Hospital Readmissions Reduction Program Overview

Background

Readmission rates are important markers of quality of care, particularly of the care of a patient in transition from an acute care setting to a nonacute care setting. Successful efforts to reduce preventable readmission rates will improve quality of care while decreasing costs. The Affordable Care Act (ACA) establishes the Hospital Readmissions Reduction Program, effective for discharges from an applicable hospital beginning on or after Oct. 1, 2012. This program requires that payments to those hospitals under section 1886(d) of the Social Secrity Act (The Act) be reduced to account for certain excess readmissions.

To promote quality of care, the Centers for Medicare & Medicaid Services (CMS) developed hospital quality-of-care measures that compare patient outcomes across different hospitals. These measures include hospital risk-standardized readmission measures for:

- Acute myocardial infarction (AMI) 30-day Risk Standardized Readmission Measure (NQF #0505)
- Heart failure (HF) 30-Day Risk Standardized Readmission Measure (NQF #0330)
- Pneumonia (PN) 30-day Risk Standardized Readmission Measure (NQF #0506)

The measures, originally developed for public reporting as a part of the Hospital Inpatient Quality Reporting (IQR) Program, are endorsed by the National Quality Forum (NQF), and have been publicly reported on the Hospital Compare *w*ebsite since 2009 to encourage quality improvement and lower readmission rates.

FY12 Readmissions Program Reduction Provisions

In the FY12 inpatient prospective payment system (IPPS)/long-term care hospital (LTCH) proposed rule, CMS proposed that the readmission measures for these three conditions be used for the Hospital Readmissions Reduction Program under section 1886(q) of the Act, as added by section 3025 of the ACA. In that rule, CMS also addressed those aspects of the Hospital Readmissions Reduction Program that relate to the conditions and readmissions to which the program will apply for the first program year beginning Oct. 1, 2012, the readmission measures and related methodology used for those measures, and the calculation of the readmission rates as well as public reporting of the readmission data. CMS noted its intent to implement the requirements of the Hospital Readmissions Reduction Program in the FY12, FY13, and future IPPS/LTCH PPS rulemaking cycles. The two-year rulemaking schedule provides adequate time and opportunities for careful consideration of the various aspects of the Hospital Readmissions Reduction Program by both CMS and stakeholders prior to its FY13 implementation.

In the proposal, CMS addressed:

- Those aspects of the program that relate to the conditions and readmissions to which the program will apply
- For the first program year beginning Oct. 1, 2012, the readmission measures and related methodology used for those measures, as well as the calculation of the readmission rates
- Public reporting of the readmission data

CMS believes it was appropriate to first address the readmission measures and the calculation of the excess readmission ratio that will be used to calculate the readmission payment adjustment factor and the application of the readmission payment adjustment factor to inpatient hospital payments.

AMI, HF, and PN were selected as applicable conditions for the Hospital Readmissions Reduction Program because CMS believes these conditions meet the criteria for applicable conditions under section 1886(q)(5)(A) of the Act. With regard to the first criterion, that readmissions of applicable conditions be high volume or high expenditure, MedPAC identified AMI, HF, and PN as being among the seven conditions and procedures associated with approximately 30 percent of potentially preventable readmissions. Of these seven conditions and procedures, HF and PN were the highest in terms of volume and expenditures. Regarding the second criterion, CMS believes that measures of readmissions for these applicable conditions also meet the statutory requirements. Section 1886(q)(5)(A)(i) of the Act requires that each applicable condition have measures of readmissions that have been endorsed by the entity with a contract under section 1890(a); and such endorsed measures have exclusions for readmissions that are unrelated to the prior discharge. The NQF (the entity with a contract under section 1890(a) of the Act) has endorsed measures of readmissions for each of these three conditions, and those NQF-endorsed measures have exclusions for readmissions that are unrelated to the prior discharge (such as a planned readmission or transfer to another applicable hospital).

The three NQF-endorsed readmission measures define a readmission as occurring when a patient is discharged from the applicable hospital to a nonacute setting (for example, home health, skilled nursing, rehabilitation, or home) and then is admitted to the same or another acute care hospital within a specified time period from the time of discharge from the index hospitalization. The time period specified for these measures is 30 days. CMS adopted, for purposes of the Hospital Readmissions Reduction Program, the measures and related methodologies as they are currently endorsed by NQF.

The three NQF-endorsed readmission measures have exclusions for readmissions that are unrelated to the prior discharge (such as a planned readmission or transfer to another applicable hospital), which is a statutory requirement.

Methodology of Proposed Readmission Measures

The measures are risk-standardized rates of readmission. For each hospital, qualifying index hospitalizations are identified based on the principal discharge diagnosis of the patient and the inclusion/exclusion criteria. Each hospitalization is evaluated for whether the patient had a readmission to an acute care setting in the 30-days following discharge. Patient risk factors, including age, and chronic medical conditions are also identified from inpatient and outpatient claims for the 12 months prior to the hospitalization for risk-adjustment. The readmissions, sample size for each hospital, and patient risk factors are then used to calculate a risk-

standardized readmission ratio for each hospital. For the purposes of publicly reporting the measures, this risk-standardized readmission ratio is then multiplied by the national crude rate of readmission for the given condition to produce a risk-standardized readmission rate (RSRR).

An index hospitalization for each of the readmission measures is the hospitalization from which CMS evaluates the 30 days after discharge for possible readmissions. The measures, as endorsed by the NQF, evaluate eligible hospitalizations and readmissions of Medicare patients discharged from an applicable hospital (as defined by section 1886(q)(5)(C) of the Act) having a principal discharge diagnosis for the measured condition in an applicable period.

With the exception of the exclusions, including transfers and planned readmissions, the proposed measures, as currently endorsed by the NQF, include readmissions for all causes, without regard to the principal diagnosis of the readmission. Section 1886(q)(4)(C)(II)(ii) of the Act authorizes the HHS Secretary to exclude readmissions for an applicable condition for which there are fewer than a minimum number (as determined by the HHS Secretary). Currently, for public reporting purposes under the IQR program, only hospitals with at least 25 discharges for each of the three proposed applicable conditions are included in the display of the three proposed readmission measures on Hospital Compare. CMS chose this number of discharges for the IQR based on its findings that using fewer cases did not provide sufficiently reliable information on hospital performance. Based on its experience with the IQR program, CMS will use the current threshold of 25 discharges for each of the three measures for the Hospital Readmissions Reduction Program.

Risk Adjustment

The number of readmissions used in the excess readmission ratio must be risk-adjusted. Therefore, CMS is required to account for differences in the severity of illness of the patients that hospitals treat when comparing hospitals' readmission rates. The methodology for calculating the RSRRs under the NQF-endorsed measures adjust for key factors that are clinically relevant and have strong relationships with the outcome (for example, patient demographic factors, patient co-existing medical conditions, and indicators of patient frailty).

Reporting Hospital-Specific Readmission Rates

Section 1886(q)(6)(A) of the Act requires the HHS Secretary to ''make information available to the public regarding readmission rates of each subsection (d) hospital under the readmission reduction program.'' CMS currently reports information on the three readmission rates on the Hospital Compare website for each subsection (d) hospital. Hospitals are provided an opportunity to preview their readmission rates for 30 days prior to posting on the website. CMS will use a similar process and timeframe for the rates calculated for the Hospital Readmissions Reduction Program. Through this process, hospitals will be able to review the information and submit to CMS corrections in advance of the information to be made public. CMS will carefully review all such correction submissions, determine the appropriateness of any revisions, inform the hospital requesting corrections of its findings, and make any appropriate revisions to the information to be made available to the public regarding the hospital's readmission rates.

Excess Readmission Ratio

Section 1886(q)(4)(C) of the Act requires the HHS Secretary to develop a risk-adjusted excess readmission ratio. The excess readmission ratio will be used to calculate aggregate payments for

excess readmissions as required under section 1886(q)(4)(A)(iii) of the Act , which, in turn, is used to determine the adjustment factor. The statute also requires that the numerator and denominator of the ratio, that is, risk-adjusted readmissions based on actual readmissions and the risk-adjusted expected readmissions, be determined consistent with a readmission measure methodology that has been endorsed under paragraph (5)(A)(ii)(I).

CMS will use the risk-standardized ratio calculated for the NQF-endorsed measures for AMI, HF, and PN as the excess readmission ratio. This risk-standardized ratio as required by the Act is a ratio of risk-adjusted readmission based on actual to risk-adjusted expected readmissions. Moreover, use of this ratio meets the statutory requirement that the numerator and denominator of the ratio be determined in a manner that is consistent with an NQF-endorsed readmission measure methodology. The ratio is a measure of relative performance. If a hospital performs better than an average hospital that admitted similar patients (that is, patients with the same risk factors for readmission, such as age and comorbidities), the ratio will be less than 1.0. If a hospital performs worse than average, the ratio will be greater than 1.0. Hospitals with a ratio greater than one have excess readmissions relative to average quality hospitals with similar types of patients.

Numerator and Denominator of the Risk-Standardized Ratio (Excess Readmission Ratio)
The NQF-endorsed measures that CMS finalized for the Hospital Readmissions Reduction Program, calculate this risk-standardized ratio using hierarchical logistic modeling, which is a widely accepted statistical method that evaluates relative hospital performance based on outcomes such as readmission. The method adjusts for variation across hospitals in how sick their patients are when admitted to the hospital (and therefore variation in hospitals' patients' readmission risk) as well as the variation in the number of patients that a hospital treats to reveal difference in quality.

Hierarchical logistic regression produces an adjusted actual, or ''predicted,'' number in the numerator and an ''expected'' number in the denominator. The expected calculation is similar to that for logistic regression. It is the sum of all patients' expected probabilities of readmission given their risk factors and the risk of readmission at an average hospital. CMS believes that hierarchical modeling is a more appropriate statistical approach for hospital outcomes measures than the logistic regression model, which produces an observed over expected ratio.

For ease of interpretation, the excess readmissions ratio is multiplied by the national readmission rate for the reporting of risk-standardized readmission rates to the public as a part of the Hospital IQR Program.

Numerator Calculation—Adjusted Actual Readmissions
For each hospital, the numerator of the ratio used in the NQF-endorsed methodology (actual adjusted readmissions) is calculated by estimating the probability of readmission for each patient at that hospital and summing up over all the hospital's patients to get the actual adjusted number of readmissions for that hospital. This estimated probability of readmission for each patient is calculated using:

- The hospital-specific effect (probability of readmission relative to the probability of readmission at an average hospital

- The intercept term for the model, which is the probability of readmission for each patient when the value of all the patient risk factors is zero
- The probability of readmission contributed by each of the patients' risk factors (risk adjustment coefficients multiplied by the patient's risk factors X) (***See Appendix 1 chart containing mathematical expression of numerator.)***

Denominator Calculation—Expected Readmissions (at an Average Quality Hospital Treating the Same Patients)
The denominator of the risk-standardized ratio (excess readmission ratio) under this NQF-endorsed methodology sums the probability of readmission for each patient at an average hospital. This probability is calculated using:

- The intercept term for the model (the same for all hospitals and for both numerator and denominator equations) and
- The increase or decrease in the probability of readmission contributed by each of the patients' risk factors (risk-adjustment coefficients multiplied by the patient's risk factors, X) (***See Appendix 2 chart containing mathematical expression of denominator.)***

Thus, the ratio compares the total adjusted actual readmissions at the hospital with the number that would be expected if the hospital's patients were treated at an average hospital with similar patients.

CMS accepted these regulations as proposed in the FY12 final rule, published in the Aug. 18, 2011, *Federal Register*. See link to the section of the FY12 IPPS/LTCH final rule that discusses the Hospital Readmissions Reduction Program under the "More Information" section of this fact sheet.

FY13 Proposed Provisions
CMS proposed a number of policies to implement section 1886(q) of the Act, as added by section 3025 of the ACA, which establishes the Hospital Readmissions Reduction Program. The measures, as endorsed by the NQF, include the 30-day time window, risk-adjustment methodology, and exclusions for certain readmissions. This provision is not budget neutral. Under the Hospital Readmissions Reduction Program in section 1886(q) of the Act, payments for discharges from an "applicable hospital" will be an amount equal to the product of the "base operating diagnosis-related group (DRG) payment amount" and an "adjustment factor" that accounts for excess readmissions for the hospital for the fiscal year, for discharges beginning on or after Oct. 1, 2012. Applicable hospitals are those that are subsection (d) hospitals that are paid under the IPPS. Therefore, Puerto Rico hospitals are not considered applicable hospitals under the Hospital Readmissions Reduction Program. However, Indian Health Services hospitals are considered applicable hospitals under the Hospital Readmissions Reduction Program, even if they are not paid under the IPPS, as well as sole community hospitals (SCHs), and current Medicare Dependent Hospitals (MDHs).

The HHS Secretary is required to make payments for a discharge in an amount equal to the product of "the base operating DRG payment amount" and "the adjustment factor" for the hospital in a given fiscal year. The base operating DRG payment amount is defined as the

payment amount that would be made under subsection (d), reduced by outlier payments, indirect medical education (IME) payments, disproportionate share hospital (DSH) payments, and payments for low-volume hospitals, respectively.

The "base operating DRG payment amount" under the Hospital Readmissions Reduction Program is the wage-adjusted DRG operating payment plus any applicable new technology add-on payments. As required by the statute, the proposed definition of "base operating DRG payment amount" does not include adjustments or add-on payments for IME, DSH, outliers, and low-volume hospitals. The payment adjustment for each discharge is determined by subtracting the product of the base operating DRG payment amount for such discharge by the hospital's admission payment adjustment factor for the fiscal year from the base operating DRG payment amount for such discharge. For sole community hospitals that receive payments based on their hospital-specific payment rate, CMS is also proposing to exclude the difference between the applicable hospital-specific payment rate and the federal payment rate from the definition of "base operating DRG payment amount."

CMS also proposes to establish criteria for evaluation of an annual report to CMS to determine whether Maryland should be exempted from the program each year. Accordingly, CMS would evaluate a report submitted by the state of Maryland documenting how its program meets those criteria. Based on the information in the report, CMS would determine whether or not Maryland's readmission program meets its criteria to be exempt from the Hospital Readmissions Reduction Program for FY13. CMS notes that its proposed criteria to evaluate Maryland's program is for FY13, the first year of the program, and its evaluation criteria may change through notice-and-comment rulemaking as the Hospital Readmissions Reduction Program evolves. CMS is also proposing to evaluate whether Maryland's program can demonstrate similar results in reducing unnecessary readmissions among hospitals in the state. CMS estimates that, under the Hospital Readmissions Reduction Program, Medicare IPPS operating payments will decrease by approximately $300 million (or 0.3 percent) of total Medicare IPPS operating payments for FY13.

Maryland has indicated that it believes it can achieve comparable savings because it intends to reduce the rate update factor for all hospitals by 0.3 percent, regardless of a hospital's performance on readmissions. In future rules, CMS plans to evaluate whether Maryland's admission-readmission revenue (ARR) program can meet or exceed health outcomes that it expects to improve under the Hospital Readmissions Reduction Program. Because the program is not effective until Oct. 1, 2012, CMS does not have measured health outcomes against which it can evaluate Maryland's ARR program. However, it intends to evaluate Maryland's ARR program in the future.

A hospital included in this program can have an adjustment factor that is between 1.0 and 0.9900 for FY13. A hospital will receive an adjustment factor under the Hospital Readmissions Reduction Program that is the greater of the ratio or the floor of 0.99. Consistent with this proposal, CMS defines the "floor adjustment factor" as the value that the readmissions adjustment factor cannot be less than for a given fiscal year. The floor adjustment factor is set at 0.99 for FY13, 0.98 for FY14, and 0.97 for FY15 and subsequent fiscal years.

In the proposal, CMS defines aggregate payments for excess readmissions and aggregate payments for all discharges, as well as a methodology for calculating the numerator of the ratio (aggregate payments for excess readmissions) and the denominator of the ratio (aggregate payments for all discharges):

- *Aggregate Payments for Excess Readmissions*: "for a hospital for an applicable period, the sum, for applicable conditions . . . of the product, for each applicable condition, of (i) the base operating DRG payment amount for such hospital for such applicable period for such condition; (ii) the number of admissions for such condition for such hospital for such applicable period; and (iii) the 'Excess Readmission Ratio'… for such hospital for such applicable period minus 1"
- *Aggregate Payments for all Discharges*: for a hospital for an applicable period, the sum of the base operating DRG payment amounts for all discharges for all conditions from such hospital for such applicable period

When determining the base operating DRG payment amount for an individual hospital for such applicable period for such condition, CMS proposes to use Medicare inpatient claims from the MedPAR file with discharge dates that are within the same applicable period. These claims data were finalized in the FY12 IPPS/LTCH PPS final rule to calculate the excess readmission ratio. CMS proposes to use MedPAR claims data as its data source for determining aggregate payments for excess readmissions and aggregate payments for all discharges, as this data source is consistent with the claims data source used in IPPS rulemaking to determine IPPS rates.

For the proposed rule, for the purpose of modeling the proposed aggregate payments for excess readmissions and the proposed readmissions adjustment factors, CMS will use excess readmission ratios for the applicable hospitals from the three-year period of July 1, 2007, to June 30, 2010, because the underlying data from this period have already been available to the public on the Hospital Compare website. For the final rule, we intend to use excess readmission ratios based on discharges for the finalized applicable period of July 1, 2008, to June 30, 2011, to calculate the aggregate payments for excess readmissions and, ultimately, to calculate the readmission adjustment factors. CMS proposes that the excess readmission ratios for each condition used to calculate the numerator of this ratio are excess readmission ratios that have gone through the proposed review and correction process. Each product in this computation represents the payment for excess readmissions for that condition. CMS would then sum the resulting products, which represent a hospital's proposed "aggregate payments for excess readmissions" (the numerator of the ratio). If a hospital has an excess readmission ratio that is greater than one for a condition, that hospital has performed, with respect to readmissions for that applicable condition, worse than the average hospital with similar patients. As such, it will have aggregate payments for excess readmissions. If a hospital has an excess readmission ratio that is less than (or equal) to one, that hospital has performed better (or on average), with respect to readmissions for that applicable condition, than an average hospital with similar patients. Therefore, that hospital would not be considered to have "aggregate payments" for excess readmissions, and its payments would not be reduced under section 1886(q) of the Act.

The formulas used to calculate the readmission adjustment factor are as follows:

Aggregate Payments for Excess Readmissions: [sum of base operating DRG payments for AMI x (Excess Readmission Ratio for AMI-1)] + [sum of base operating DRG payments for HF x (Excess Readmission Ratio for HF-1)] +[sum of base operating DRG payments for PN x (Excess Readmission Ratio for PN-1)].

Aggregate Payments for all Discharges: sum of base operating DRG payments for all discharges. **Ratio** = 1- (Aggregate payments for excess readmissions/Aggregate payments for all discharges).

The readmissions adjustment factor for FY13 is the higher of the ratio or 0.99.

Note: Based on claims data from July 1, 2008, to June 30, 2011, for FY13.

In order to identify the admissions for each condition for an individual hospital for calculating the aggregate payments for excess readmissions, CMS proposes to identify each applicable condition using the same ICD-9-CM codes used to calculate the excess readmission ratios. In the FY12 IPPS/LTCH PPS final rule, in its discussion of the methodology of the readmissions measures, CMS stated that it identifies eligible hospitalizations and readmissions of Medicare patients discharged from an applicable hospital having a principal diagnosis for the measured condition in an applicable period. The discharge diagnoses for each applicable condition are based on a list of specific ICD-9-CM codes for that condition. To identify the applicable conditions to calculate the aggregate payments for excess readmissions, CMS proposes to identify the claim as an applicable condition if the ICD-9-CM code for that condition is listed as the principal diagnosis on the claim, consistent with the methodology to identify conditions to calculate the excess readmission ratio.

Furthermore, it proposes to identify only Medicare fee-for-service claims that meet the criteria (that is, claims paid for under Part C, Medicare Advantage, would not be included in this calculation), consistent with the methodology to calculate excess readmission ratios based on readmissions for Medicare FFS patients. CMS lists the ICD-9-CM codes that it proposes to use to identify each applicable condition to calculate the aggregate payments for excess readmissions under this proposal. These ICD-9-CM codes will also be used to identify the applicable conditions to calculate the excess readmission ratios, consistent with its policy finalized in the FY 2012 IPPS/LTCH PPS final rule. (***See Appendix 3 for a list of ICD-9-CM codes that CMS is proposing to use to identify each applicable condition to calculate the aggregate payments for excess readmissions under the proposal.)***

SCHs and current MDHs (whose status is set to expire at the end of FY12) are considered applicable hospitals in the Hospital Readmissions Reduction Program, as these hospitals meet the definition of subsection (d) hospitals. For these providers, CMS is proposing to model their base operating DRG payment amount as they would have been paid under the federal standardized amount, rather than using the information on the claim so that their payments are consistent with its proposed definition of base operating DRG payment.

See link to HFMA's ***Hospital Inpatient Value-Based Purchasing Program Fact Sheet*** under the "Related Links" section.

More Information
Read the section (pages 27955-27968) of the FY13 proposed rule, published in the May 11, 2012, *Federal Register*. Comments on the rule are due June 25, 2012.

FY12 Hospital Readmissions Reduction Program, contained in the FY12 IPPS/LTCH final rule, (pgs. 51660-51676) published in the Aug. 18, 2011, *Federal Register*.

Related Links
FY13 IPPS Proposed Rule Overview
HFMA's Hospital Inpatient Value-Based Purchasing Program Final Rule Fact Sheet

Appendix 1

Numerator: Adjusted Actual Readmissions

Step 1:

Calculate each patient's predicted probability of readmission = $\frac{1}{1 + e^{-Za}}$

Z_a = hospital-specific effect + Xβ

intercept + risk-adjustment coefficients

Step 2:

To get the numerator result, add all patients' predicted probabilities of readmission

Appendix 2

Denominator: Expected Readmissions

Step 1:

Calculate each patient's expected probability of readmission = $\frac{1}{1 + e^{-Ze}}$

Z_e = Xβ

intercept + risk-adjustment coefficients

Step 2:

To get the denominator result, add all patients' expected probabilities of readmission

Appendix 3

ICD-9-CM CODES TO IDENTIFY PNEUMONIA CASES

ICD-9-CM Code	Description of Code
480.0	Pneumonia due to adenovirus
480.1	Pneumonia due to respiratory syncytial virus
480.2	Pneumonia due to parainfluenza virus
480.3	Pneumonia due to SARS-associated coronavirus
480.8	Viral pneumonia: pneumonia due to other virus not elsewhere classified
480.9	Viral pneumonia unspecified
481	Pneumococcal pneumonia [streptococcus pneumoniae pneumonia]
482.0	Pneumonia due to klebsiella pneumoniae
482.1	Pneumonia due to pseudomonas
482.2	Pneumonia due to hemophilus influenzae [h. influenzae]
482.30	Pneumonia due to streptococcus unspecified
482.31	Pneumonia due to streptococcus group a
482.32	Pneumonia due to streptococcus group b
482.39	Pneumonia due to other streptococcus
482.40	Pneumonia due to staphylococcus unspecified
482.41	Pneumonia due to staphylococcus aureus
482.42	Methicillin Resistant Pneumonia due to Staphylococcus Aureus
482.49	Other staphylococcus pneumonia
482.81	Pneumonia due to anaerobes
482.82	Pneumonia due to escherichia coli [e.coli]
482.83	Pneumonia due to other gram-negative bacteria
482.84	Pneumonia due to legionnaires' disease
482.89	Pneumonia due to other specified bacteria
482.9	Bacterial pneumonia unspecified

ICD-9-CM Code	Description of Code
483.0	Pneumonia due to mycoplasma pneumoniae
483.1	Pneumonia due to chlamydia
483.8	Pneumonia due to other specified organism
485	Bronchopneumonia organism unspecified
486	Pneumonia organism unspecified
487.0	Influenza with pneumonia
488.11	Influenza due to identified novel H1N1 influenza virus with pneumonia

ICD-9-CM CODES TO IDENTIFY HEART FAILURE CASES

ICD-9-CM Code	Code Description
402.01	Hypertensive heart disease, malignant, with heart failure
402.11	Hypertensive heart disease, benign, with heart failure
402.91	Hypertensive heart disease, unspecified, with heart failure
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified failure and chronic kidney disease stage V or end stage renal disease
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
428.xx	Heart Failure

ICD-9-CM CODES TO IDENTIFY ACUTE MYOCARDIAL INFARCTION CASES

ICD-9-CM Code	Description of Code
410.00	AMI (anterolateral wall) – episode of care unspecified
410.01	AMI (anterolateral wall) – initial episode of care

ICD-9-CM Code	Description of Code
410.10	AMI (other anterior wall) – episode of care unspecified
410.11	AMI (other anterior wall) – initial episode of care
410.20	AMI (inferolateral wall) – episode of care unspecified
410.21	AMI (inferolateral wall) – initial episode of care
410.30	AMI (inferoposterior wall) – episode of care unspecified
410.31	AMI (inferoposterior wall) – initial episode of care
410.40	AMI (other inferior wall) – episode of care unspecified
410.41	AMI (other inferior wall) – initial episode of care
410.50	AMI (other lateral wall) – episode of care unspecified
410.51	AMI (other lateral wall) – initial episode of care
410.60	AMI (true posterior wall) – episode of care unspecified
410.61	AMI (true posterior wall) – initial episode of care
410.70	AMI (subendocardial) – episode of care unspecified
410.71	AMI (subendocardial) – initial episode of care
410.80	AMI (other specified site) – episode of care unspecified
410.81	AMI (other specified site) – initial episode of care
410.90	AMI (unspecified site) – episode of care unspecified
410.91	AMI (unspecified site) – initial episode of care