induced mental disorders
ICD9DX	2920	Drug withdrawal
ICD9DX	29211	Drug-induced psychotic disorder with delusions
ICD9DX	29212	Drug-induced psychotic disorder with hallucinations
ICD9DX	2922	Pathological drug intoxication
ICD9DX	29281	Drug-induced delirium
ICD9DX	29282	Drug-induced persisting dementia
ICD9DX	29283	Drug-induced persisting amnesic disorder
ICD9DX	29284	Drug-induced mood disorder
ICD9DX	29285	Drug induced sleep disorders
ICD9DX	29289	Other specified drug-induced mental disorders
ICD9DX	2929	Unspecified drug-induced mental disorder
ICD9DX	30300	Acute alcoholic intoxication in alcoholism, unspecified
ICD9DX	30301	Acute alcoholic intoxication in alcoholism, continuous
ICD9DX	30302	Acute alcoholic intoxication in alcoholism, episodic
ICD9DX	30303	Acute alcoholic intoxication in alcoholism, in remission
ICD9DX	30390	Other and unspecified alcohol dependence, unspecified
ICD9DX	30391	Other and unspecified alcohol dependence, continuous
ICD9DX	30392	Other and unspecified alcohol dependence, episodic
ICD9DX	30393	Other and unspecified alcohol dependence, in remission
ICD9DX	30400	Opioid type dependence, unspecified
ICD9DX	30401	Opioid type dependence, continuous
ICD9DX	30402	Opioid type dependence, episodic
ICD9DX	30403	Opioid type dependence, in remission
ICD9DX	30410	Sedative, hypnotic or anxiolytic dependence, unspecified
ICD9DX	30411	Sedative, hypnotic or anxiolytic dependence, continuous
ICD9DX	30412	Sedative, hypnotic or anxiolytic dependence, episodic
ICD9DX	30413	Sedative, hypnotic or anxiolytic dependence, in remission
ICD9DX	30420	Cocaine dependence, unspecified
ICD9DX	30421	Cocaine dependence, continuous
ICD9DX	30422	Cocaine dependence, episodic
ICD9DX	30423	Cocaine dependence, in remission

Type	Code	Description
ICD9DX	30430	Cannabis dependence, unspecified
ICD9DX	30431	Cannabis dependence, continuous
ICD9DX	30432	Cannabis dependence, episodic
ICD9DX	30433	Cannabis dependence, in remission
ICD9DX	30440	Amphetamine and other psychostimulant dependence, unspecified
ICD9DX	30441	Amphetamine and other psychostimulant dependence, continuous
ICD9DX	30442	Amphetamine and other psychostimulant dependence, episodic
ICD9DX	30443	Amphetamine and other psychostimulant dependence, in remission
ICD9DX	30450	Hallucinogen dependence, unspecified
ICD9DX	30451	Hallucinogen dependence, continuous
ICD9DX	30452	Hallucinogen dependence, episodic
ICD9DX	30453	Hallucinogen dependence, in remission
ICD9DX	30460	Other specified drug dependence, unspecified
ICD9DX	30461	Other specified drug dependence, continuous
ICD9DX	30462	Other specified drug dependence, episodic
ICD9DX	30463	Other specified drug dependence, in remission
ICD9DX	30470	Combinations of opioid type drug with any other drug dependence, unspecified
ICD9DX	30471	Combinations of opioid type drug with any other drug dependence, continuous
ICD9DX	30472	Combinations of opioid type drug with any other drug dependence, episodic
ICD9DX	30473	Combinations of opioid type drug with any other drug dependence, in remission
ICD9DX	30480	Combinations of drug dependence excluding opioid type drug, unspecified
ICD9DX	30481	Combinations of drug dependence excluding opioid type drug, continuous
ICD9DX	30482	Combinations of drug dependence excluding opioid type drug, episodic
ICD9DX	30483	Combinations of drug dependence excluding opioid type drug, in remission
ICD9DX	30490	Unspecified drug dependence, unspecified
ICD9DX	30491	Unspecified drug dependence, continuous
ICD9DX	30492	Unspecified drug dependence, episodic
ICD9DX	30493	Unspecified drug dependence, in remission
ICD9DX	30500	Alcohol abuse, unspecified
ICD9DX	30501	Alcohol abuse, continuous
ICD9DX	30502	Alcohol abuse, episodic
ICD9DX	30503	Alcohol abuse, in remission
ICD9DX	30520	Cannabis abuse, unspecified
ICD9DX	30521	Cannabis abuse, continuous
ICD9DX	30522	Cannabis abuse, episodic
ICD9DX	30523	Cannabis abuse, in remission
ICD9DX	30530	Hallucinogen abuse, unspecified

Type	Code	Description
ICD9DX	30531	Hallucinogen abuse, continuous
ICD9DX	30532	Hallucinogen abuse, episodic
ICD9DX	30533	Hallucinogen abuse, in remission
ICD9DX	30540	Sedative, hypnotic or anxiolytic abuse, unspecified
ICD9DX	30541	Sedative, hypnotic or anxiolytic abuse, continuous
ICD9DX	30542	Sedative, hypnotic or anxiolytic abuse, episodic
ICD9DX	30543	Sedative, hypnotic or anxiolytic abuse, in remission
ICD9DX	30550	Opioid abuse, unspecified
ICD9DX	30551	Opioid abuse, continuous
ICD9DX	30552	Opioid abuse, episodic
ICD9DX	30553	Opioid abuse, in remission
ICD9DX	30560	Cocaine abuse, unspecified
ICD9DX	30561	Cocaine abuse, continuous
ICD9DX	30562	Cocaine abuse, episodic
ICD9DX	30563	Cocaine abuse, in remission
ICD9DX	30570	Amphetamine or related acting sympathomimetic abuse, unspecified
ICD9DX	30571	Amphetamine or related acting sympathomimetic abuse, continuous
ICD9DX	30572	Amphetamine or related acting sympathomimetic abuse, episodic
ICD9DX	30573	Amphetamine or related acting sympathomimetic abuse, in remission
ICD9DX	30580	Antidepressant type abuse, unspecified
ICD9DX	30581	Antidepressant type abuse, continuous
ICD9DX	30582	Antidepressant type abuse, episodic
ICD9DX	30583	Antidepressant type abuse, in remission
ICD9DX	30590	Other, mixed, or unspecified drug abuse, unspecified
ICD9DX	30591	Other, mixed, or unspecified drug abuse, continuous
ICD9DX	30592	Other, mixed, or unspecified drug abuse, episodic
ICD9DX	30593	Other, mixed, or unspecified drug abuse, in remission
ICD9DX	4255	Alcoholic cardiomyopathy
ICD9DX	53530	Alcoholic gastritis, without mention of hemorrhage
ICD9DX	53531	Alcoholic gastritis, with hemorrhage
ICD9DX	5710	Alcoholic fatty liver
ICD9DX	5711	Acute alcoholic hepatitis
ICD9DX	5712	Alcoholic cirrhosis of liver
ICD9DX	5713	Alcoholic liver damage, unspecified
ICD9DX	64830	Drug dependence of mother, unspecified as to episode of care or not applicable
ICD9DX	64831	Drug dependence of mother, delivered, with or without mention of antepartum condition
ICD9DX	64832	Drug dependence of mother, delivered, with mention of postpartum complication
ICD9DX	64833	Drug dependence of mother, antepartum condition or complication
ICD9DX	64834	Drug dependence of mother, postpartum condition or complication
ICD9DX	76071	Alcohol affecting fetus or newborn via placenta or breast milk

Type	Code	Description
ICD9DX	76072	Narcotics affecting fetus or newborn via placenta or breast milk
ICD9DX	76073	Hallucinogenic agents affecting fetus or newborn via placenta or breast milk
ICD9DX	76075	Cocaine affecting fetus or newborn via placenta or breast milk
ICD9DX	7795	Drug withdrawal syndrome in newborn
ICD9DX	9800	Toxic effect of ethyl alcohol
ICD9DX	9801	Toxic effect of methyl alcohol
ICD9DX	9809	Toxic effect of unspecified alcohol
ICD9DX	E8600	Accidental poisoning by alcoholic beverages
ICD9DX	V113	Personal history of alcoholism
ICD9DX	V6141	Alcoholism in family
ICD9DX	V6142	Substance abuse in family
ICD9DX	V6542	Counseling on substance use and abuse
ICD9Proc	9445	Drug addiction counseling
ICD9Proc	9446	Alcoholism counseling
ICD9Proc	9453	Referral for alcoholism rehabilitation
ICD9Proc	9454	Referral for drug addiction rehabilitation
ICD9Proc	9461	Alcohol rehabilitation
ICD9Proc	9462	Alcohol detoxification
ICD9Proc	9463	Alcohol rehabilitation and detoxification
ICD9Proc	9464	Drug rehabilitation
ICD9Proc	9465	Drug detoxification
ICD9Proc	9466	Drug rehabilitation and detoxification
ICD9Proc	9467	Combined alcohol and drug rehabilitation
ICD9Proc	9468	Combined alcohol and drug detoxification
ICD9Proc	9469	Combined alcohol and drug rehabilitation and detoxification
Rev_Code	0116	Detoxification Room and Board - Private
Rev_Code	0126	Detoxification Room and Board - Semi-Private 2Bed
Rev_Code	0136	Detoxification Room and Board - Semi-Private 3&4Bed
Rev_Code	0146	Detoxification Room and Board - Private Deluxe
Rev_Code	0156	Detoxification Room and Board - Ward 5 or more Beds
Rev_Code	0906	Psychiatric/Psychological Trt: Intensive out serv - chem dep
Rev_Code	0944	Other Therapeutic Services - Drug Rehabilitation
Rev_Code	0945	Other Therapeutic Services - Alcohol Rehabilitation
Rev_Code	1002	Behavior Health R&B - Residential Chemical Dependency
POS_CD	55	A facility which provides treatment for substance (alcohol and drug) abuse to live-in residents who do not require acute medical care. Services include individual and group therapy and counseling, family counseling, laboratory tests, medications and supplies, psychological testing, and room and board.
POS_CD	57	A location which provides treatment for substance (alcohol and drug) abuse on an ambulatory basis. Services include individual and group therapy and counseling, family counseling, laboratory tests, medications and supplies, and psychological testing
PROC_MOD_1_CD	HF	Substance Abuse Services, as determined by the provider.

Type	Code	Description
PROC_MOD_2_CD	HF	Substance Abuse Services, as determined by the provider.
PROC_MOD_3_CD	HF	Substance Abuse Services, as determined by the provider.
PROC_MOD_4_CD	HF	Substance Abuse Services, as determined by the provider.
BILL_PROV_TYP_CD	64	Substance Use Disorder - Clinics
REND_PROV_TYP_CD	64	Substance Use Disorder - Clinics
BILL_PROV_SPCLTY_CD	113	BI Substance Abuse Counseling
REND_PROV_SPCLTY_CD	113	BI Substance Abuse Counseling
BILL_PROV_SPCLTY_CD	182	OP Substance Abuse Benefit
REND_PROV_SPCLTY_CD	182	OP Substance Abuse Benefit
BILL_PROV_SPCLTY_CD	399	Substance Use Disorder - Individuals
REND_PROV_SPCLTY_CD	399	Substance Use Disorder - Individuals
BILL_PROV_SPCLTY_CD	477	Substance Use Disorder - Clinics
REND_PROV_SPCLTY_CD	477	Substance Use Disorder - Clinics
BILL_PROV_TYP_CD	63	Substance Use Disorder - Individuals
REND_PROV_TYP_CD	63	Substance Use Disorder - Individuals
BILL_PROV_SPCLTY_CD	678	Substance Abuse Counseling BI
REND_PROV_SPCLTY_CD	678	Substance Abuse Counseling BI
BILL_PROV_SPCLTY_CD	711	Substance Abuse Counseling CCT-DD/SLS
REND_PROV_SPCLTY_CD	711	Substance Abuse Counseling CCT-DD/SLS