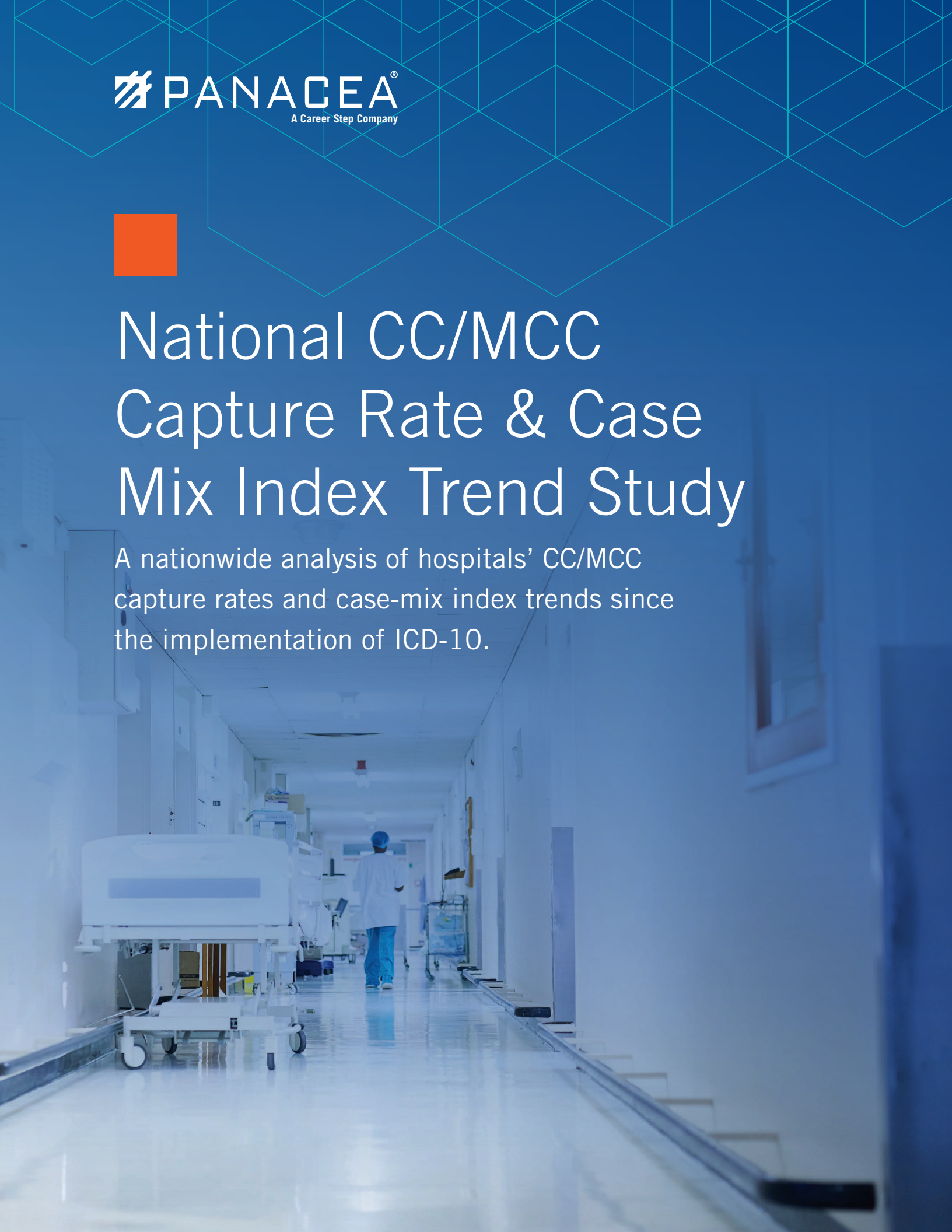




# National CC/MCC Capture Rate & Case Mix Index Trend Study

A nationwide analysis of hospitals' CC/MCC capture rates and case-mix index trends since the implementation of ICD-10.





## Summary

Since the October 1, 2015 commencement of ICD-10, both case-mix index trends and CC/MCC capture rates nationwide have improved by 2.8% and 0.8% respectively. Years of coding and documentation training to address the tenfold increase in available codes and the need for improved specificity and documentation under ICD-10 appears to be paying off overall.

However, a deep dive into the analytics and trends reveals new areas where coding and documentation training and education may need to shift focus. This study identifies national and geographic trends during the first two years under ICD-10 and aims to help health systems discover their own performance trends and opportunities for further improvement. Additionally, from this study health systems can compare their performance to the national benchmarks and determine if, despite overall favorable trends, further opportunity exists to improve training, documentation, and focused audit initiatives.

## Introduction

With an aging population, the shift of inpatient procedures to outpatient settings, and the increased use of advanced technology and procedures by hospitals, one would expect case-mix indices to increase year over year. However, in 2015 the fear was that decreases in case-mix and payments would materialize immediately following the implementation of the ICD-10 coding system due to the dramatic shift in coding and documentation requirements and need for more specificity under ICD-10 to receive proper reimbursement.

These fears do not appear to have played out. According to Moody's Investors Service, not-for-profit and public hospitals nationwide experienced hospital operating revenue increases of 6.6% with only slight margin decreases from 3.5% to 2.7% from 2015 to 2016, with the margin decreases being due to spending outpacing revenues. These trends perhaps provide the best evidence that the industry successfully mitigated the looming financial risk associated with ICD-10. It also suggests that the HIM industry was adequately prepared and did a fine job anticipating those areas requiring focused coding and documentation training and education.

With two years of Medicare claims data now available under the ICD-10 coding guidelines, we no longer need to anticipate or predict which areas need focus. The following study, prepared by Panacea's financial consultants and clinical coding team, reveals where trends are favorable and where more attention is needed. The study also reveals the extent to which different results exist by geography and teaching status.



## Methodology

This study is based on Medicare claims data as reported by the Centers for Medicare and Medicaid Services (CMS) and analyzes data from 4,153 U.S. hospitals and 195 DRG groups—both doublets and triplets. Facilities that did not report financial data to CMS were excluded. Panacea did not validate the data provided, and the analysis was based on submitted claims data and does not account for any denials or other payment adjustments in either the time periods examined or other reporting periods.

Data was analyzed by Panacea's financial consultants and clinical coding team. The first six months with the ICD-10 code set (October 1, 2015 through March 31, 2016) was compared with a more recent six month period (April 1, 2017 through September 30, 2017) to determine how the industry performed over the first two years of using the ICD-10 system. To ensure valid comparisons, DRG groups were only compared if the provider had significant volume in the doublet or triplet over both periods of time.

This study employed standard CC/MCC capture rate calculations for all DRG doublets and triplets. Specifically, the CC/MCC capture rates of these DRG groups were calculated by dividing the total number of CC and MCC cases combined by the total cases for the DRG doublets and triplets.

From the beginning, the study focused on finding information useful to professionals in HIM and healthcare finance. The goal was to see how the industry was performing overall since the implementation of ICD-10 and subsequently how individual health systems compared to that national benchmark and where they might have continued opportunity in coding, documentation, and financial improvement.

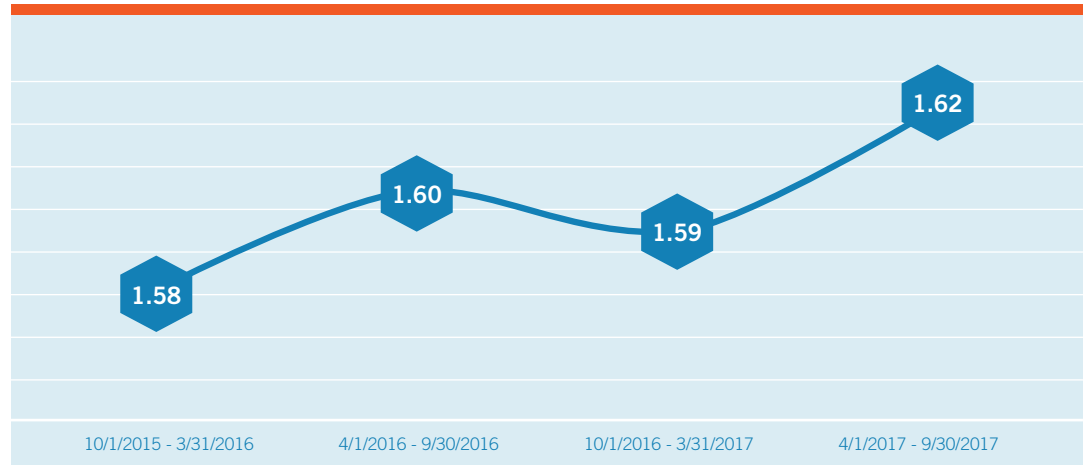
# Nationwide Results

## All DRG Groups

Across all DRG groups case mix indices nationwide have gone from 1.58 to 1.62—a 2.5% increase—since the implementation of ICD-10. These results can be seen in *Figure 1*, and they equate to a nationwide payments increase of approximately \$349 million before consideration of denials in both of the six-month periods considered in this analysis.

**Figure 1**

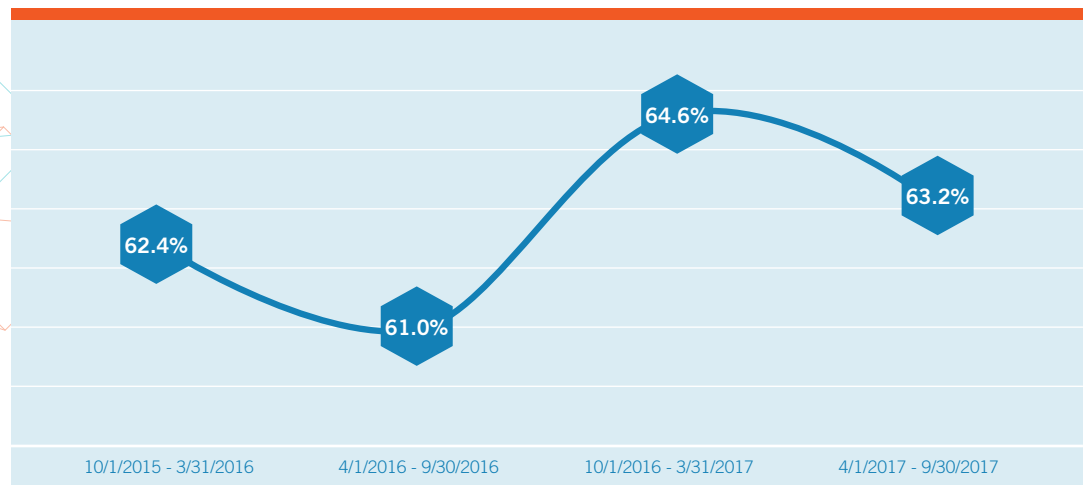
Nationwide CMI Change - Overall



Not surprisingly, our analysis revealed that during the same period the weighted average CC/MCC capture rate for all DRG groups also increased nationwide, from 62.4% to 63.2% for a 1.3% overall increase.

**Figure 2**

Nationwide CC/MCC Capture Rate Change - Overall



From these trends, it can be deduced that HIM specialists nationwide and the healthcare industry in general may have been adequately prepared for the transition to the ICD-10 coding and documentation environment.

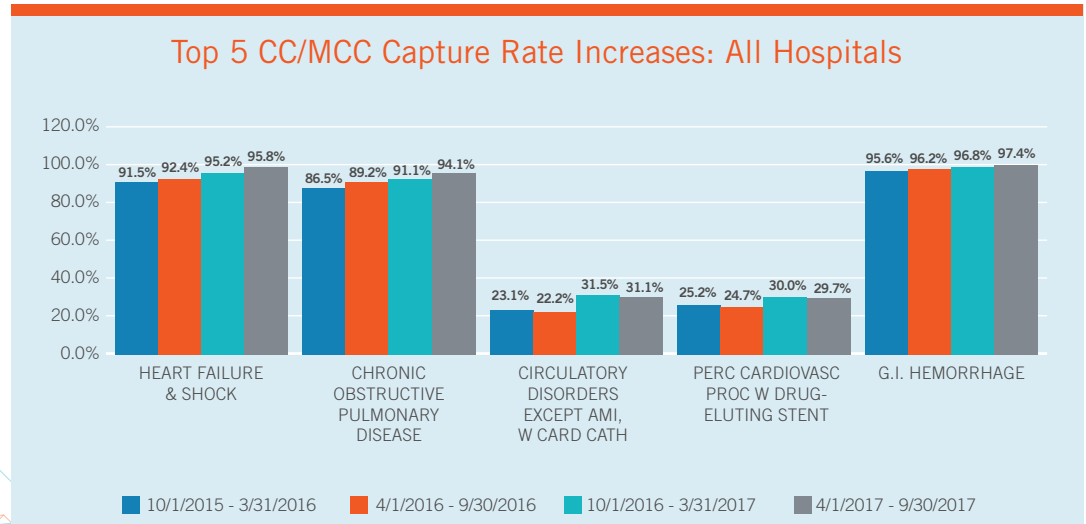
## Favorable and Unfavorable Dollar Impact in Specific DRG Groups

Despite the overall favorable trends, more detailed analysis reveals opportunities for further improvement and specific areas where training and education may be helpful. In *Figure 3* we can see the top five DRG groups where payment levels increased since October 1, 2015. In contrast, *Figure 4* shows the top five DRG groups nationwide where payment levels decreased during the same time period, perhaps representing areas for potential coding and documentation improvement.

**Figure 3**  
Top 5 Favorable Payment Level Trend Groups

1. HEART FAILURE & SHOCK .....	\$ 192,450,588
2. CHRONIC OBSTRUCTIVE PULMONARY DISEASE .....	\$ 47,341,683
3. CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH.....	\$ 20,352,283
4. PERC CARDIOVASC PROC W DRUG-ELUTING STENT.....	\$ 17,716,572
5. G.I. HEMORRHAGE .....	\$ 12,413,736

Top 5 Favorable Capture Rate Increases by Month



The implementation of ICD-10 resulted in many CC/MCC shifts. Some of the services above, such as cardiac services and chronic obstructive pulmonary disease, noted positive CC/MCC shifts with the move to the new code set.

Additionally, on October 1, 2016, a new ICD-10-CM Coding Convention was added to the guidelines directing, “The provider’s statement that the patient has a particular condition is sufficient,” and “Code assignment is not based on clinical criteria used by the provider to establish the diagnosis.” With the addition of this guideline for FY 2017 to support code assignments and defend denials, many facilities may have regained the confidence to code certain CC/MCC conditions a bit less conservatively, resulting in these increases.

The increase in CC/MCC capture rate for the heart failure and shock DRG group can be attributed in part to the implementation of ICD-10 and the addition of code category I13 (hypertensive heart and chronic kidney disease) coupled with the directive in the tabular that I13.x would be sequenced first before the heart failure code. When present in the patient, hypertensive heart failure and chronic kidney disease with a specified type of heart failure (diastolic or systolic) will always have a CC or MCC, depending on whether the heart failure is decompensated or not. The addition of the “with” guideline, instructing that heart failure and hypertension are always assumed to have a causal relationship unless stated otherwise by the provider, sealed the deal. There has been extensive education and training on these changes, and coders are embracing them well, as evidenced by the increases seen here.

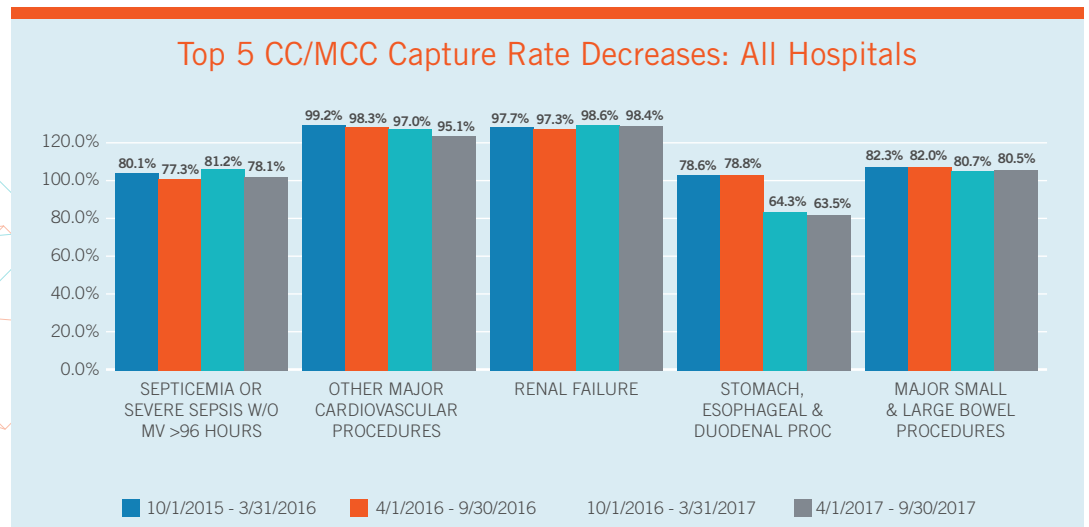
Figure 4 illustrates the top five MS-DRG groups realizing both case-mix and CC/MCC capture rate declines during the two-year study period. One of the key factors in this downshift of CC/MCC capture was the known MS-DRGs that suffered a negative CC/MCC shift with the implementation of ICD-10. Several of these MS-DRGs are in the table above, including sepsis and major small and large bowel procedures.

**Figure 4**

Top 5 Unfavorable Payment Level Trend Groups

Top 5 Unfavorable Capture Rate Increases by Month

1. SEPTICEMIA OR SEVERE SEPSIS W/O MV >96 HOURS..... (\$32,460,984)
2. OTHER MAJOR CARDIOVASCULAR PROCEDURES ..... (\$13,160,649)
3. RENAL FAILURE ..... (\$12,995,926)
4. STOMACH, ESOPHAGEAL & DUODENAL PROC ..... (\$ 9,918,980)
5. MAJOR SMALL & LARGE BOWEL PROCEDURES ..... (\$ 8,716,970)



Between October 1, 2015 and October 1, 2016, many facilities experienced increased denials on certain CC/MCC conditions citing that the documentation did not contain enough clinical indicators for the conditions, blurring the lines between DRG validation and clinical validation by auditors. In reaction to this, some facilities pulled back on CC/MCC coding, becoming more conservative—maybe too conservative—on CC/MCC code assignment. Over time, the result

“Many facilities experienced increased denials on certain CC/MCC conditions citing that the documentation did not contain enough clinical indicators for the conditions”

of this would absolutely influence DRG assignment, CC/MCC capture rates, and the case mix index. Many of these CC/MCC conditions are not new problem areas. Many of the same documentation challenges exist today with some of these conditions, such as congestive heart failure type and acuity, acute kidney failure/injury, chronic obstructive pulmonary disease, acute blood loss anemia, sepsis/severe sepsis/septic shock, acute respiratory failure, and chronic kidney disease, to name a few.

Additionally, some facilities noted a decline in sepsis MS-DRG assignment due in part to embracing the sequential organ failure assessment (SOFA) score method in diagnosing sepsis, though this was not a mandated change. Some facilities have adopted SOFA to better solidify clinical support for sepsis in their documentation for more accurate acuity of patient and code assignment. These facilities may be realizing a revenue drop in their sepsis DRGs but an improvement in sepsis documentation as a result. Hospitals having a material revenue impact for this reason may want to reconsider use of the SOFA method as it is not mandated and its impact may not be mathematically reflected in the cost weights used by CMS for payment purposes.

## Geographic Results

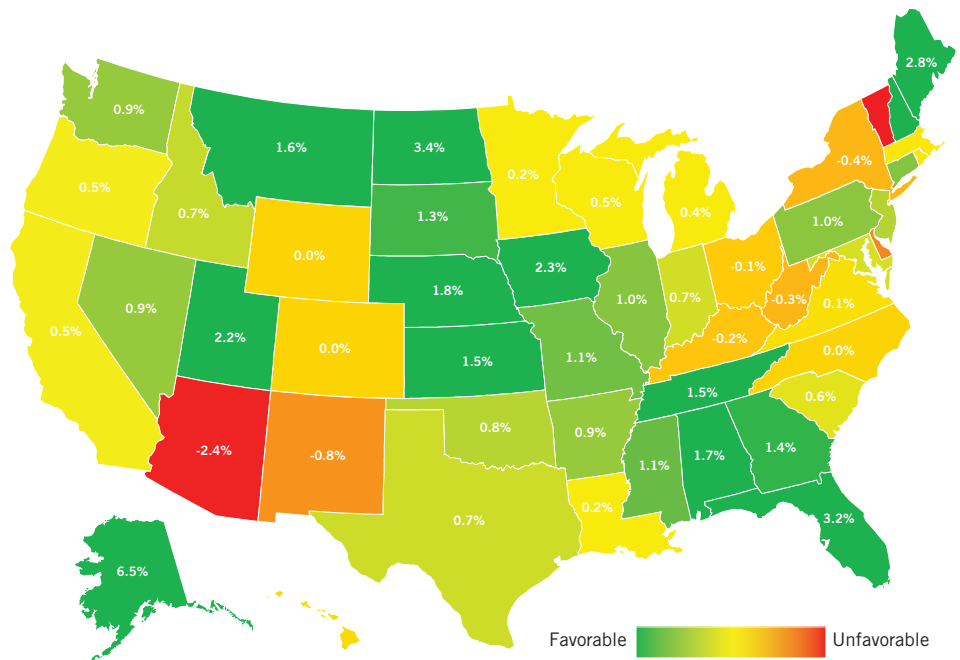
As seen in *Figure 5*, trends by state tell a much different story. For example, in Florida—a state with a higher mix of for-profit providers—a significant upward trend of a 3.2% increase in CC/MCC capture rates occurred. This could suggest that for-profit providers have been more focused on coding and documentation education due to the higher importance of their operating margin to their shareholders, or it may simply be a real demographic and case-mix shift or a hybrid thereof. Alternatively, it may represent a shift in less expensive inpatient cases to an outpatient setting at a greater rate in Florida than elsewhere.

Whatever the reason, the chart also shows that certain states such as Vermont (-4.3%), Arizona (-2.8%), and Delaware (-0.8%) are experiencing significant declines in CC/MCC capture rates. In contrast, Ohio and West Virginia have realized no change in the CC/MCC capture rate as compared to a national average change. Significant variations from the norm as seen in these states may suggest that documentation and coding training and education gaps in certain areas may contribute to the issue. Hospitals in the states that are holding steady or experiencing declines may benefit from reviewing their hospital-specific analytics.

States with the highest CC/MCC capture rate increases include Alaska (6.5%), North Dakota (3.4%), Florida (3.2%), Maine (2.8%), and Iowa (2.3%). Demographics and true case-mix differences certainly contribute to these results.

**Figure 5**

CC/MCC  
Absolute % Change  
By State vs. National  
Average (=0.8%):  
All Hospitals



Top Favorable and  
Unfavorable CC/MCC  
Capture Rate Trends  
by State

**Favorable CC/MCC  
Capture Rate Trend by State**

Alaska.....	6.5%
North Dakota.....	3.4%
Florida.....	3.2%
Maine.....	2.8%
Iowa.....	2.3%

**Unfavorable CC/MCC  
Capture Rate Trend by State**

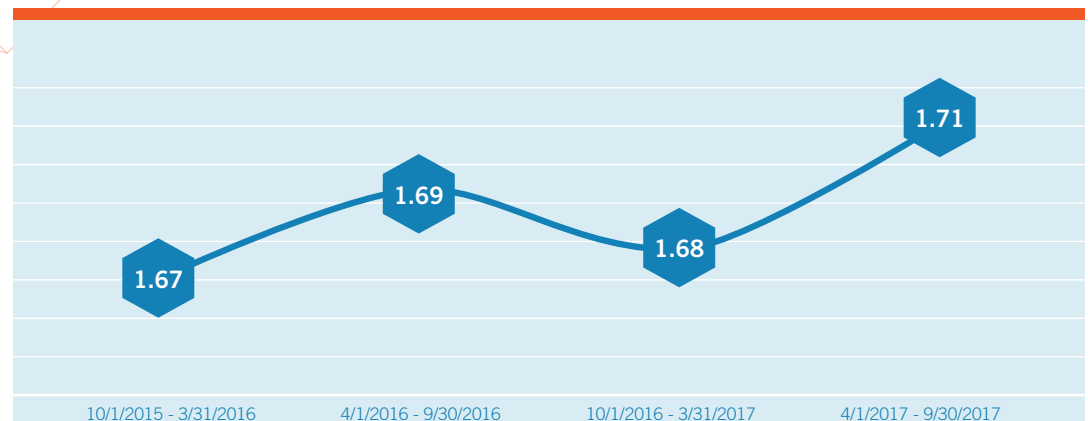
Vermont.....	-4.3%
Arizona.....	-2.4%
Delaware.....	-0.9%
New Mexico.....	-0.8%
New York.....	-0.4%

## Teaching Status Results

While we observe an overall nationwide case mix index increase of 2.5% and a CC/MCC capture rate increase of 1.3%, *Figure 6 and Figure 7* below reveals that teaching hospitals realized a greater percentage increase in their CC/MCC capture rate. These hospitals increased by 1.9% compared to non-teaching hospitals that increased by only 0.7% despite the fact that non-teaching hospitals saw a greater percentage increase in their case mix index (3.4%) compared to teaching hospitals (2.4%).

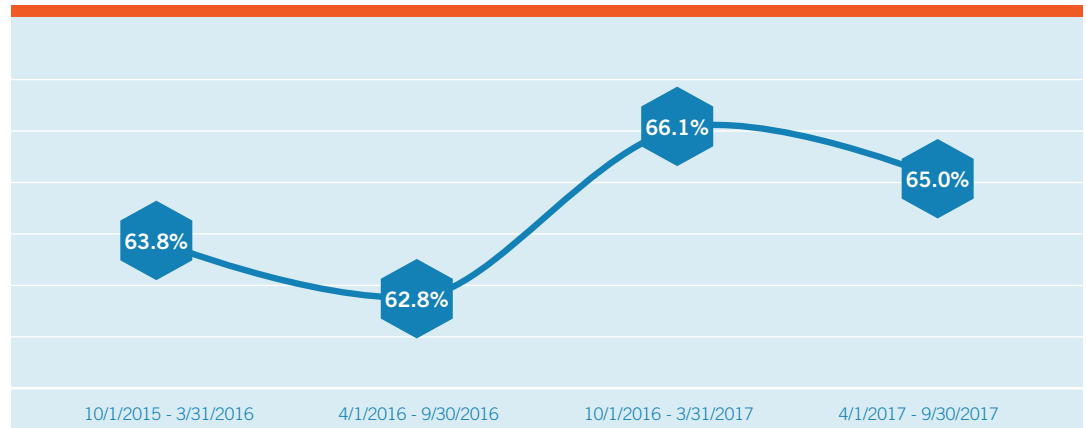
**Figure 6**

CMI Change:  
Teaching Hospitals





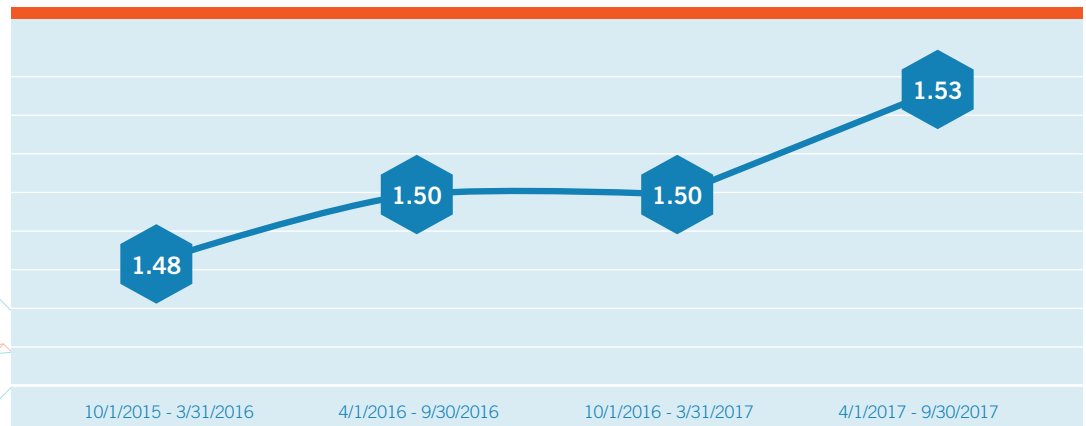
CC/MCC Capture  
Rate Change:  
**Teaching Hospitals**



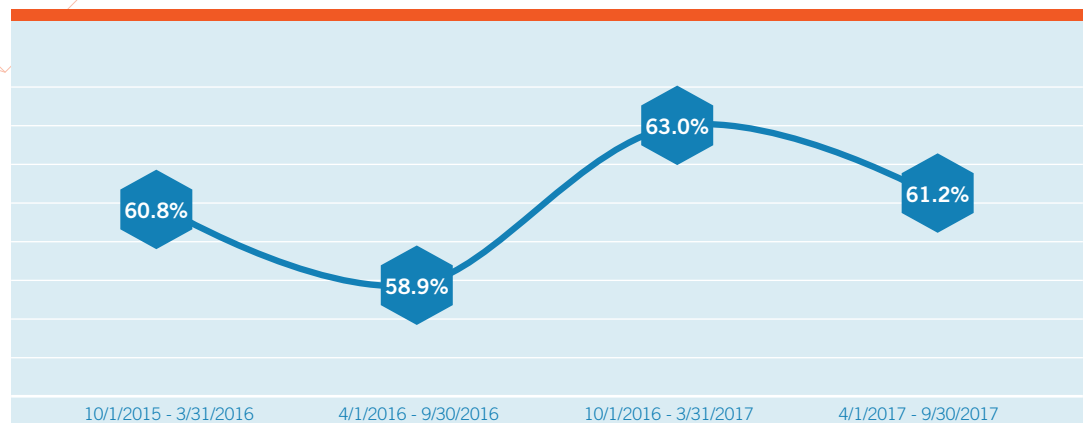
It is understandable that non-teaching hospitals have smaller CC/MCC movement, but it is concerning that 63.8% of the non-teaching hospitals nationwide are below the national average and approximately 40% of both teaching and non-teaching hospitals are experiencing a downward CC/MCC capture rate trend. Clearly, with 40% of hospitals nationwide experiencing downward capture rate trends despite favorable results and trends overall, performing focused audits in these areas is needed to determine if there are opportunities for coding or documentation improvement.

**Figure 7**

CMI Change:  
**Non-Teaching Hospitals**



CC/MCC Capture  
Rate Change:  
**Non-Teaching Hospitals**



## Findings

From this analysis we can conclude that overall the industry has performed well since the implementation of ICD-10; however, there is still room for improvement, even if your individual health system is performing at or above the national benchmarks. We can use case mix index and CC/MCC capture rates and trends as indicators of areas to pay attention to in coding, documentation, and financial initiatives.

### Finding 1: Education and Training Paid Off

Hospital operating margins did not deteriorate in the transition from ICD-9 to ICD-10 and since the implementation of ICD-10 it seems the case mix index and CC/MCC capture rates are increasing overall. We can largely attribute this success to the education and training focus in the lead up to October 1, 2015 and the implementation of the new code set.

The upward trends in case mix index and CC/MCC capture rates could be due to real changes in case mix (for example, low cost cases moving to outpatient facilities, etc.), but they also indicate that the industry overall has adapted well to the substantial increase in coding and documentation requirements under ICD-10.

### Finding 2: Despite Overall Positive Trends, Opportunities Still Exist

Though the overall picture looks rosy, the analysis shows that these upward trends are not true for all MS-DRG groups nor for all providers in all areas and across all facility types. There are health systems performing below the national benchmarks and showing declining CC/MCC capture rates. These facilities could benefit from examining these trends to determine whether they could be corrected with focused audit, training, and education initiatives.

Overall positive trends also do not rule out the possibility for improvement opportunities. Providers that are performing at or above the national benchmarks will still benefit from making comparisons to more specific, tailored benchmarks within their peer group and examining the data at the MS-DRG group level.

### Finding 3: Hospitals Must Consider CC/MCC Rates by Specific DRG Groups

Whether a health system's case mix index or CC/MCC capture rates are trending up or down or whether they are performing at or above the national or peer-group benchmarks, they will benefit from examining the data at the MS-DRG level. Looking at each DRG group will allow them to identify specific opportunities that may be masked by the overall positive or negative results.

“Examining the data at the MS-DRG group level may also shed light on whether the health system is being served well by their CC/MCC assignment guidelines.”

Examining the data at the MS-DRG group level may also shed light on whether the health system is being served well by their CC/MCC assignment guidelines. For example, many facilities pulled back on CC/MCC coding in the first year after ICD-10 implementation due to an increase in denials on certain CC/MCC conditions. They may now be too conservative on CC/MCC code assignment, missing out on opportunities. Another example here is that of the facilities that have adopted SOFA to better solidify clinical support for sepsis in their documentation. Though their documentation may have improved these facilities may have also realized revenue drops while adhering to guidelines that are not federally mandated.

## Solutions

To make the most of this data, health systems should consider examining the following:

### **Status compared to the national trends**

How did your health system perform from 2015 to 2017? We have created a free report to accompany this study that provides upward and downward trend information by hospital. This enables you to gauge how you stack up compared to the national benchmarks.

### **Comparison against a custom peer group**

By comparing your health system with the case mix indices and CC/MCC capture rates of just those facilities in your peer group, you will be able to rule out any differences that are due to size, complexity, or acuity, providing a stronger data set for decision making.

### **Overall DRG trends for your individual health system**

The complimentary report included with this study offers the overall number of DRG groups with volume and the percentage of these groups that is declining by individual hospital. This will provide an idea of the scope of opportunity available for your specific organization.

### **Trends by specific DRG groups**

Even if your health system has realized an overall increase in case mix index and CC/MCC capture rates, more specific opportunity for improvement can be found at the DRG level. Examining the specific DRG groups where your organization sees volume and whether each is trending up or down will indicate which areas may warrant attention. Focused record selection and reviews may be productive in these areas.

### **Focused record selection and audit programs**

Once areas of potential opportunity have been identified, health systems can leverage software technology to select and review those cases with the highest probability for coding and/or documentation issues, maximizing improvement efforts.



## Conclusion

After analyzing the two years of Medicare claims data available since the implementation of ICD-10, we found that overall the industry has fared well. However, though pre-ICD-10 education and training seems to have paid off, there are still opportunities for improvement—even in those facilities that are showing case mix index and CC/MCC capture rates that are at or above national benchmark levels.

To act on this information, health systems need to consider how they compare to the national averages and custom peer groups, whether their CC/MCC capture rates are trending up or down overall, and whether CC/MCC capture rates in individual DRG groups are increasing or declining as these can indicate areas that may provide opportunities for coding, documentation, and financial improvement.

Health systems can begin this process by learning their organization's overall two-year case mix and capture rate trends and percentage of DRG groups with declines in the complimentary report Panacea has created to accompany this study.

## About Panacea

Panacea, a Career Step company, helps healthcare organizations improve their bottom lines and coding, compliance and data integrity with front-line expertise in mid-revenue-cycle management, innovative software, and enterprise-level educational solutions. Designed for the healthcare professionals responsible for financial performance or compliance, Panacea helps identify opportunities and overcome today's challenges, providing the clear answers needed to swiftly and cost-effectively achieve quality results. More information is available at [panaceainc.com](http://panaceainc.com).

## The Authors



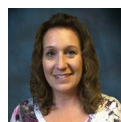
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To receive your **FREE** CC/MCC capture rate and CMI two-year trend report from Panacea Inc, call **1-866-926-5933** or email [contact@panaceainc.com](mailto:contact@panaceainc.com)

# Get the DRG-Level Information Your Health System Needs

Focus your coding, documentation, education and training, and audit improvement programs with DRG-level data.

## Your Health System Analytics Report

Excel report for the period October 1, 2015 – September 30, 2017, broken down in four 6-month intervals, showing:

- ✔ Case-mix trend
- ✔ CC/MCC capture rate trend
- ✔ Details by DRG group and by DRG
- ✔ CC/MCC capture rate benchmarks by DRG group including national and state averages; as well as by overall categories, bed size, and teaching status
- ✔ CC/MCC capture rate benchmarks and trend using PEPPER DRG groupings

**+ Add-on:** Panacea can also process more current data and compare to prior trend AND any benchmarks selected by your organization from this study.

## CC/MCC Benchmark File

Excel file to include CC/MCC capture rate benchmarks by DRG group, nationwide and by each state, including:

- ✔ Overall categories
- ✔ Bed size
- ✔ Teaching status
- ✔ This file is useful for vendors or providers in establishing focused review programs and supporting reporting and other comparative analytics decisions.

**+ Add-on:** Panacea can provide a custom peer group benchmark file. Choose up to 10 hospitals nationwide either from your market area or one that more closely aligns with your case-mix.

## Request even more customized services with Panacea.

### I10focus Processing and Focused Record Selection

Panacea will process up to 12 months abstract or claims data representing 100% of your inpatient records and apply rules based on your hospitals CC/MCC capture results by DRG group for review by your staff or Panacea for additional fee.

### I10focus Subscription

Use Panacea's I10focus system to select records for a focused baseline review using customized rules based on your CC/MCC and other data. Combine this with Panacea and Career Step training and education services and tools to implement an ongoing (monthly or quarterly) audit, review, and training/education program.

### Customized Career Step Training

Develop a custom education and training program to address the areas for improvement identified through the finding discussed in this study.

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