Using CC/MCC Capture Rates as a Key Performance Indicator

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The goal of this Practice Brief is to provide an explanation of the complication/comorbid condition and major complication/comorbid condition (CC/MCC) capture rate, review the calculation, and introduce the uses of this key performance indicator (KPI) by different functions of the mid-revenue cycle. This benchmark can be utilized by health information management (HIM), clinical documentation integrity (CDI), compliance, and quality professionals to determine performance status. The benchmark can be used to determine risk as well as initial performance improvement opportunities.

Terminology and Acronyms

A Diagnosis-Related Group (DRG) is the classification that results from a computer algorithm (grouper) used by the payer that combines ICD-10-CM/PCS codes, present on admission indicators, sex, age, and discharge status. Each DRG has a relative weight which indicates the complexity of the patient's admission. Each DRG is identified as a surgical or medical DRG.

The CC/MCC capture rate can be calculated using Medicare Severity Diagnosis-Related Groups (MS-DRGs) or All Patient Refined Diagnosis-Related Groups (APR-DRGs). MS-DRGs are utilized by Medicare Fee-for-Service and some commercial payers. APR-DRGs is a reimbursement methodology that is proprietary to 3M and is utilized by Medicaid programs, children's hospitals, and some commercial payers. Users can determine CC/MCC capture rates under APR-DRGs by severity of illness (SOI) or risk of mortality (ROM) levels.

A secondary diagnosis can be identified as a CC or a MCC. A CC increases the length of stay by one patient day 75 percent of the time, according to the Centers for Medicare and Medicaid Services (CMS). CCs tend to be chronic conditions. MCCs are conditions that increase the severity of the patient and are frequently acute conditions. The CCs and MCCs impact the DRG assignment as well as the reimbursement. CMS reviews the claims data annually to statistically determine CC/MCC changes. See the sidebar below for examples.

CC vs. MCC Examples

Complication/Comorbid Condition	Major Complication/ Comorbid Condition
Chronic Systolic Congestive Heart Failure	Acute Systolic Congestive Heart Failure
Chronic Respiratory Failure	Acute Respiratory Failure
Transient Ischemic Attack	Stroke

ICD-10-PCS codes are categorized as either a DRG operating room procedure or a non-DRG operating room procedure. The DRG operating room procedure codes affect the DRG assignment by classifying the case as surgical.

The Major Diagnostic Category (MDC) is a grouping of DRGs with the same organ system or condition. The MDC may be referred to as a service or product line for an organization.
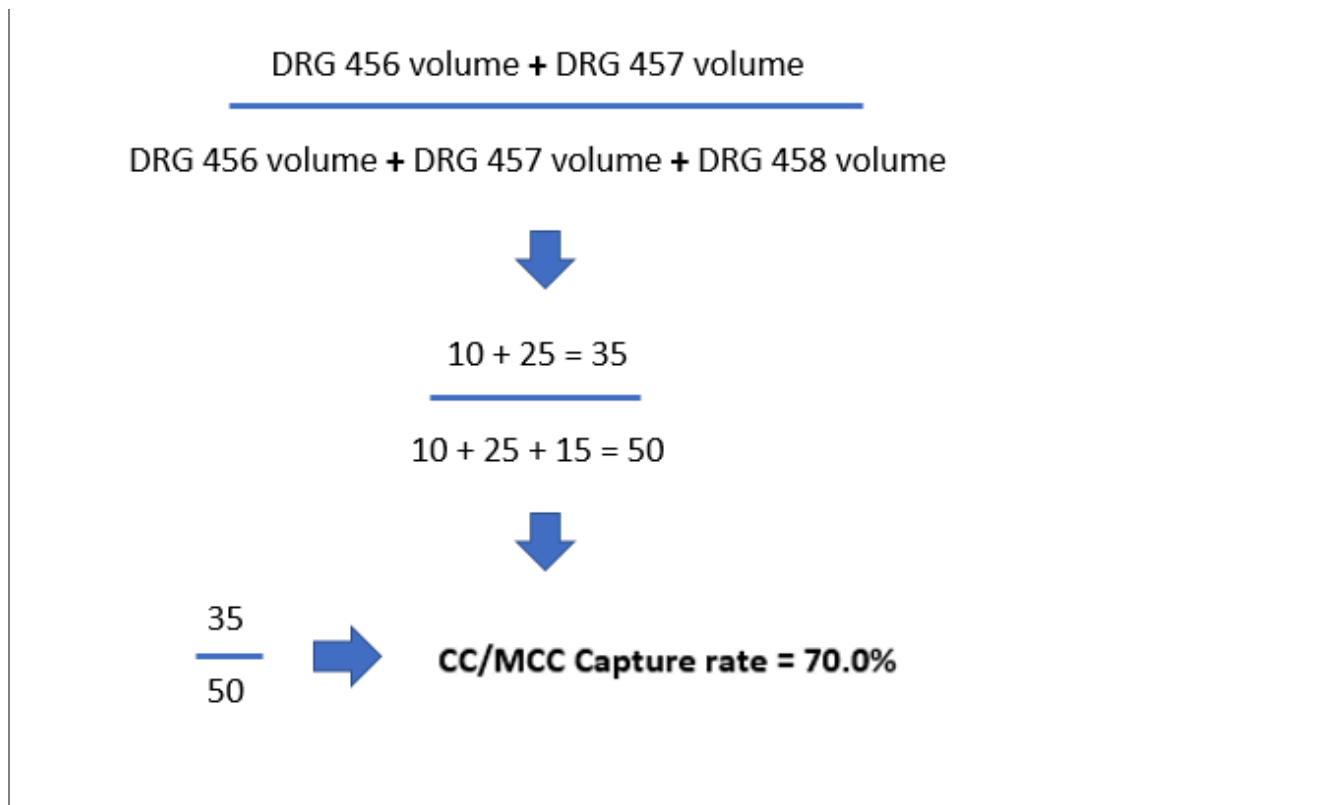
The CC/MCC capture rate is a calculation that identifies the number of DRGs with CC or MCC compared to the total number of DRGs for the time period. The CC/MCC capture rate can be calculated for all DRGs, by MDC, by medical vs. surgical, and more for a specific time period. It is important to differentiate the CC/MCC capture rate from the CC/MCC depth rate. The CC/MCC depth rate is the calculation of the total number of diagnoses that are CCs and MCCs compared to the total number of reported diagnoses. The CC/MCC depth rate indicates the average number of CC/MCCs that are reported per case.

Calculating the CC/MCC Capture Rate

The equation for the CC/MCC capture rate is the total number of cases that have 'with CC,' 'with MCC,' or 'with CC/MCC' in the DRG description divided by the total number of cases, and the result is expressed as a percentage. The overall national Medicare CC/MCC rate has been reported as 63.2 percent for the timeframe of 2014–2017. See the sidebar below for an example of a CC/MCC capture rate calculation.

Example of a CC/MCC Capture Rate Calculation

DRG	DRG Description	Volume
456	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR EXT FUS W MCC	10
457	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR EXT FUS W CC	25
458	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR EXT FUS W/O CC/MCC	15
	Grand Total	50

DRG 456 volume **+** DRG 457 volume

DRG 456 volume **+** DRG 457 volume **+** DRG 458 volume

$$10 + 25 = 35$$

$$10 + 25 + 15 = 50$$

$$\frac{35}{50}$$ ➡ **CC/MCC Capture rate = 70.0%**

To calculate the CC/MCC capture rate in the example in the sidebar above, the user would add the volume from MS-DRGs 456 and 457. The result is 35 patients. All patients in MS-DRGs 456, 457, and 458 would be totaled, which results in 50 patients. The final step is to divide the cases with CC and MCC by the total number of patients, which results in 70 percent. The sidebar illustrates the calculation process.

An Excel spreadsheet tool that can be used to calculate the CC/MCC capture rate for CMS DRGs for fiscal year 2019 is available as Appendix A in the online version of this Practice Brief, available in the AHIMA HIM Body of Knowledge at http://bok.ahima.org.

Relevance for HIM Professionals

Monitoring CC/MCC capture rates is a key element in driving a facility's coding operation toward operational goals and compliance. No two coding departments are alike, and in some department models coders are divided by specialty or payer—which can lead to potential gaps or variations in coding outcomes. Implementing regular audits is the ideal way to provide oversight on the facility's coding health and to identify educational and process improvement opportunities.

Recommended monitoring activities include:

- Review CC/MCC code selections for both medical and surgical MS-DRGs on a pre-bill basis. The CC/MCC codes are often targets for denials by payers and government programs alike. Ensuring accuracy ahead of time can minimize the burden for the department to process high volumes of denials. Financial reporting, case mix index reporting, and other clinical areas would all benefit from more accurate coding prior to billing.
- Investigate cases where there is a single reporting of a CC or MCC in a given time period as this can indicate a coding error or a provider documentation opportunity.
- Investigate a sudden spike or unusually high volume of MS-DRGs with CC/MCCs as this can be an indicator for an increased denial risk and can impact mortality index reporting. This trend could also indicate inappropriate coding or clinical documentation.
- Investigate outliers in the average length of stay (ALOS) where inconsistencies can identify coding and documentation opportunities.
- Review the Program for Evaluating Payment Patterns Electronic Reports (PEPPER) to identify variations amongst similar facilities and populations. The target goal is to rank between the 20 percent and the 80 percent mark, as facilities

that fall in the above 80 percent category could be at risk for upcoding and facilities that fall in the below 20 percent category could be at risk for downcoding.

Relevance for CDI Professionals

The CC/MCC capture rate can be used as a measure for focused DRG inclusion by clinical documentation integrity/improvement teams. As a low percentage in the Medicare patient population, it may prove to be an area of opportunity for refining documentation of and capturing co-morbid conditions and complications. For example, suppose the national CC/MCC capture rate based on recent CMS Inpatient Utilization and Payment Public Use File data for Medicare patients for heart failure and shock DRGs 291-293 is 90 percent, and your hospital's CC/MCC capture rate for the same DRG triplet is 45 percent (half the rate of the national average). Although only an example, this finding could mean that CCs or MCCs for heart failure patients are not being documented sufficiently to meet the coding requirements for final coding assignment. Conversely, a CC/MCC capture rate much higher than the national, state, or organization's own historical data average without any known reason(s) for the inflated percentage could be suggestive of a compliance concern in clinical documentation. Whether the measure is above or below the comparative rate, using the CC/MCC capture rate as a tool for CDI program activity is an effective method for suggesting further analysis and review of DRG pairs and triplets.

Relevance for Quality Professionals

Clinical areas monitor diagnosis capture to drive programs focused on hospital-acquired conditions (HACs) and SOI/ROM. Business units monitor coded data to evaluate financial models of reimbursement and statistics to drive staffing and funding. A few key considerations for CC/MCC impact in clinical and quality areas include:

1. Value-based purchasing (VBP), where the sequencing of a diagnosis code focused on the CC/MCC to drive the MS-DRG capture for reimbursement could simultaneously place the case in cohorts designed for VBP models. This data could have other negative impacts to the facility where a reduction in payment occurs for certain outlined quality measures.
2. Risk Adjustment models, where certain diagnoses often targeted for CC/MCC capture also map to certain Hierarchical Condition Categories (HCCs) that can trigger payer validation audits. For example, the diagnosis of severe malnutrition is both a MCC and a HCC.
3. The Office of Inspector General (OIG) Workplan targets can touch on a range of areas including a specific diagnosis. In 2016, the OIG conducted an audit on kwashiorkor, a form of severe malnutrition that is rarely seen in the United States. This diagnosis is both a MCC and a HCC, and it has a high error rate.

Mitigating risk while optimizing reporting is a balance that facilities should strive to achieve. Engaging stakeholders in the compliance, coding, CDI, and clinical department functions to participate in regular reviews of standard operating procedures (SOPs) will help bring awareness and drive results. Results of compliance monitoring programs should be shared quarterly with the facility's stakeholders and reviewed at least annually to ensure necessary updates and risk areas are incorporated into SOPs.

CC/MCC Capture Rate is a Far-Reaching KPI

The CC/MCC capture rate is a KPI for the various functions across the revenue cycle continuum of the facility, including areas relevant to the work of HIM, CDI, quality, and compliance professionals. HIM professionals use this indicator to determine coding quality or potential errors. CDI professionals utilize this KPI as a comparison to the national average to identify a potential lack of documentation of CC/MCCs, missing queries, or physician education needs. The CC/MCC capture rate may be used to determine review strategy for CDI. This KPI determines where a difference can be made for the case mix index for the facility. The facility would want to proactively identify quality issues as well as address coding errors or insufficient/missing clinical documentation by utilizing this KPI. Compliance can use the KPI to determine risk areas and indications of further analysis. A compliance investigation may involve all three areas to determine the root cause of a high or low CC/MCC capture rate and to see if the coding and documentation are accurately reflected in the CC/MCC capture rate. Like Goldilocks, the CC/MCC capture rate should be just right.

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Appendix Available Online

A downloadable Excel spreadsheet tool that can be used to calculate the CC/MCC capture rate for CMS DRGs for fiscal year 2019 is available with Appendix A in the online version of this Practice Brief.

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Appendix A: CC/MCC Capture Rate Calculation Spreadsheet Tool

An Excel spreadsheet tool that can be used to calculate an organization's complication or comorbidity/major complication or comorbidity (CC/MCC) capture rate for Centers for Medicare and Medicaid Services Diagnosis Related Groups (DRGs) for fiscal year 2019 is available in this appendix. The tool is presented as a companion to the "Using CC/MCC Capture Rate as a Key Performance Indicator" Practice Brief, originally published in the June 2019 *Journal of AHIMA*.

A facility's quarterly Medicare Severity DRG (MS-DRG) volumes can be manually or electronically entered in the Data Source tab. The spreadsheet will calculate the CC/MCC capture rate for the quarter as well as year-to-date. The spreadsheet also provides information regarding medical, surgical, and Major Diagnostic Category (MDC) CC/MCC capture rates. This spreadsheet can also be used to determine potential issues and provide the ability to drill down through the data. The user can review their facility's overall CC/MCC capture rate, then review the rates by MDC. The next step would be to review the MDCs that appear to be aberrant to determine specific areas for improvement.

To access the spreadsheet, click here.

To access a copy of the spreadsheet with sample data, click here.

The below screengrab of the spreadsheet is an example that lists the MS-DRGs which include with and without CCs/MCC and are contained in MDC 3, Diseases of the Ear, Nose, Mouth, and Throat. The quarterly data is displayed with the number of patients in MS-DRGs with CCs and MCCs totaled as well as the total number of patients for the quarter. The CC/MCC capture rate is then displayed as a percentage for Total Patients.

MS-DRG	FY 2019 FINAL Post-Acute DRG	FY 2019 FINAL Special Pay DRG	MDC	TYPE	MS-DRG Title	Weights	Geometric mean LOS	Arithmetic mean LOS	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
129	No	No	03	SURG	MAJOR HEAD & NECK PROCEDURES W CC/MCC OR MAJOR	2.4310	3.7	3.7	1	1	1	1	4
130	No	No	03	SURG	MAJOR HEAD & NECK PROCEDURES W/O CC/MCC	1.4912	2.3	2.3	2	2	2	2	8
131	No	No	03	SURG	CRANIAL/FACIAL PROCEDURES W CC/MCC	2.6284	4.2	4.2	3	3	3	3	12
132	No	No	03	SURG	CRANIAL/FACIAL PROCEDURES W/O CC/MCC	1.5286	2.0	2.0	45	45	45	45	180
133	No	No	03	SURG	OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W	2.0986	4.0	4.0	3	3	3	3	12
134	No	No	03	SURG	OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W/O	1.1987	2.0	2.0	4	4	4	4	16
135	No	No	03	SURG	SINUS & MASTOID PROCEDURES W CC/MCC	2.2982	4.4	4.4	5	5	12	5	27
136	No	No	03	SURG	SINUS & MASTOID PROCEDURES W/O CC/MCC	1.2125	1.8	1.8	6	6	6	6	24
137	No	No	03	SURG	MOUTH PROCEDURES W CC/MCC	1.3771	3.6	3.6	7	7	7	7	28
138	No	No	03	SURG	MOUTH PROCEDURES W/O CC/MCC	0.8452	2.0	2.0	8	8	8	8	32
146	No	No	03	MED	EAR, NOSE, MOUTH & THROAT MALIGNANCY W MCC	1.9231	5.3	5.3	8	8	8	8	32
147	No	No	03	MED	EAR, NOSE, MOUTH & THROAT MALIGNANCY W CC	1.2505	3.7	3.7	7	7	7	7	28
148	No	No	03	MED	EAR, NOSE, MOUTH & THROAT MALIGNANCY W/O CC/MCC	0.7238	2.1	2.1	6	6	6	6	24
150	No	No	03	MED	EPISTAXIS W MCC	1.3275	3.5	3.5	4	4	4	4	16
151	No	No	03	MED	EPISTAXIS W/O MCC	0.7038	2.2	2.2	3	3	3	3	12
152	No	No	03	MED	OTITIS MEDIA & URI W MCC	1.0421	3.2	3.2	2	2	2	2	8
153	No	No	03	MED	OTITIS MEDIA & URI W/O MCC	0.7118	2.4	2.4	1	1	1	1	4
154	No	No	03	MED	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES W MCC	1.4465	4.0	4.0	2	2	2	2	8
155	No	No	03	MED	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES W CC	0.8833	2.9	2.9	3	3	3	3	12
156	No	No	03	MED	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES W/O	0.6599	2.2	2.2	4	4	4	4	16
157	No	No	03	MED	DENTAL & ORAL DISEASES W MCC	1.6730	4.4	4.4	5	5	5	5	20
158	No	No	03	MED	DENTAL & ORAL DISEASES W CC	0.8903	2.8	2.8	6	6	6	6	24
159	No	No	03	MED	DENTAL & ORAL DISEASES W/O CC/MCC	0.6784	2.1	2.1	4	55	4	4	67
					MDC #3 - Total CC/MCCs				56	56	63	56	231
					Total Patients				139	190	146	139	614
					CC/MCC Capture Rate				40.29%	29.47%	43.15%	40.29%	37.62%

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