NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the submitting standards web page.

NQF #: 0173 **NQF Project:** Care Coordination Project

(for Endorsement Maintenance Review)
Original Endorsement Date: Mar 31, 2009 **Most Recent Endorsement Date:** Mar 31, 2009

BRIEF MEASURE INFORMATION

De.1 **Measure Title:** Emergency Department Use without Hospitalization

Co.1.1 **Measure Steward:** Centers for Medicare & Medicaid Services

De.2 **Brief Description of Measure:** Percentage of home health stays in which patients used the emergency department but were not admitted to the hospital during the 60 days following the start of the home health stay.

2a1.1 **Numerator Statement:** Number of home health stays for patients who have a Medicare claim for outpatient emergency department use and no claims for acute care hospitalization in the 60 days following the start of the home health stay.

2a1.4 **Denominator Statement:** Number of home health stays that begin during the 12-month observation period. A home health stay is a sequence of home health payment episodes separated from other home health payment episodes by at least 60 days.

2a1.8 **Denominator Exclusions:** The following are excluded: home health stays for patients who are not continuously enrolled in fee-for-service Medicare during the numerator window (60 days following the start of the home health stay) or until death; home health stays that begin with a Low Utilization Payment Adjustment (LUPA) claim; home health stays in which the patient receives service from multiple agencies during the first 60 days; and home health stays for patients who are not continuously enrolled in fee-for-service Medicare for the 6 months prior the start of the home health stay.

1.1 **Measure Type:** Outcome
2a1. 25-26 **Data Source:** Administrative claims
2a1.33 **Level of Analysis:** Facility

1.2-1.4 **Is this measure paired with another measure?** No

De.3 **If included in a composite, please identify the composite measure** (*title and NQF number if endorsed*)**:**
Not currently included in a composite measure.

STAFF NOTES (*issues or questions regarding any criteria*)

Comments on Conditions for Consideration:

Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:

1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*)**:**
5. Similar/related endorsed or submitted measures (*check 5.1*)**:**
Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All

three subcriteria must be met to pass this criterion. See guidance on evidence.
Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. **(evaluation criteria)**

1a. High Impact: H☐ M☐ L☐ I ☐
(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 **Subject/Topic Areas** *(Check all the areas that apply)*:
De.5 **Cross Cutting Areas** (*Check all the areas that apply*): Care Coordination, Overuse

1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, High resource use

1a.2 **If "Other," please describe:**

1a.3 **Summary of Evidence of High Impact** *(Provide epidemiologic or resource use data)*:
Within home health care, 10.2% of patients utilize the emergency department use, but are not hospitalized during the first 60 days of home health. The research in this area is not specific to home health care patients but applies to home health care patients who are most likely community-dwelling older people. There are two systematic reviews that report that older persons are more likely to use the ED, compared to younger age cohorts (Aminzadeh; Hastings), even though they also have higher rates of use of primary care providers (Horney). There are interventions that have been tested to reduce ED use (geriatric nursing assessment, home care follow up) but the effects are mixed or inconclusive (Aminzadeh; Hastings). Note that the systematic reviews in this area are dated but these are the most recent reported systematic reviews on the topic.
There is room for improvement in this measure because of the size of the population that is impacted and the extent of ED use in this population.

1a.4 **Citations for Evidence of High Impact cited in 1a.3:** (1) Aminzadeh F, Dalziel WB. Older adults in the emergency department: a systematic review of patterns of use, adverse outcomes, and effectiveness of interventions. Ann Emerg Med 2002; 39(3):238-247.
(2) Hastings SN, Heflin MT. A systematic review of interventions to improve outcomes for elders discharged from the emergency department. Acad Emerg Med 2005; 12(10):978-986.
(3) Horney C, Schmader K, Sanders LL, Heflin M, Ragsdale L, McConnell E et al. Health care utilization before and after an outpatient ED visit in older people. Am J Emerg Med 2012; 30(1):135-142.

1b. Opportunity for Improvement: H☐ M☐ L☐ I ☐
(*There is a demonstrated performance gap - variability or overall less than optimal performance*)

1b.1 **Briefly explain the benefits (improvements in quality) envisioned by use of this measure:**
ED use without hospitalization is an outcome measure for home health care and will be publicly reported beginning in mid 2012. ED use without hospitalization occurs at a sufficiently high rate (see section 1b2) that there is likely to be room for improvement and benefit from public reporting. Benefits of this measure include opportunities for identification of inappropriately high ED use and encouragement of agencies to implement interventions that reduce inappropriate ED use, leading to improvement in the health of Medicare beneficiaries and lowering Medicare costs. Home health care agencies focus on this measure as a measure of their effectiveness although the industry anecdotally identifies that they are somewhat constrained by the practice patterns of other providers, particularly physicians and other primary care providers (NPs and PAs).
Note that until 2009, the NQF endorsed home health measure of emergent care use included both those persons who had unplanned visits to a physician office or ED visit as well as those who had a hospital stay following the use of the ED. This was changed based on NQF recommendations so that physician office visits, ED use and acute care hospital use were no longer conflated.
Prior iterations of this measure have also been based on OASIS data. Of note, Wolff et al, (2008) in comparing OASIS and claims for utilization of care in the 14 days prior to home health care, found that the OASIS was not sufficiently accurate in identifying use of other services (hospital, SNF and inpatient rehabilitation). The kappa scores for agreement between the OASIS and the claims were all less than .05. Thus the proposed use of claims-based measures have been found to be superior in research.

1b.2 **Summary of Data Demonstrating Performance Gap** *(Variation or overall less than optimal performance across providers)*:
[*For Maintenance* – *Descriptive statistics for performance results for this measure - distribution of scores for measured entities by*

quartile/decile, mean, median, SD, min, max, etc.]

Observed Agency Rate Distribution:

Mean	10.1%
Std. Dev.	4.3%
Min	0.0%
10%	4.9%
25%	7.4%
50%	9.9%
75%	12.6%
90%	15.3%
Max	40.0%

Risk Adjusted Agency Rate Distribution:

Mean	10.0%
Std. Dev.	4.3%
Min	0.0%
10%	4.6%
25%	7.3%
50%	10.0%
75%	12.6%
90%	15.3%
Max	34.8%

1b.3 Citations for Data on Performance Gap: [*For **Maintenance – Description of the data or sample for measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]**

Medicare certified agencies with at least 20 home health stays beginning between 1/1/2010 and 12/31/2010 and meeting the measure denominator criteria. There were 8,567 such agencies (85% of the 10,125 agencies with at least one stay beginning in 2010). The average size agency had 248 home health stays included in the measure numerator, while the median size agency had 102 home health stays.

1b.4 Summary of Data on Disparities by Population Group: [*For **Maintenance –Descriptive statistics for performance results for this measure by population group*]**

Group	# of HH Stays	% ER Use w/o Hosp.
Female	1,696,373	10.4%
Male	971,554	10.0%
Age <65	333,675	14.2%
Age 65-75	669,615	9.4%
Age 75-85	925,143	9.6%
Age 85+	739,494	10.0%
Black	327,122	11.7%
Hispanic	93,089	8.5%
Other	78,279	8.2%
White	2,169,437	10.2%

1b.5 Citations for Data on Disparities Cited in 1b.4: [*For **Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]**

2010 Home Health Stays at Medicare Certified Agencies. LUPAs and patients not continuously enrolled in Medicare during the observation window were excluded. Population group analysis reports the observed rate of emergency department use and was conducted prior to applying additional measure exclusions needed for risk adjustment and agency attribution. Thus a total of 2,667,927 HH stays were included in this analysis with an overall observed rate of Emergency Department Use without Hospitalization of 10.2%.

1c. Evidence (*Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.*)
Is the measure focus a health outcome? Yes☐ No☐ **If not a health outcome, rate the body of evidence.**

Quantity: H☐ M☐ L☐ I ☐ Quality: H☐ M☐ L☐ I ☐ Consistency: H☐ M☐ L☐ I ☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	**Yes**☐
L	M-H	M	**Yes**☐ IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise **No**☐
M-H	L	M-H	**Yes**☐ IF potential benefits to patients clearly outweigh potential harms: otherwise **No**☐
L-M-H	L-M-H	L	**No** ☐

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service	**Does the measure pass subcriterion1c?** **Yes**☐ IF rationale supports relationship

1c.1 **Structure-Process-Outcome Relationship** *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)***:**
Process-outcome (utilization).
There is evidence that there are strategies that can be undertaken to reduce the use of emergency department including contacting the primary care provider and/or home health care agency as well as telehealth interventions.

1c.2-3 **Type of Evidence** *(Check all that apply)***:**
Selected individual studies (rather than entire body of evidence), Systematic review of body of evidence (other than within guideline development)

1c.4 **Directness of Evidence to the Specified Measure** *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)***:**
There is very little home health care specific research available on this measure. A single study (Tzeng, 2011) reports on 31 patients from a single home health care agency where the study aim was to determine actions taken prior to seeking ED care. There were 35 ED visits made, as some patients had two ED visits during the study period. More than half the patients (57.1%) contacted their primary care provider prior to seeking ED care while less than one third also contacted the home health care agency (28.6%). Of the 35 ED visits, 20 resulted in admissions to the hospital while 15 visits resulted in the patient being sent home.
There is a Cochrane review on the effects of home nursing for patients with COPD but it is not specific to the US and thus is not detailed here.
There is evidence that there are interventions that can be effective in reducing emergency department use. While there are many single studies reporting the effectiveness of telehealth, we are reporting here from selected systematic reviews that are most relevant to home health care patients. Specifically, for patients with heart failure, in a systematic review, telehealth has been found to overall reduce emergency department visits (although the results were not consistent with nine studies finding a beneficial effect, one study finding no difference and one study finding more visits in the telehealth group) (Polisena et al., 2010). In a systematic review of COPD patients, there was evidence that telephone support (using regular telephonic care) reduced emergency department visits (Bourbeau et al., 2003) in one study. None of the other studies reported on ED use for patients with COPD. For patients with diabetes, in a systematic review, the results are mixed with two studies showing a beneficial effect with telehealth and one study finding more ED visits among those in the telemonitoring group (Polisena et al., 2009).
There are other studies that are not relevant (e.g. ED use among palliative care patients at end of life who were also receiving home health care or pediatric only).

1c.5 **Quantity of Studies in the Body of Evidence** *(Total number of studies, not articles)***:** 13 for telemonitoring; one specific to home health care actions prior to ED use

1c.6 **Quality of Body of Evidence** (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included*

in the evidence); and c) imprecision/wide confidence intervals due to few patients or events): Generally moderate to high quality for the telehealth studies. Telehealth is generally effective at reducing ED use for the diseases in which it has been studied and evaluated in systematic reviews. The studies are RCTs or observational studies with small to large sample sizes, depending on the study.
There are systematic reviews on ED use for community dwelling older people but they are dated (2002, 2005) and not reported here.

1c.7 **Consistency of Results across Studies** *(Summarize the consistency of the magnitude and direction of the effect):* Generally consistent that telehealth is beneficial in reducing ED use.

1c.8 **Net Benefit** *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
No harms identified in the systematic reviews for telehealth nor the home health specific study of patient actions taken prior to ED visits.

1c.9 **Grading of Strength/Quality of the Body of Evidence.** Has the body of evidence been graded? No

1c.10 **If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:** N/A

1c.11 **System Used for Grading the Body of Evidence:** Other

1c.12 **If other, identify and describe the grading scale with definitions:** N/A

1c.13 **Grade Assigned to the Body of Evidence:** N/A

1c.14 **Summary of Controversy/Contradictory Evidence:** Evidence is mixed on the benefits of telehealth in reducing ED use although most studies find a beneficial effect. There is insufficient evidence of other interventions to draw conclusions and a general lack of research on home health care patients and ED use.
There is research from Canada, Australia, Israel and other countries on interventions such as hospital-in-the-home but because of differences in the health care systems, it is not reported here.

1c.15 **Citations for Evidence other than Guidelines*(Guidelines addressed below)*:**
Bourbeau J, Julien M, Maltais F, Rouleau M, Beaupre A, Begin R et al. Reduction of hospital utilization in patients with chronic obstructive pulmonary disease: a disease-specific self-management intervention. Arch Intern Med 2003; 163(5):585-591.
Polisena J, Tran K, Cimon K, Hutton B, McGill S, Palmer K. Home telehealth for diabetes management: a systematic review and meta-analysis. Diabetes Obes Metab 2009; 11(10):913-930.
Polisena J, Tran K, Cimon K, Hutton B, McGill S, Palmer K et al. Home telemonitoring for congestive heart failure: a systematic review and meta-analysis. J Telemed Telecare 2010; 16(2):68-76.
Tzeng HM. Preliminary assessment of appropriateness of emergency care service use: actions taken and consultations obtained before emergency care presentation. Home Health Care Serv Q 2011; 30(1):10-23.

1c.16 **Quote verbatim, <u>the specific guideline recommendation</u>** *(Including guideline # and/or page #)*:
A search of the National Guideline Clearinghouse using the terms “emergency department” and “home care services” returned 2 guidelines, none were relevant.
A search of the National Guideline Clearinghouse for “emergency department” and “home care” returned 13 guidelines, none were relevant.
A search of the National Guideline Clearinghouse for “emergency department” and
“home health care” returned 3 guidelines, none were relevant.

1c.17 **Clinical Practice Guideline Citation:** N/A

1c.18 **National Guideline Clearinghouse or other URL:** National Guideline Clearinghouse

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: N/A

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: N/A

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?
1c.25 Quantity: Moderate **1c.26** Quality: Moderate**1c.27** Consistency**:** Moderate

Was the threshold criterion, *Importance to Measure and Report*, met?
(*1a & 1b must be rated moderate or high and 1c yes*) Yes☐ No☐
Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.
For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **(evaluation criteria)**
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

S.1 Measure Web Page *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained*). Do you have a web page where current detailed specifications for this measure can be obtained? No

S.2 If yes, provide web page URL:

2a. RELIABILITY. Precise Specifications and Reliability Testing: H☐ M☐ L☐ I☐

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome)***:**
Number of home health stays for patients who have a Medicare claim for outpatient emergency department use and no claims for acute care hospitalization in the 60 days following the start of the home health stay.

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)***:**
60 days following the start of the home health stay.

2a1.3 Numerator Details *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, codes with descriptors, and/or specific data collection items/responses***:**
The 60 day time window is calculated by adding 60 days to the "from" date in the first home health claim in the series of home health claims that comprise the home health stay. If the patient has any Medicare outpatient claims with any ER revenue center codes (0450-0459, 0981) during the 60 day window AND if the patient has no Medicare inpatient claims for admission to an acute care hospital (identified by the CMS Certification Number on the IP claim ending in 0001-0879, 0800-0899, or 1300-1399) during

the 60 day window, then the stay is included in the measure numerator.

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
Number of home health stays that begin during the 12-month observation period. A home health stay is a sequence of home health payment episodes separated from other home health payment episodes by at least 60 days.

2a1.5 Target Population Category *(Check all the populations for which the measure is specified and tested if any)*: Adult/Elderly Care

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
12-month observation period, updated quarterly.

2a1.7 Denominator Details (*All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
A home health stay is a sequence of home health payment episodes separated from other home health payment episodes by at least 60 days. Each home health payment episode is associated with a Medicare home health (HH) claim, so home health stays are constructed from claims data using the following procedure.
1. First, retrieve HH claims with a "from" date (FROM_DT) during the 12-month observation period or the 120 days prior to the beginning of the observation period and sequence these claims by "from" date for each beneficiary.
2. Second, drop claims with the same "from" date and "through" date (THROUGH_DT) and claims listing no visits and no payment. Additionally, if multiple claims have the same "from" date, keep only the claim with the most recent process date.
3. Third, set Stay_Start_Date(1) equal to the "from" date on the beneficiary's first claim. Step through the claims sequentially to determine which claims begin new home health stays. If the claim "from" date is more than 60 days after the "through" date on the previous claim, then the claim begins a new stay. If the claim "from" date is within 60 days of the "through" date on the previous claim, then the claim continues the stay associated with the previous claim.
4. Fourth, for each stay, set Stay_Start_Date(n) equal to the "from" date of the first claim in the sequence of claims defining that stay. Set Stay_End_Date(n) equal to the "through" date on the last claim in that stay. Confirm that Stay_Start_Date(n+1) – Stay_End_Date(n) > 60 days for all adjacent stays.
5. Finally, drop stays that begin before the 12-month observation window.

Note the examining claims from the 120 days before the beginning of the 12-month observation period is necessary to ensure that stays beginning during the observation period are in fact separated from previous home health claims by at least 60 days.

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
The following are excluded: home health stays for patients who are not continuously enrolled in fee-for-service Medicare during the numerator window (60 days following the start of the home health stay) or until death; home health stays that begin with a Low Utilization Payment Adjustment (LUPA) claim; home health stays in which the patient receives service from multiple agencies during the first 60 days; and home health stays for patients who are not continuously enrolled in fee-for-service Medicare for the 6 months prior the start of the home health stay.

2a1.9 Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
1. Home health stays for patients who are not continuously enrolled in fee-for-service Medicare for the 60 days following the start of the home health stay or until death.
- Both enrollment status and beneficiary death date are identified using the Medicare Enrollment Database (EDB).

2. Home health stays that begin with a Low Utilization Payment Adjustment (LUPA) claim.
- Exclude the stay if LUPAIND = L for the first claim in the home health stay.

3. Home health stays in which the patient receives service from multiple agencies during the first 60 days.
- Define Initial_Provider = PROVIDER on the first claim in the home health stay.
- If Intial_Provider does not equal PROVIDER for a subsequent claim in the home health stay AND if the "from" date of the subsequent claim is within 60 days of Stay_Start_Date, then exclude the stay.

4. Home health stays for patients who are not continuously enrolled in fee-for-service Medicare for the 6 months prior to the start of the home health stay.
- Enrollment status is identified using the Medicare Enrollment Database (EDB).

2a1.10 Stratification Details/Variables *(All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses)*:
Measure is not stratified.

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: Statistical risk model **2a1.12 If "Other," please describe:**

2a1.13 Statistical Risk Model and Variables *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.)*:
Multinomial logit with outcomes of "No acute event", "Emergency Department use but no Hospitalization", and "Acute Care Hospitalization".

Risk factors include:

Prior Care Setting – where the beneficiary received care immediately prior to beginning the home health stay. Variables are defined by examining Medicare institutional claims for the 30 days prior to Stay_Start_Date. Categories are Community (no Inpatient or Skilled Nursing Claims), Inpatient stay of 0-3 days, Inpatient stay of 4-8 days, Inpatient more than 9 days, Skilled Nursing stay of 0-13 days, Skilled Nursing stay of 14-41 days, and Skilled Nursing stay of 42+ days. A patient cared for in both a skilled nursing facility and an inpatient hospital during the 30 days prior to starting home health care is included in the skilled nursing categories not the inpatient categories. The length of stay is determined from the last inpatient or skilled nursing stay prior to beginning home health care.

Age and Gender Interactions – Age categories are <65, 65-74, 75-84, 85+ and are determined based on the patient's age at Stay_Start_Date.

Dual (Medicare/Medicaid) eligibility– A beneficiary with at least one month of Medicaid enrollment in the 6 months prior to Stay_Start_Date is considered dual eligible.

CMS Hierarchical condition categories (HCCs) –HCCs were developed for the risk adjustment model used in determining capitation payments to Medicare Advantage plans and are calculated using Part A and B Medicare claims. While the CMS-HHC model uses a full year of claims data to calculate HCCs, for these measures, we use only 6 months of data to limit the number of home health stays excluded due to missing HCC data.

Details of the CMS-HCC model and the code lists for defining the HCCs can be found here:
https://www.cms.gov/MedicareAdvtgSpecRateStats/06_Risk_adjustment.asp

A description of the development of the CMS-HCC model can be found here:
https://www.cms.gov/HealthCareFinancingReview/Downloads/04Summerpg119.pdf

2a1.14-16 Detailed Risk Model Available at Web page URL (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL**.** Please supply login/password if needed**:**
Attachment
PrelimRiskModel_EDandACH_Jan2012.pdf

2a1.17-18. Type of Score: Rate/proportion

2a1.19 Interpretation of Score *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*: Better quality = Lower score

2a1.20 Calculation Algorithm/Measure Logic*(Describe the calculation of the measure score as an ordered sequence of steps*

including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.):

1. Construct Home Health Stays from HH Claims (see 2a1.7 for details)
2. Identify numerator window (60 days following Stay_Start_Date) for each stay and exclude stays for patients who are not continuously enrolled in fee-for-service Medicare during the numerator window or until patient death.
3. Exclude stays that begin with a LUPA or that involve a provider change during the numerator window
4. Link stays to enrollment data by beneficiary.
5. Exclude stays for patients who are not continuously enrolled in fee-for-service Medicare during the 6 months prior to Stay_Start_Date.
6. Calculate demographic risk factors for each stay (age, gender, dual eligibility, etc.) using enrollment data.
7. Link to Part A and Part B claims for 6 months prior to Stay_Start_Date for each beneficiary
8. Calculate prior care setting indicators and HCCs.
9. Link to Inpatient (IP) claims from Short Stay and Critical Access hospitals for the numerator window (60 days following Stay_Start_Date)
10. Set Hospital Admission indicator (Hosp_Admit = 1) if any IP claims are linked to the stay in step 9. These stays are not included in the ED Use without Hospitalization measure numerator.
11. Link to Outpatient claims with revenue center codes indicating Emergency Department use for the numerator window (60 days following Stay_Start_Date).
12. Set Outpatient ED Use indicator (OP_ED = 1) if any outpatient claims are linked to the stay in step 11.
13. Flag stays for inclusion in the measure numerator (ED_noHosp = 1) if OP_ED =1 and NOT Hosp_Admit = 1.
14. Using coefficients from the multinomial logit risk model and risk factors calculated in steps 6 and 8, calculate the predicted probability of being included in the measure numerator for each stay (Pred_ED_noHosp). Additionally calculate the average of Pred_ED_noHosp across all stays that are included in the measure denominator (not excluded in steps 3 or 5) and call this value National_pred_ED.
15. Calculate observed and risk-adjusted rates for each home health agency (Initial_Provider):

a. Calculate the observed rate of Emergency Department Use without Hospitalization as the fraction all (non-excluded) HH Stays with that agency as Initial_Provider that are also included in the measure numerator (ED_noHosp = 1). Call the value Agency_obs_ED.

b. Calculate the agency predicated rate of Emergency Department use without Hospitalization by taking the average of Pred_ED_noHosp across all (non-excluded) stays with that agency as Initial_Provider. Call this value Agency_pred_ED.

c. Calculate the risk adjusted rate of Emergency Department use without Hospitalization using the following formula: Agency_riskadj_ED = National_pred_ED + (Agency_obs_ED – Agency_pred_ED)

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:
URL
ALGORITHM IS INCLUDED IN 2a1.20

2a1.24 Sampling (Survey) Methodology. If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):
NA - not based on a survey or sample

2a1.25 Data Source *(Check all the sources for which the measure is specified and tested*). If other, please describe:
Administrative claims

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): Denominator: Medicare Home Health Claims
Numerator: Medicare Inpatient and Outpatient Claims
Exclusions: Medicare Home Health Claims, Medicare Enrollment Data
Risk Factors: Medicare Enrollment Data, Medicare Part A & B Claims

URLS:
Identification of ED visits: http://www.resdac.org/Tools/TBs/TN-003_EmergencyRoominClaims_508.pdf

Identification of Short Term Hospitals: https://www.cms.gov/transmittals/downloads/R29SOMA.pdf

General Medicare Data Documentation: http://www.resdac.org/ddvh/index.asp

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment: URL
SEE URLs IN 2a1.26.

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:
URL
Claims: http://www.resdac.org/ddvh/dd_via2.asp Enrollment: http://www.resdac.org/ddde/dd_de.asp

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Facility

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: Home Health

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability*.)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
All agencies with at least 20 home health stays beginning between 1/1/2010 and 12/31/2010 were included in the reliability analysis, because only information for agencies with at least 20 episodes is publicly reported. Of the 10,125 agencies with any home health stays in 2010, 8,567 agencies met the threshold for the Emergency Department Use without Hospitalization measure. For the national analysis, a beta-binomial distribution was fitted using all agencies. For the HHR (hospital referral region) analysis described below, separate beta-binomials were fitted for each of 306 HHRs, using only those agencies in the HHR. It is worth noting that even the agencies that are in HRRs with only two agencies have high reliability scores, because these small HRR agencies tend to service many home health patients relative to the rest of the country.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
Reliability analysis of this measure follows the beta-binomial method described in "The Reliability of Provider Profiling: A Tutorial" by John L. Adams. The beta-binomial method was developed for provider level measures reported as rates, and it allows one to calculate an agency level "reliability score," interpreted as the percent of variance due to the difference in measure score among providers. Thus, a reliability score of .80 signifies that 80% of the variance is due to differences among providers, and 20% of the variance is due to measurement error or sampling uncertainty. A high reliability score implies that performance on a measure is unlikely to be due to measurement error or insufficient sample size, but rather due to true differences between the agency and other agencies. Each agency receives an agency specific reliability score which depends on both agency size, agency performance on the measure, and measure variance for the relevant comparison group of agencies.
In addition to calculating reliability scores at the national level, we also calculated agency reliability scores at the level of hospital referral regions (HRRs), because the HRR grouping more adequately captures the types of comparisons health care consumers are likely to make. HRRs are region designations determined in the Dartmouth Atlas of Health Care study, and they represent regional health care markets for tertiary medical care that generally requires the service of a major referral center. They are aggregated hospital service areas (HSAs) and thus aggregated local health care markets. The HRRs are used to determine categories of sufficient size to make comparisons while still capturing the local set of HHA choices available to a beneficiary.
Reference: Adams, John L. The Reliability of Provider Profiling: A Tutorial. Santa Monica, CA: RAND Corporation, 2009. http://www.rand.org/pubs/technical_reports/TR653.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Distribution of Within National Reliability Scores

Mean	0.770
Min	0.182
10th	0.503
25th	0.666
Median	0.818
75th	0.911
90th	0.957

Max 1.000

The distribution of national reliability scores (percent of variance due to the difference in measure score among providers at the national level) shows that the majority of agencies have a reliability score greater than 0.818, implying that their performance can likely be distinguished from other agencies (i.e., performance on this measure is unlikely to be due to measurement error or insufficient sample size, but is instead due to true differences between the agency and other agencies as it substantially exceeds within agency variation).

Distribution of Within HHR Reliability Scores

Mean 0.674
Min 0.030
10th 0.373
25th 0.528
Median 0.709
75th 0.845
90th 0.918
Max 1.000

The distribution of HRR reliability scores (percent of variance due to the difference in measure score among providers at the HRR level) for this measure also shows that at least 50% of agencies have a reliability score greater than 0.709, suggesting that between agency variation substantially exceeds within agency variation even at the HRR level.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* **are consistent with the evidence cited in support of the measure focus (***criterion 1c)* **and identify any differences from the evidence:**

CMS chose to respecify the Emergency Department Use without Hospitalization measure with Medicare claims data to enhance the validity and reliability of this measure. The measure population is limited to fee-for-service (FFS) Medicare beneficiaries, ensuring that Medicare claims are filed for emergency department services the beneficiary receives. The measure numerator is a broad measure of utilization (Emergency Department Use) that can be cleanly identified using claims data. Because claims form the basis of Medicare payments, CMS invests significant resources in validating claims submissions prior to payment.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)***:**

As CMS audits a sample of claims for Part B services (including outpatient emergency department visits) as part of annual payment error calculations, additional validity testing of measure elements has not been conducted. The annual payment error calculation for 2010 involved a sample of Medicare claims that were then compared to medical records and included 31,766 claims Part B (and an additional 2,454 claims for Acute Inpatient Hospitalizations).

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)***:**

Review of 2010 Medicare CERT Report. Available at:
https://www.cms.gov/CERT/Downloads/Medicare_FFS_2010_CERT_Report.pdf

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)***:**

Of the sampled Part B claims, the patient record could not be found for 801 (or 0.2%) claims. It is possible that an extremely small fraction of claims represent care that did not occur, but this problem is clearly not widespread. 12.9% had some type of payment error with the bulk of these errors coming from insufficient documentation. It is possible that in some of these cases, reviewers could not determine that emergency department services were utilized or were medically necessary.

While the CERT report calculates the fraction of claims impacted by payment errors only for broad categories of payments and not by clinical setting, it does project the amount of improper payments by both type of error and clinical setting. The report estimates that $1.97 billion of improper payments to hospital outpatient departments resulted from insufficient documentation and $2.64 billion in payment errors resulted from any cause. For comparison, in 2009, total Medicare spending on hospital outpatient services was $34 billion. Thus errors impact only 7.7% of hospital outpatient payments.

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)***:**
All home health stays (constructed from Medicare HH claims for Medicare certified HH agencies) beginning in 2010. Prior to applying exclusions, there were 3,069,749 such stays.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)***:**
Frequencies. Exclusion criteria are based on either data requirements for calculating the measure (continuous enrollment in fee-for-service Medicare) or clear attribution of the measure to the home health agency (LUPAs and change of provider).

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
126,480 stays (4%) were excluded because the patient was not continuously enrolled in fee-for-service Medicare during the numerator window (60 days after Stay_Start_Date) or until death.
275,342 stays (9%) were excluded because the first claim in the stay was a LUPAs.
37,733 stays (1%) were excluded because the beneficiary changed agencies during the numerator window.
116,757 stays (4%) were excluded because the patient was not continuously enrolled in fee-for-service Medicare for six month look-back period used to calculate HCCs.

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)***:**
The first home health stay in 2010 for each patient (2,289,530 stays total) were used to calibrate the multinomial logit model and to estimate counterfactuals. Subsequent stays were excluded to avoid overweighting characteristics of patients with multiple home health stays.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)***:**
Calculation of counterfactuals to show impact of each risk factor. Each risk factor has an associated counterfactual value that can be interpreted as the population value of the measure if all patients in the population had the risk factor but had the observed distribution of all other risk factors. The percentage difference between the counterfactual and the true population value shows the relative impact of each risk factor on the outcome.
Please note the measure is specified currently for a basic risk adjustment model that uses risk factors from the Medicare Advantage risk adjustment model. The measure developer is currently comparing various approaches to risk adjusting this measure. Specifically, the developer is examining the impact of using information collected at the beginning of home health stays via the OASIS assessment as part of the risk model. Competing models will be compared to this basic model using goodness-of-fit statistics and clinicians will review the final set of risk factors. The risk model will be finalized in Spring 2012, prior to the first public reporting of this measure.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)***:**
Among first HH stays in 2010, the population average for Emergency Department Use without Hospitalization was 10.2%. If the counterfactual for a risk factor is greater than 10.2%, then that risk factor is associated with higher rates of ED use. If it is lower than 10.2% then that risk factor is associated with lower rates of ED use.
Prior Care Setting
Community 10.2% (same as population avg)
Inpatient, 0-3 days 11.3% (11.3% higher than population avg)
Inpatient, 4-8 days 10.3% (1.3% higher)
Inpatient, 9+ days 10.2% (same)

Skilled Nursing, 0-13 days 10.0% (2.0% lower)
Skilled Nursing, 14-41 days 9.5% (6.9% lower)
Skilled Nursing, 42+ days 10.1% (1.1% lower)

Home health patients with a prior short hospital stay are relatively more likely to use the emergency room while patients who spend 2 to 6 weeks in a skilled nursing facility prior to entering home health are relatively less likely. These differences likely represent differences in planning of care transitions; time since the most recent shift in the patient's health status, and possibly differences in functional needs of the patients not captured elsewhere in the model.

Age-Gender Interaction

<65, Female	13.7%	(34.3% higher)
<65, Male	11.7%	(14.4% higher)
65-75, Female	9.5%	(6.5% lower)
65-75, Male	9.0%	(11.7% lower)
75-85, Female	9.8%	(3.4% lower)
75-85, Male	9.3%	(8.7% lower)
85+, Female	10.5%	(3.2% higher)
85+, Male	10.3%	(1.5% higher)

The oldest old (85+) and the disabled (<65) are more likely to seek care in the emergency department than are patients between 65 and 84. This potentially reflects increased frailty of the oldest old and differences in caregiver preference. For all age categories, women are slightly more likely to use the emergency room than are men, potentially due to differences in patient and caregiver preferences.

Dual Status 11.3% (10.5% higher)
Patients with both Medicare and Medicaid are more likely to use the emergency department than patients with only Medicare. This may reflects differences in usual source of care between dual eligibles and non-dual eligibles, differences in cost sharing for emergency department use, and may also capture differences in health status and functional status not captured by the 6 month HCCs.
HCCs – due to space constraints, counterfactuals for all HCCs are not reported.

However, we find that patients with mental health HCCs have elevated rates of HCC use.

Drug/Alcohol Psychosis	12.7%	(24.6% higher)
Drug/Alcohol Dependence	13.1%	(28.9% higher)
Schizophrenia	13.1%	(28.5% higher)
Major Depressive, Bipolar, Paranoid	12.1%	(18.5% higher)

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment:

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)***:**
Medicare certified agencies with at least 20 home health stays beginning between 1/1/2010 and 12/31/2010 and meeting the measure denominator criteria. There were 8,567 such agencies (85% of the 10,125 agencies with at least one stay beginning in 2010). The average size agency had 248 home health stays included in the measure numerator, while the median size agency had 102 home health stays.

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)***:**
The distribution risk-adjusted agency rates was analyzed to determine the inter-quartile range and the 90th vs. 10th percentile differences.

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

Risk Adjusted Agency Rate Distribution:

Mean	10.0%
Std. Dev.	4.3%
Min	0.0%
10%	4.6%
25%	7.3%
50%	10.0%
75%	12.6%
90%	15.3%
Max	34.8%

Inter-quartile range (75th – 25th) = 12.6 – 7.3 = 5.3%

90th – 10th percentile = 15.3 – 4.6 = 10.7%

An agency at the 75th percentile has a risk-adjusted rate of Emergency Department Use without Hospitalization that is nearly double that of an agency at the 25th percentile, while an agency at the 90th percentile have 3 times the rate of hospitalization of an agency at the 10th percentile.

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)***:**

NA - single data source

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)***:**

NA - single data source

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)***:**

NA - single data source

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)***:** NA - no stratification

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:

NA

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?
(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. **(evaluation criteria)**

C.1 **Intended Purpose/ Use** *(Check all the purposes and/or uses for which the measure is intended)***:** Public Reporting, Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3.1 **Current Use** *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Public Reporting, Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3a. Usefulness for Public Reporting: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for public reporting.*)

3a.1. **Use in Public Reporting - disclosure of performance results to the public at large** *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: **[*For Maintenance* –** *If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.***]**
The previously endorsed version of this measures (calculated using OASIS data) is currently publicly reported on Medicare Home Health Compare and CMS intends to begin reporting Acute Care Hospitalization using claims data in mid 2012.

3a.2.**Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting**. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results**:** The measure informs the public about the quality of care provided by the home health agency as measured by acute care hospitalization during the first 60 days of the home health stay.
The CMS Center for Medicare contracted with L&M Policy Research (L&M) to help ensure that measures on the Home Health Compare (HHC) website are easy to understand and meet the needs of consumers.
L&M possesses extensive knowledge of public health care issues and is experienced in qualitative and quantitative research methods and health services management and operations, including health communications. L & M also has plain language experts that are skilled in crafting straightforward language that allows CMS to provide beneficiaries, caregivers, health care professionals, and information intermediaries a better understanding of information on choice tools, such as HHC, which allows for more informed decisions on health related issues.
L&M's work during 2009-2010 with CMS includes an environmental scan of home health public reporting initiatives and a literature review of published and unpublished research relating to consumers' comprehension and use of home health quality measures.
L&M independently convened its external advisory workgroup, comprised of representatives of consumer advocacy organizations, professional associations, quality improvement professionals, and experts in public reporting, to provide guidance on the organization, content, and usability of the home health measures website.

3.2 **Use for other Accountability Functions (payment, certification, accreditation).** If used in a public accountability program, provide name of program(s), locations, Web page URL(s)**:**

3b. Usefulness for Quality Improvement: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for quality improvement.*)

3b.1. **Use in QI.** If used in quality improvement program, provide name of program(s), locations, Web page URL(s):
[*For Maintenance* – *If not used for QI, indicate the reasons and describe progress toward using performance results for improvement***]**.
This measure will be reported on the Medicare Quality Improvement: Home Health Quality Initiatives website https://www.cms.gov/HomeHealthQualityInits/01_Overview.asp#TopOfPage

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated *(e.g., QI initiative),* describe the data, method and results:
Data on the proportion of home health stays with associated emergency department use provides agencies with a tool to evaluate the quality of their care and investigate how changes to processes of care impact patient outcomes related to resource use.

Overall, to what extent was the criterion, *Usability*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. **(evaluation criteria)**

4a. Data Generated as a Byproduct of Care Processes: H☐ M☐ L☐ I ☐

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*
Data used in the measure are**:**
generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition

4b. Electronic Sources: H☐ M☐ L☐ I ☐

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields)***:** ALL data elements in electronic claims

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H☐ M☐ L☐ I ☐

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:
A key issue in using this measure to accurately identify performance at the home health agency level regards attribution. Two decisions were made to assure proper attribution. First, the numerator window was synchronized to the length of home health prospective payment episodes (60 days) and home health stays beginning with low utilization payment episodes were excluded. This means that stays included in the measure were those in which the HHA was paid to provide appropriate home health care to the patient during the measurement period. Second, stays in which the patient changed home health providers during the numerator window were also excluded from measurement. Although provider switches often follow acute care utilization (ED use or hospitalization) and may reflect patient or caregiver dissatisfaction with the initial provider, we chose to exclude all HH stays with multiple providers during the numerator window. This ensures that agencies that do not have sufficient time to impact a patient's health are not penalized for that patient's outcomes.

4d. Data Collection Strategy/Implementation: H☐ M☐ L☐ I ☐

A.2 Please check if either of the following apply (*regarding proprietary measures*)**:**
4d.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues *(e.g., fees for use of proprietary measures)***:**
Implementing claims-based measures such as this one requires extensive familiarity with Medicare claims and enrollment data. Because multiple types of claims are used, beneficiaries must be linked across claim types and enrollment files. Additionally, different types of claims suffer from different submission lags. Thus it is important to use the most up-to-date claims data possible in calculating claims based measures. For public reporting, this measure will be updated quarterly on a rolling basis. While the latest quarter in the observation window may have slightly lower rates of ED use without Hospitalization, due to claims delay, these events will be captured in the next quarterly update.

Overall, to what extent was the criterion, *Feasibility*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes☐ No☐
Rationale:

If the Committee votes No, STOP.
If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND COMPETING MEASURES

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure before a final recommendation is made.

5.1 If there are related measures *(either same measure focus or target population)* or competing measures *(both the same measure focus and same target population*), list the NQF # and title of all related and/or competing measures:
0171 : Acute care hospitalization (risk-adjusted)

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized? Yes

5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:

5b. Competing Measure(s)

5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s): Describe why this measure is superior to competing measures *(e.g., a more valid or efficient way to measure quality)***; OR provide a rationale for the additive value of endorsing an additional measure.** *(Provide analyses when possible)*:

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.2 Point of Contact: Robin, Dowell, BSN, robin.dowell@cms.hhs.gov, 410-786-0060-

Co.3 Measure Developer if different from Measure Steward: Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, Maryland, 21244

Co.4 Point of Contact: Robin, Dowell, Robin.Dowell@CMS.hhs.gov, 410-786-6738-

Co.5 Submitter: Keziah, Cook, kcook@acumenllc.com, 410-786-6738-, Centers for Medicare & Medicaid Services

Co.6 Additional organizations that sponsored/participated in measure development:
Abt Associates, Inc.
Case Western Reserve University
University of Colorado at Denver, Division of Health Care Policy and Research

Co.7 Public Contact: Robin, Dowell, BSN, robin.dowell@cms.hhs.gov, 410-786-0060-, Centers for Medicare & Medicaid Services

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward:

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 Year the measure was first released: 2010

Ad.4 **Month and Year of most recent revision:** 12, 2011 Ad.5 **What is your frequency for review/update of this measure?** Annual Ad.6 **When is the next scheduled review/update for this measure?** 09, 2012
Ad.7 **Copyright statement:**
Ad.8 **Disclaimers:**
Ad.9 **Additional Information/Comments:**
Date of Submission (*MM/DD/YY*)**:** 01/13/2012

Preliminary Risk Adjustment Model for Home Health Claims-Based Utilization Measures

Acumen, LLC **Jan-12**

Method:	Multinomial Logit with three mutually exclusive outcomes: No event, ED Use without Hospitalization, and Acute Care Hospitalization
Risk factors:	
Prior Care Setting	Where the beneficiary received care immediately prior to beginning the home health stay. Variables are defined by examining Medicare institutional claims for the 30 days prior to Stay_Start_Date. Categories are Community (no Inpatient or Skilled Nursing Claims), Inpatient stay of 0-3 days, Inpatient stay of 4-8 days, Inpatient more than 9 days, Skilled Nursing stay of 0-13 days, Skilled Nursing stay of 14-41 days, and Skilled Nursing stay of 42+ days. A patient cared for in both a skilled nursing facility and an inpatient hospital during the 30 days prior to starting home health care is included in the skilled nursing categories not the inpatient categories. The length of stay is determined from the last inpatient or skilled nursing stay prior to beginning home health care.
Age and Gender Interactions	Age categories are <65, 65-74, 75-84, 85+ and are determined based on the patient's age at Stay_Start_Date.
Dual (Medicare/Medicaid) eligibility	A beneficiary with at least one month of Medicaid enrollment in the 6 months prior to Stay_Start_Date is considered dual eligible.
CMS Hierarchical condition categories (HCCs)	HCCs were developed for the risk adjustment model used in determining capitation payments to Medicare Advantage plans and are calculated using Part A and B Medicare claims. While the CMS-HHC model uses a full year of claims data to calculate HCCs, for these measures, we use only 6 months of data to limit the number of home health stays excluded due to missing HCC data. (HCC codes list are available here: https://www.cms.gov/MedicareAdvtgSpecRateStats/06_Risk_adjustment.asp
Data used for Calibration:	First home health stays in 2010 that meet measure denominator criteria are included.
Interpretation of Counterfactuals:	Counterfactuals are calculated by simulating a population in which all patients have the indicated risk factor (e.g. All patients enter HH care from the community, all patients are males over 85, etc.) but have the observed distribution of other risk factors. If a risk factor's counterfactual rate for an outcome is higher than the observed rate of that outcome, then the risk factor is associated with a greater probabilty of the outcome.

Enrollment requirement: Continuous enrollment in A/B/FFS and alive for entire home health episode (or until death) as well as the 6 months prior to the episode
Only beneficiaries' first HH episode of 2010 are included
Beneficiaries who switched providers within the 60-day window are excluded

Study Average		Population Size		Probability of Outcome		Probability of Outcome		Probability of Outcome	
				No Acute Event		Emergency Department Use without Hospitalization		Acute Care Hospitalization	
No Controls (Study Average)		2,289,530		71.1%		10.2%		18.7%	
Control Variables		Population Size (%)		Probability of Outcome	Percent Change from Study Average	Probability of Outcome	Percent Change from Study Average	Probability of Outcome	Percent Change from Study Average
				No Acute Event		Outpatient ER		Hospitalization	
Prior Care Setting	Community	855,654	37.4%	74.2%	4.2%	10.2%	0.2%	15.6%	-16.3%
	Inpatient, 0-3 days	180,512	7.9%	70.2%	-1.3%	11.3%	11.3%	18.5%	-1.2%
	Inpatient, 4-8 days	572,347	25.0%	69.6%	-2.1%	10.3%	1.3%	20.1%	7.4%
	Inpatient, 9+ days	216,658	9.5%	64.4%	-9.4%	10.2%	0.4%	25.4%	35.7%
	Skilled Nursing, 0-13 days	107,886	4.7%	71.6%	0.6%	10.0%	-2.0%	18.4%	-1.4%
	Skilled Nursing, 14-41 days	243,958	10.7%	72.1%	1.3%	9.5%	-6.9%	18.5%	-1.2%
	Skilled Nursing, 42+ days	112,515	4.9%	70.9%	-0.4%	10.1%	-1.1%	19.1%	2.1%
Age-Gender Interaction	<65, Female	148,645	6.5%	67.1%	-5.7%	13.7%	34.3%	19.2%	2.9%
	<65, Male	121,997	5.3%	69.6%	-2.2%	11.7%	14.4%	18.8%	0.5%
	65-75, Female	341,912	14.9%	73.5%	3.3%	9.5%	-6.5%	17.0%	-9.1%
	65-75, Male	228,285	10.0%	73.1%	2.7%	9.0%	-11.7%	17.9%	-3.9%
	75-85, Female	516,968	22.6%	72.2%	1.5%	9.8%	-3.4%	18.0%	-3.8%
	75-85, Male	293,463	12.8%	71.4%	0.3%	9.3%	-8.7%	19.3%	3.6%
	85+, Female	446,921	19.5%	69.9%	-1.8%	10.5%	3.2%	19.6%	5.1%
	85+, Male	191,339	8.4%	68.7%	-3.5%	10.3%	1.5%	21.0%	12.3%
Dual Status		591,308	25.8%	69.4%	-2.5%	11.3%	10.5%	19.4%	3.8%
HCC (6-month lookback)	HIV/AIDS	7,112	0.3%	69.7%	-2.0%	10.3%	1.3%	20.0%	7.1%
	Septicemia/Shock	124,964	5.5%	70.6%	-0.7%	9.8%	-3.8%	19.6%	4.8%
	Opportunistic Infections	15,158	0.7%	67.6%	-5.0%	10.0%	-1.8%	22.4%	19.9%
	Metastatic Cancer and Acute Leukemia	76,657	3.3%	60.1%	-15.4%	10.8%	5.8%	29.1%	55.7%
	Lung/Upper Digestive/Oth Sev Cancer	44,864	2.0%	65.1%	-8.5%	10.8%	6.2%	24.1%	28.8%
	Lymphatic/Head/Neck/Brain/Maj Cancer	54,148	2.4%	66.8%	-6.0%	10.4%	2.3%	22.7%	21.7%
	Breast/Prostate/Colorectal/Oth Cancer	182,580	8.0%	71.4%	0.4%	10.0%	-1.4%	18.6%	-0.6%
	Diabetes with Renal Manifestation	162,082	7.1%	68.6%	-3.5%	10.4%	2.5%	20.9%	12.1%
	Diabs w/ Neurol/Periph Circ Manifest	144,426	6.3%	68.9%	-3.2%	10.9%	7.4%	20.2%	8.0%
	Diabetes with Acute Complications	6,830	0.3%	71.0%	-0.2%	11.1%	9.3%	17.9%	-4.2%
	Diab w/ Ophthalmologic Manifestation	38,900	1.7%	71.0%	-0.2%	10.3%	0.8%	18.7%	0.2%
	Diabetes w/ No/Unspecified comp	451,893	19.7%	71.1%	-0.1%	10.3%	1.5%	18.6%	-0.6%
	Protein-Calorie Malnutrition	123,886	5.4%	69.1%	-2.8%	10.4%	2.1%	20.5%	9.6%
	End-Stage Liver Disease	16,279	0.7%	61.9%	-13.0%	10.4%	1.8%	27.7%	48.4%
	Cirrhosis of Liver	15,612	0.7%	67.2%	-5.5%	10.4%	2.2%	22.3%	19.6%
	Chronic Hepatitis	9,704	0.4%	67.4%	-5.3%	11.9%	16.5%	20.8%	11.2%
	Intestinal Obstruction/Perforation	114,993	5.0%	70.4%	-1.0%	10.5%	2.7%	19.1%	2.4%
	Pancreatic Disease	53,385	2.3%	67.5%	-5.1%	11.1%	9.3%	21.4%	14.4%
	Inflammatory Bowel Disease	25,504	1.1%	68.4%	-3.9%	10.3%	1.2%	21.3%	14.1%
	Bone/Joint/Muscle Infect/Necrosis	65,439	2.9%	70.1%	-1.5%	9.8%	-3.5%	20.1%	7.7%
	Rheum Arthritis/Inflam Conn Tissue	153,324	6.7%	69.3%	-2.6%	10.9%	7.3%	19.8%	6.0%
	Severe Hematological Disorders	49,171	2.1%	66.9%	-6.0%	10.2%	0.2%	22.9%	22.8%
	Disorders of Immunity	30,619	1.3%	68.4%	-3.9%	9.9%	-2.5%	21.7%	16.2%
	Drug/Alcohol Psychosis	32,298	1.4%	68.4%	-3.8%	12.7%	24.6%	18.9%	1.0%
	Drug/Alcohol Dependence	28,223	1.2%	65.6%	-7.8%	13.1%	28.9%	21.3%	14.0%
	Schizophrenia	36,206	1.6%	68.8%	-3.3%	13.1%	28.5%	18.1%	-2.9%
	Major Depressive, Bipolar, Paranoid	157,827	6.9%	68.5%	-3.7%	12.1%	18.5%	19.4%	3.9%
	Quadriplegia, Oth Extens Paralysis	11,933	0.5%	69.3%	-2.6%	10.8%	6.4%	19.9%	6.4%
	Paraplegia	11,731	0.5%	69.0%	-3.1%	10.4%	2.3%	20.6%	10.3%
	Spinal Cord Disorders/Injuries	30,225	1.3%	69.5%	-2.2%	11.2%	9.7%	19.3%	3.2%
	Muscular Dystrophy	2,198	0.1%	72.4%	1.7%	9.9%	-3.0%	17.8%	-4.9%
	Polyneuropathy	223,853	9.8%	70.2%	-1.3%	10.7%	5.3%	19.1%	2.0%
	Multiple Sclerosis	17,916	0.8%	70.7%	-0.6%	10.1%	-1.0%	19.2%	2.8%
	Parkinson's and Huntington's Disease	79,958	3.5%	68.0%	-4.4%	12.5%	22.8%	19.5%	4.3%
	Seizure Disorders and Convulsions	111,219	4.9%	66.9%	-6.0%	12.1%	18.8%	21.0%	12.5%
	Coma, Brain Compression/Anoxic Damage	16,237	0.7%	69.2%	-2.8%	10.7%	5.5%	20.1%	7.6%
	Resp Depend/Tracheostomy Status	20,480	0.9%	71.4%	0.4%	10.6%	4.4%	17.9%	-4.0%
	Respiratory Arrest	4,438	0.2%	71.0%	-0.1%	10.1%	-1.2%	18.9%	1.1%
	Cardio-Respiratory Failure and Shock	305,753	13.4%	70.3%	-1.2%	10.1%	-0.9%	19.6%	4.9%
	Congestive Heart Failure	681,279	29.8%	68.4%	-3.9%	10.3%	0.9%	21.3%	14.2%
	Acute Myocardial Infarction	85,981	3.8%	67.7%	-4.8%	11.1%	9.2%	21.2%	13.4%
	Unstable Angina/Oth ac Ischemic Heart	90,631	4.0%	68.0%	-4.3%	11.7%	14.8%	20.3%	8.5%
	Angina Pectoris/Old Myocardial Infect	173,622	7.6%	69.1%	-2.9%	11.3%	11.3%	19.6%	4.8%
	Specified Heart Arrhythmias	609,571	26.6%	69.5%	-2.2%	10.6%	4.4%	19.8%	6.1%
	Cerebral Hemorrhage	36,439	1.6%	69.5%	-2.3%	11.3%	11.0%	19.2%	2.8%
	Ischemic or Unspecified Stroke	207,955	9.1%	69.9%	-1.8%	11.0%	8.1%	19.1%	2.3%
	Hemiplegia/Hemiparesis	85,960	3.8%	70.2%	-1.3%	10.7%	5.2%	19.1%	2.2%
	Cerebral Palsy, Other Paralytic Syndromes	10,318	0.5%	71.9%	1.0%	10.6%	4.5%	17.5%	-6.4%
	Peripheral Vascular Disease with Complications	134,059	5.9%	68.2%	-4.1%	10.7%	5.1%	21.1%	12.8%
	Peripheral Vascular Disease	540,283	23.6%	70.8%	-0.4%	10.3%	1.5%	18.8%	0.7%
	Cystic Fibrosis	610	0.0%	69.1%	-2.9%	8.6%	-15.7%	22.3%	19.4%
	chron Obstructive Pulmonary Disease	596,802	26.1%	68.5%	-3.8%	10.6%	4.5%	20.9%	11.9%
	Aspiration/Spec Bacterial Pneumonias	67,194	2.9%	70.6%	-0.8%	10.4%	1.9%	19.1%	2.1%
	Pneumococcal Pneumonia/Empyema/Lung Abc	24,192	1.1%	71.0%	-0.3%	10.3%	1.3%	18.7%	0.3%
	Prolif Diab Retinop/Vitreous Hmrg	24,005	1.0%	69.9%	-1.7%	10.3%	1.1%	19.8%	5.8%
	Dialysis Status	31,882	1.4%	57.3%	-19.4%	12.3%	20.4%	30.4%	62.7%
	Renal Failure	507,686	22.2%	68.2%	-4.2%	10.4%	2.3%	21.4%	14.6%
	Nephritis	5,303	0.2%	69.2%	-2.7%	10.7%	5.1%	20.1%	7.4%
	Decubitus Ulcer of Skin	79,859	3.5%	68.0%	-4.5%	9.7%	-4.4%	22.3%	19.4%
	Chronic Ulcer of Skin, Exc Decubitus	104,206	4.6%	69.7%	-2.0%	9.6%	-5.7%	20.7%	10.8%
	Extensive Third-Degree Burns	249	0.0%	73.8%	3.8%	11.8%	16.2%	14.4%	-23.2%
	Severe Head Injury	1,096	0.0%	74.2%	4.4%	10.1%	-0.6%	15.6%	-16.3%
	Major Head Injury	37,999	1.7%	70.9%	-0.4%	11.3%	11.2%	17.8%	-4.6%
	Vertebral Fract w/out Spinal Cord Injury	79,565	3.5%	67.9%	-4.5%	11.4%	12.1%	20.6%	10.5%
	Hip Fracture/Dislocation	142,102	6.2%	75.8%	6.6%	9.4%	-7.3%	14.8%	-21.0%
	Traumatic Amputation	8,325	0.4%	71.4%	0.4%	9.4%	-7.6%	19.1%	2.5%
	Maj Comp of Medical Care/Trauma	201,680	8.8%	70.0%	-1.6%	10.8%	5.8%	19.2%	3.0%
	Major Organ Transplant Status	7,477	0.3%	68.5%	-3.7%	9.3%	-8.9%	22.2%	18.8%
	Artif Opens for Feeding/Elimination	41,491	1.8%	66.3%	-6.9%	11.7%	14.7%	22.1%	18.1%
	Amput Status/Lower Limb/Amput Compl	18,242	0.8%	68.2%	-4.1%	10.3%	1.1%	21.5%	15.0%

Multinomial Logistic	Outcome 1 = ER Use without Hospitalization						Outcome 2 = Acute Care Hospitalization					
	Coef.	Std. Err	z	P>z	95% CI		Coef.	Std. Err	z	P>z	95% CI	
Prior Care Setting (omitted category: Community)												
Inpatient, 0-3 days	0.164	0.009	19.23	0	0.147	0.181	0.228	0.007	31.84	0	0.214	0.242
Inpatient, 4-8 days	0.079	0.006	12.99	0	0.067	0.091	0.323	0.005	66.09	0	0.313	0.332
Inpatient, 9+ days	0.153	0.009	17.14	0	0.135	0.170	0.647	0.006	99.81	0	0.634	0.659
Skilled Nursing, 0-13 days	0.016	0.011	1.37	0.17	-0.007	0.038	0.206	0.009	23.28	0	0.188	0.223
Skilled Nursing, 14-41days	-0.043	0.008	-5.06	0	-0.059	-0.026	0.200	0.007	30.58	0	0.187	0.213
Skilled Nursing, 42+ days	0.036	0.011	3.18	0.001	0.014	0.058	0.252	0.009	28.78	0	0.235	0.269
Age, Gender (omitted category: 65-74, Male)												
<65, Female	0.510	0.011	46.39	0	0.488	0.531	0.164	0.009	17.95	0	0.146	0.182
<65, Male	0.311	0.012	26.1	0	0.288	0.334	0.100	0.010	10.37	0	0.081	0.119
65-75, Female	0.050	0.010	5.28	0	0.032	0.069	-0.063	0.007	-8.71	0	-0.078	-0.049
75-85, Female	0.103	0.009	11.51	0	0.085	0.120	0.015	0.007	2.2	0.028	0.002	0.028
75-85, Male	0.059	0.010	5.95	0	0.039	0.078	0.104	0.007	14.22	0	0.090	0.118
85+, Female	0.204	0.009	22.05	0	0.186	0.223	0.142	0.007	20.05	0	0.129	0.156
85+, Male	0.206	0.011	18.81	0	0.184	0.227	0.230	0.008	28.01	0	0.214	0.246
Dual Eligible	0.177	0.005	32.73	0	0.166	0.187	0.088	0.004	20.15	0	0.080	0.097
HCCs												
HIV/AIDS	0.035	0.036	0.97	0.333	-0.036	0.106	0.094	0.030	3.13	0.002	0.035	0.153
Septicemia/Shock	-0.033	0.011	-3.16	0.002	-0.054	-0.013	0.062	0.007	8.34	0	0.047	0.076
Opportunistic Infections	0.037	0.028	1.34	0.181	-0.017	0.092	0.246	0.019	13.12	0	0.210	0.283
Metastatic Cancer and Acute Leukemia	0.244	0.013	19.01	0	0.219	0.270	0.670	0.009	76.79	0	0.653	0.687
Lung/Upper Digestive/Oth Sev Cancer	0.159	0.016	9.84	0	0.127	0.190	0.369	0.011	32.36	0	0.346	0.391
Lymphatic/Head/Neck/Brain/Maj Cancer	0.093	0.015	6.25	0	0.064	0.122	0.280	0.011	26.09	0	0.259	0.302
Breast/Prostate/Colorectal/Oth Cancer	-0.020	0.008	-2.37	0.018	-0.037	-0.003	-0.012	0.007	-1.79	0.074	-0.025	0.001
Diabetes with Renal Manifestation	0.068	0.010	7.16	0	0.050	0.087	0.172	0.007	24.43	0	0.159	0.186
Diabs w/ Neurol/Periph Circ Manifest	0.114	0.009	12	0	0.095	0.132	0.123	0.007	16.6	0	0.109	0.138
Diabetes with Acute Complications	0.092	0.038	2.39	0.017	0.016	0.167	-0.042	0.031	-1.36	0.174	-0.104	0.019
Diab w/ Ophthalmologic Manifestation	0.010	0.017	0.58	0.565	-0.024	0.044	0.004	0.014	0.32	0.748	-0.022	0.031
Diabetes w/ No/Unspecified comp	0.020	0.006	3.39	0.001	0.008	0.031	-0.007	0.005	-1.48	0.14	-0.016	0.002
Protein-Calorie Malnutrition	0.055	0.010	5.35	0	0.035	0.075	0.135	0.007	18.28	0	0.121	0.150
End-Stage Liver Disease	0.170	0.026	6.43	0	0.118	0.221	0.568	0.018	31.67	0	0.533	0.604
Cirrhosis of Liver	0.083	0.026	3.19	0.001	0.032	0.135	0.250	0.019	13	0	0.212	0.287
Chronic Hepatitis	0.213	0.030	7.08	0	0.154	0.272	0.171	0.025	6.71	0	0.121	0.220
Intestinal Obstruction/Perforation	0.040	0.011	3.77	0	0.019	0.060	0.038	0.008	4.85	0	0.022	0.053
Pancreatic Disease	0.150	0.014	10.52	0	0.122	0.178	0.203	0.011	19.17	0	0.182	0.224
Inflammatory Bowel Disease	0.056	0.021	2.67	0.008	0.015	0.097	0.183	0.015	11.9	0	0.153	0.213
Bone/Joint/Muscle Infect/Necrosis	-0.020	0.014	-1.39	0.164	-0.047	0.008	0.097	0.010	9.41	0	0.077	0.117
Rheum Arthritis/Inflam Conn Tissue	0.107	0.009	12.29	0	0.090	0.124	0.097	0.007	13.96	0	0.083	0.111
Severe Hematological Disorders	0.071	0.016	4.44	0	0.040	0.103	0.289	0.011	26.49	0	0.268	0.311
Disorders of Immunity	0.018	0.021	0.9	0.37	-0.022	0.059	0.203	0.014	14.63	0	0.176	0.230
Drug/Alcohol Psychosis	0.266	0.017	15.67	0	0.233	0.300	0.053	0.014	3.69	0	0.025	0.081
Drug/Alcohol Dependence	0.347	0.018	19.65	0	0.312	0.381	0.228	0.015	15.05	0	0.199	0.258
Schizophrenia	0.293	0.016	18.78	0	0.262	0.323	0.007	0.015	0.46	0.642	-0.023	0.037
Major Depressive, Bipolar, Paranoid	0.228	0.008	27.68	0	0.212	0.244	0.086	0.007	12.24	0	0.073	0.100
Quadriplegia, Oth Extens Paralysis	0.091	0.029	3.11	0.002	0.034	0.149	0.093	0.024	3.9	0	0.046	0.140
Paraplegia	0.057	0.030	1.9	0.057	-0.002	0.116	0.137	0.024	5.84	0	0.091	0.183
Spinal Cord Disorders/Injuries	0.118	0.019	6.38	0	0.082	0.155	0.058	0.015	3.9	0	0.029	0.088
Muscular Dystrophy	-0.049	0.069	-0.71	0.476	-0.184	0.086	-0.071	0.058	-1.21	0.225	-0.186	0.044
Polyneuropathy	0.074	0.008	9.57	0	0.058	0.089	0.039	0.006	6.39	0	0.027	0.050
Multiple Sclerosis	-0.004	0.024	-0.15	0.879	-0.051	0.044	0.035	0.021	1.68	0.092	-0.006	0.076
Parkinson's and Huntington's Disease	0.264	0.011	23.12	0	0.241	0.286	0.096	0.010	9.81	0	0.077	0.116
Seizure Disorders and Convulsions	0.253	0.010	26.33	0	0.234	0.272	0.200	0.008	24.94	0	0.184	0.216
Coma, Brain Compression/Anoxic Damage	0.085	0.025	3.35	0.001	0.035	0.134	0.108	0.019	5.6	0	0.070	0.146
Resp Depend/Tracheostomy Status	0.039	0.023	1.68	0.094	-0.007	0.084	-0.048	0.017	-2.76	0.006	-0.082	-0.014
Respiratory Arrest	-0.010	0.049	-0.21	0.832	-0.107	0.086	0.013	0.035	0.37	0.711	-0.056	0.082
Cardio-Respiratory Failure and Shock	0.003	0.007	0.46	0.643	-0.011	0.018	0.076	0.005	14.19	0	0.065	0.086
Congestive Heart Failure	0.070	0.006	12.47	0	0.059	0.081	0.278	0.004	64.92	0	0.269	0.286
Acute Myocardial Infarction	0.147	0.012	12.31	0	0.124	0.170	0.193	0.008	22.84	0	0.177	0.210
Unstable Angina/Oth ac Ischemic Heart	0.194	0.011	17.53	0	0.172	0.215	0.140	0.008	16.5	0	0.123	0.156
Angina Pectoris/Old Myocardial Infect	0.151	0.008	18.32	0	0.135	0.167	0.088	0.006	13.66	0	0.076	0.101
Specified Heart Arrhythmias	0.092	0.006	16.59	0	0.081	0.103	0.123	0.004	29.21	0	0.115	0.131
Cerebral Hemorrhage	0.132	0.019	6.91	0	0.095	0.170	0.055	0.016	3.54	0	0.025	0.086
Ischemic or Unspecified Stroke	0.107	0.008	13.16	0	0.091	0.123	0.047	0.006	7.3	0	0.035	0.060
Hemiplegia/Hemiparesis	0.068	0.012	5.6	0	0.044	0.092	0.039	0.010	3.98	0	0.020	0.058
Cerebral Palsy, Other Paralytic Syndromes	0.032	0.031	1.05	0.293	-0.028	0.093	-0.080	0.027	-2.96	0.003	-0.134	-0.027
Peripheral Vascular Disease with Complications	0.101	0.010	10.2	0	0.081	0.120	0.184	0.007	25.44	0	0.169	0.198
Peripheral Vascular Disease	0.025	0.005	4.63	0	0.015	0.036	0.016	0.004	3.83	0	0.008	0.025
Cystic Fibrosis	-0.139	0.139	-1	0.319	-0.411	0.134	0.217	0.097	2.23	0.026	0.026	0.407
chron Obstructive Pulmonary Disease	0.115	0.005	21.49	0	0.105	0.126	0.224	0.004	54.44	0	0.216	0.232
Aspiration/Spec Bacterial Pneumonias	0.029	0.014	2.11	0.035	0.002	0.055	0.031	0.010	3.19	0.001	0.012	0.051
Pneumococcal Pneumonia/Empyema/Lung Abc	0.015	0.022	0.71	0.476	-0.027	0.058	0.006	0.016	0.36	0.716	-0.025	0.036
Prolif Diab Retinop/Vitreous Hmrg	0.029	0.022	1.35	0.176	-0.013	0.072	0.078	0.016	4.74	0	0.046	0.110
Dialysis Status	0.422	0.018	22.84	0	0.386	0.458	0.754	0.013	56.16	0	0.728	0.780
Renal Failure	0.087	0.006	14.87	0	0.076	0.099	0.255	0.004	58.38	0	0.246	0.263
Nephritis	0.080	0.045	1.79	0.074	-0.008	0.167	0.104	0.035	2.97	0.003	0.035	0.173
Decubitus Ulcer of Skin	0.005	0.013	0.41	0.68	-0.020	0.030	0.245	0.009	26.98	0	0.227	0.262
Chronic Ulcer of Skin, Exc Decubitus	-0.038	0.011	-3.46	0.001	-0.060	-0.017	0.135	0.008	16.34	0	0.119	0.151
Extensive Third-Degree Burns	0.109	0.190	0.58	0.565	-0.263	0.481	-0.314	0.172	-1.82	0.068	-0.652	0.024
Severe Head Injury	-0.053	0.096	-0.56	0.578	-0.241	0.134	-0.231	0.082	-2.82	0.005	-0.391	-0.071
Major Head Injury	0.112	0.018	6.23	0	0.077	0.147	-0.045	0.015	-2.99	0.003	-0.075	-0.016
Vertebral Fract w/out Spinal Cord Injury	0.170	0.012	14.4	0	0.147	0.193	0.160	0.009	17.02	0	0.141	0.178
Hip Fracture/Dislocation	-0.155	0.010	-15.45	0	-0.174	-0.135	-0.334	0.008	-40.87	0	-0.350	-0.318
Traumatic Amputation	-0.084	0.038	-2.22	0.026	-0.158	-0.010	0.020	0.027	0.77	0.441	-0.032	0.073
Maj Comp of Medical Care/Trauma	0.081	0.008	9.95	0	0.065	0.097	0.053	0.006	8.66	0	0.041	0.065
Major Organ Transplant Status	-0.053	0.040	-1.32	0.187	-0.132	0.026	0.221	0.027	8.34	0	0.169	0.273
Artif Opens for Feeding/Elimination	0.218	0.016	13.33	0	0.186	0.250	0.256	0.012	20.93	0	0.232	0.280
Amput Status/Lower Limb/Amput Compl	0.057	0.025	2.27	0.023	0.008	0.106	0.193	0.018	10.74	0	0.158	0.228
Constant	-2.461	0.009	-277.58	0	-2.479	-2.444	-2.138	0.007	-309.77	0	-2.151	-2.124

ResDAC Research Data Assistance Center

How to Identify Emergency Room Services in the Medicare Claims Data

The Research Data Assistance Center (ResDAC) is a CMS contractor that provides free assistance to academic and non-profit researchers interested in using Medicare and/or Medicaid data for their research. ResDAC is staffed by a consortium of epidemiologists, public health specialists, health services researchers, biostatisticians, and health informatics specialists from the University of Minnesota.

TN-003
January 2003
Updated June 2008
Author: Kelly Merriman, Debra Caldwell

Regardless of whether a Medicare beneficiary seen in the emergency room (ER) is admitted to the hospital or not, the hospital submits the claim on a UB-92 form (CMS-1450) and it is processed by a Fiscal Intermediary (FI). However, emergency room claims are found in two Medicare data files, depending on whether the Medicare beneficiary was admitted, or not admitted, to the hospital within a *'specified time period'.

For those Medicare beneficiaries seen in the ER, but NOT admitted to the hospital, services appear in CMS's Outpatient Standard Analytical File (SAF). To find these claims in the Outpatient SAF, use revenue center code values of 0450-0459 and 0981.

Claims for those Medicare beneficiaries seen in the ER AND admitted to the hospital appear in CMS's Inpatient SAF (or MedPAR File). To find these claims, use revenue center code values of 0450-0459 and 0981. The diagnostic emergency room details are put on the inpatient claim.

Other charges associated with emergency rooms, including labs, non-staff physicians, and radiologists may be billed using form CMS-1500. These Emergency rooms services can be identified in CMS's Carrier SAF by Place of Service code (23=Emergency room-hospital) and/or HCPCS codes associated with ER use (e.g., 99281, 99282, 99283, 99284, 99285).

In summary, emergency room care is found in both the Medicare Outpatient and Inpatient (or MedPAR File) SAF, depending on admission status. In order to find all emergency room visits it is necessary to have both files.

* The 'specified time period' varies among fiscal intermediaries. For example, according to the Minnesota Fiscal Intermediary the 'specified time period' is 23 hours, but according to the FI provider manuals it can be within 3 days of the ER visit for PPS hospitals and within one day of ER visit for non-PPS hospitalizations.

If you have any questions or comments, ResDAC staff can be contacted at 1-888-ResDAC or resdac@umn.edu

Internet Citation:

How to Identify Emergency Room Services in the Medicare Claims Data. Technical Brief, ResDAC Publication Number TN-003, January 2003, Updated June 2008. Research Data Assistance Center, University of Minnesota, Minneapolis, MN. http://www.resdac.umn.edu.

Technical Document authored by Kelly Merriman and Debra Caldwell, ResDAC staff.

The analyses upon which this publication is based were performed under Contract Number 500-01-0043, entitled, “Research Data Assistance Center (ResDAC)”, sponsored by CMS, Department of Health & Human Services.

Medicare Fee-For-Service
2010 Improper Payment Report

FOREWORD

The 2010 Medicare Fee-for-Service (FFS) improper payment rate of 10.5 percent, as published in the 2010 Medicare FFS Improper Payment Rate Report, represented $34.3 billion in improper payments. However, the 2010 published rate does not include the late documentation/appeals adjustment that was introduced during the 2011 report period. Information on the 2011 Medicare FFS improper payment rate and the late documentation/appeals adjustment will be presented in the 2011 Medicare FFS Improper Payment Rate Report.

Medicare Fee-For-Service
2010 Improper Payment Report

EXECUTIVE SUMMARY

The Improper Payments Information Act (IPIA) of 2002, amended by the Improper Payments Elimination and Recovery Act (IPERA) of 2010 , requires the heads of Federal agencies, including the Department of Health and Human Services (HHS) to annually review programs it administers to:

- Identify programs that may be susceptible to significant improper payments,
- Estimate the amount of improper payments in those programs that are determined to be susceptible to significant improper payments,
- Submit those estimates to Congress, and
- Describe the actions the Agency is taking to reduce improper payments in those programs.[1]

The Centers for Medicare & Medicaid Services (CMS) has identified the Medicare Fee-for-Service (FFS) program as a program at risk for significant erroneous payments. In 2010, the Medicare FFS paid claims error rate was 10.5 percent, or $34.3 billion in improper payments. In 2010, CMS continued to review claims according to a significantly revised and improved methodology implemented in 2009. As a result of these improvements and a more complete accounting of improper payments, the 2009 and 2010 overall error rates were higher than the 2008 improper payment rate; 12.4 percent and 10.5 percent in 2009 and 2010 respectively, compared to 3.6 percent in 2008.

Between 2009 and 2010 CMS reduced the Medicare FFS error rate by 1.9 percent or $1.1 billion. Had the error rate remained at 12.4 percent in 2010, there would have been $40.5 billion in improper payments in Medicare FFS, $6 billion more in improper payments than experienced. For purposes of setting an estimated baseline for future

[1] OMB M-06-23, Appendix C to OMB Circular A-123, August 10, 2006.
[2] The HHS 2009 Agency Financial Report (AFR) shows the Medicare FFS error rate as 7.8 percent, or $24.1 billion in improper payments; however this rate reflects a combination of two different review methodologies; 1) that included errors determined using the old review process (which most of the claims were reviewed) and 2) that included errors determined using the newer more stringent review process. After publication of the 2009 AFR, HHS decided to use the error rate using the newer more stringent review process as the 2009 rate.

goals, as well as for consistency and comparability of data, CMS uses 12.4 percent as the 2009 improper payment rate throughout this report.[2]

During the analysis of improper payments identified in 2010, CMS found that the improper payments error rate for inpatient hospital claims had increased significantly from last year. A large number of the payment errors were due to clinical care and procedures provided in an acute inpatient hospital that should have been provided in an outpatient hospital or another less intensive setting, meaning the clinical service was medically necessary but the place of service was incorrect. Under the current Medicare statute, these claims must be denied in full. These inappropriate "place of service" errors accounted for projected improper payments of $5.1 billion.

For inpatient hospital claims, a large percentage of medically unnecessary errors are related to hospital stays of short duration. In many cases, those services could have been rendered at a lower level of care, such as outpatient observation services. A smaller, but persistent amount of medically unnecessary payment errors are for inpatient hospital stays of three to five days, many of which resulted in a transfer to a skilled nursing facility (SNF). Some of these patients may have been admitted solely to satisfy the requirement for a minimum of three days as an inpatient in order to qualify for a SNF stay.

A portion of medical necessity errors for inpatient hospital claims is related to the denial of an invasive procedure that affected the Diagnosis Related Group (DRG) payment. If an invasive procedure did not meet the requirements of a Local Coverage Determination (LCD) or National Coverage Determination (NCD) and affected the DRG payment, the procedure was denied as a medically unnecessary service. In these cases, the DRG was reclassified after removing the medically unnecessary procedure. If the inpatient hospital stay included other Medicare covered services the improper payment amount was the difference between the billed DRG and the reclassified DRG; if no other covered services were provided the entire payment was considered improper.

We also found some notable decreases in certain areas due to enhanced educational efforts and policy clarifications related to Medicare signature requirements. The Part B error rate decreased from 18.9 percent in 2009 to 12.9 percent. The error rate for Part A non-inpatient hospital claims dropped from 8.8 percent in 2009 to 4.2 percent. While we are pleased with the decreases, we recognize that more is needed to further reduce errors throughout the Medicare FFS program.

Pursuant to the President's directive to reduce improper payments, CMS established a goal to reduce the 2009 error rate by 50 percent, or 6.2 percent, by 2012. CMS strives to eliminate improper payments in the Medicare program, maintain the Medicare trust funds and protect its beneficiaries. To better account for improper payments, CMS refined the Comprehensive Error Rate Testing (CERT) process beginning in 2009 and required that medical review procedures adhere to a more strict enforcement of medical documentation and coverage policies. In addition, CMS continued to analyze the improper payment data

garnered from the CERT program to make changes in areas where programmatic weaknesses exist. CMS also works with its contractors to ensure that Medicare FFS claims receive a more vigilant review before being processed. To further reduce errors, CMS will continue its efforts to work closely with the healthcare industry to ensure that providers and suppliers understand and follow CMS' policies and medical record requirements.

CMS will also analyze the improper payment data to determine if there are geographic trends that will result in further refining corrective actions and/or developing new procedures that will address programmatic weaknesses that may exist. CMS will review trends by types of service to locate potential vulnerabilities. CMS will use this knowledge to design innovative approaches to reduce improper payments, particularly in high risk areas such as durable medical equipment and home health. The error rate is not a measure of fraud; however, it may be an indication of program weaknesses and vulnerabilities that require more monitoring, oversight and diligence by CMS.

Reducing improper payments is a high priority for CMS. We are working on multiple fronts to attack this issue in order to meet our goals including increased prepayment medical review, enhanced analytics, expanded education and outreach to the provider/supplier communities, and expanded review of paid claims by our Recovery Auditors. CMS will continue to assess error rate measurement procedures and will make improvements and modifications as necessary to ensure the most accurate accounting of improper payments. Together these efforts will result in more accurate claims payment and a reduction of waste and abuse in the Medicare FFS program. This report describes the Medicare FFS improper payments in 2010, and steps CMS is taking to address these errors.

OVERVIEW

Background

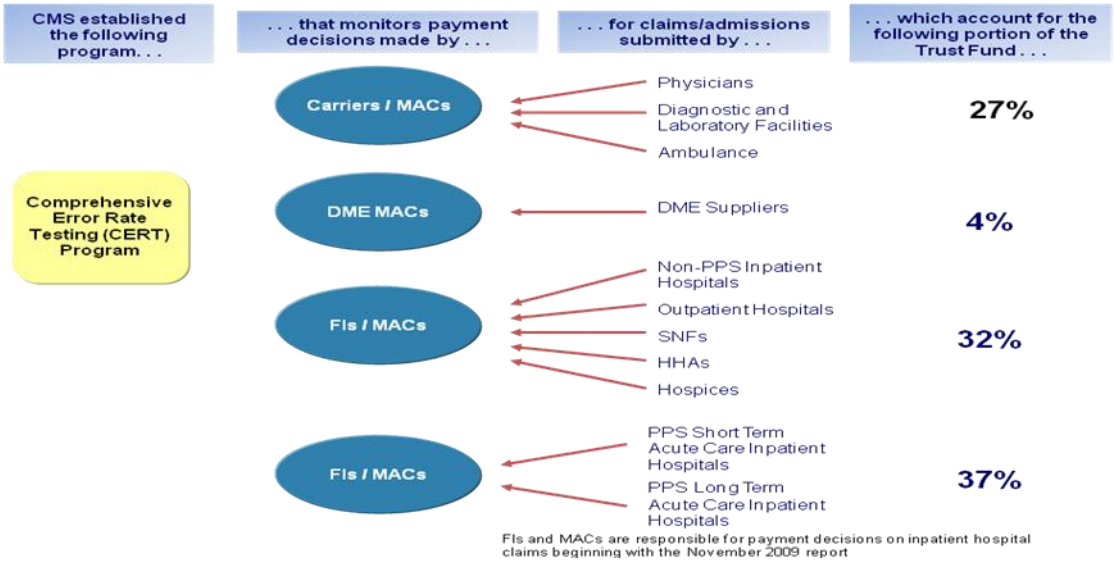
The Social Security Act established the Medicare program in 1965. Medicare currently covers the health care needs of people aged 65 or older, people under age 65 with certain disabilities, people of all ages with End Stage Renal Disease (ESRD), and certain others who elect to purchase Medicare coverage. Both Medicare costs and the number of Medicare beneficiaries have increased dramatically since 1965. In fiscal year (FY) 2009, approximately 46 million beneficiaries were enrolled in the Medicare program, and the total Medicare benefit outlay (both Medicare FFS and managed care payments) was

estimated at about $454 billion[2]. The Medicare budget represents almost 15 percent of the total Federal budget.

The Centers for Medicare & Medicaid Services (CMS) uses several types of contractors to prevent improper payments in the Medicare program including:
Medicare Administrative Contractors (MACs), Carriers, and Fiscal Intermediaries (FIs).

The following figure depicts the flow of claims by provider and supplier types through the Medicare contractor claims processing entities.

Figure 1: Flow of Claims by Provider and Supplier Types through the Medicare Contractor Claims Processing Entities



The primary goal of each Medicare contractor is to "Pay it Right" - that is, to pay the right amount to the right provider for covered and correctly coded services. Contractors cannot medically review every claim that comes through; thus, they must choose carefully which claims to review. It is through the detailed review of medical records that errors and non-compliance with CMS policies are detected. To improve provider compliance, contractors must also determine how best to educate providers about Medicare rules and implement the most effective methods for accurately answering coverage and coding questions.

As part of our IPIA[3] compliance efforts, and to better assist the Medicare FFS contractors in focusing their review and education efforts, CMS established the Comprehensive Error

[2] 2010 CMS Statistics: U.S. Department of Health and Human Services, CMS Pub. No. 03455, June 2010
[3] The Improper Payments Information Act of 2002 (IPIA) was amended by the Improper Payments Elimination and Recovery Act (IPERA) in July 2010.

Rate Testing (CERT) program to randomly sample and review claims submitted to and paid by the Medicare program. The CERT program considers any claim that was paid that should not have been paid or that was paid at an incorrect amount to be an improper payment, including both overpayments and underpayments. Since the IPIA requires the CERT program to use random claim selection, reviewers cannot develop provider billing patterns or trends that may indicate potential fraud. Thus the CERT program does not, and cannot, label a claim fraudulent.

History of Error Rate Measurement

The HHS Office of Inspector General (OIG) estimated the Medicare FFS error rate from 1996 through 2002. The OIG designed its sampling method to estimate a national Medicare FFS paid claims error rate. Due to the sample size – approximately 6,000 claims – the OIG was unable to produce error rates by contractor type, specific contractor, service type, or provider type. Following recommendations from the OIG, the sample size was increased for the CERT program when CMS began producing the Medicare FFS error rate for the November 2003 Report.

With the passage of the IPIA, CMS took responsibility for the error rate program beginning with FY 2003. One of the key tenets of the IPIA was that error rate measurement programs should be a critical part of an agency's internal controls. The IPIA also ushered in the notion that agencies should use this key internal control to inform decision makers about program vulnerabilities and drive corrective actions for reducing future errors. When the program was transitioned to CMS, the sample size for the CERT program was increased to approximately 120,000 claims. The increase in sample size allowed CMS to project not only a national error rate, but also allowed for contractor and service level error rates. It was believed that these additional error rates would allow CMS to develop more robust corrective actions and would provide CMS and its contractors with valuable information to assist in the development of specific corrective actions to reduce errors from occurring in the future.

CMS originally established two programs to monitor the accuracy of the Medicare FFS program: the CERT program and the Hospital Payment Monitoring Program (HPMP). The HPMP measured the error rate for inpatient hospital claims only and the CERT program measured the error rate for the other claim types, including outpatient hospital and durable medical equipment claims. Beginning with the FY 2009 reporting, the CERT program became fully responsible for sampling and reviewing **all** Medicare FFS claims, including inpatient and outpatient hospital claims, and durable medical equipment claims for purposes of measuring improper payments.

Each year the Medicare FFS error rate is reported in the annual financial reports of both CMS and HHS. The HHS Agency Financial Reports can be found at http://www.hhs.gov/afr. As part of the annual CMS Chief Financial Officer's (CFO) audit, the OIG conducts an audit of the CERT process and provides recommendations to

CMS for consideration in refining the error rate process. In 2010, the OIG performed a more extensive review of improper payments identified during the CERT program reviews in 2009. Based on the OIG's recommendations, CMS has incorporated a more in depth analysis in this report in order to identify specific reasons for errors, as well as potential vulnerabilities.

Table 1 summarizes the overpayments, underpayments, and error rates by year.

Table 1: National Error Rates by Year (Dollars in Billions) [4]

Year	Total Dollars Paid	Overpayments		Underpayments		Overpayments + Underpayments	
		Payment	Rate	Payment	Rate	Improper Payments	Rate
1996	$168.1	$23.5	14.0%	$0.3	0.2%	$23.8	14.2%
1997	$177.9	$20.6	11.6%	$0.3	0.2%	$20.9	11.8%
1998	$177.0	$13.8	7.8%	$1.2	0.6%	$14.9	8.4%
1999	$168.9	$14.0	8.3%	$0.5	0.3%	$14.5	8.6%
2000	$174.6	$14.1	8.1%	$2.3	1.3%	$16.4	9.4%
2001	$191.3	$14.4	7.5%	$2.4	1.3%	$16.8	8.8%
2002	$212.8	$15.2	7.1%	$1.9	0.9%	$17.1	8.0%
2003	$199.1	$20.5	10.3%	$0.9	0.5%	$12.7	6.4%
2004	$213.5	$20.8	9.7%	$0.9	0.4%	$21.7	10.1%
2005	$234.1	$11.2	4.8%	$0.9	0.4%	$12.1	5.2%
2006	$246.8	$9.8	4.0%	$1.0	0.4%	$10.8	4.4%
2007	$276.2	$9.8	3.6%	$1.0	0.4%	$10.8	3.9%
2008	$288.2	$9.5	3.3%	$0.9	0.3%	$10.4	3.6%
2009	$285.1	$34.2	12.0%	$1.2	0.4%	$35.4	12.4%
2010	$326.4	$33.2	10.2%	$1.1	0.3%	$34.3	10.5%

The error rate in 2009 is not comparable to previous years' error rates due to a change in review methodology, specifically a strict adherence to policy documentation requirements, the removal of claims history as a valid source for review information, and the determination that medical record documentation created by a supplier is insufficient to substantiate a claim. CMS continued this review methodology for 2010 and was successful in reducing the error rate by 1.9 percent or $1.1 billion between 2009 and 2010.

[4] Some columns and/or rows may not sum correctly due to rounding.

The CERT Process

Methodology Overview

The CERT contractor randomly selects a sample of claims submitted to the various Medicare contractors (Carriers, FIs, and MACs) during the reporting period. After the selected claims have been paid or denied, the CERT contractor requests supporting medical records from the health care providers and suppliers that submitted the claims in the sample.

When medical records are submitted by the provider, the CERT contractor reviews the claims in the sample and the associated medical records to see if the claims complied with Medicare coverage, coding, and billing rules. If not, the CERT contractor assigns the erroneous claims to the appropriate error category. When medical records are not submitted by the provider, the CERT contractor classifies the sampled claim as a no documentation claim and counts it as an error.

For any identified payment errors, the CERT contractor notifies the appropriate Medicare contractor that processed the claim so they may recoup the overpayment from the provider, or reimburse the provider for any underpayment. Finally, the CERT contractor calculates the projected improper payment rate based on the actual erroneous claims identified in the sample.

CERT reports a paid claims error rate which is based on the amount paid after the Medicare contractor made its payment decision on the claim. This rate includes fully denied claims. The paid claims error rate is the percentage of total dollars that all Medicare FFS contractors erroneously paid or denied and is a good indicator of how claim errors in the Medicare FFS program impact the trust fund. CMS calculated the gross rate by adding underpayments to overpayments and dividing that sum by the total dollars paid.

Medical Record Requests

The CERT contractor requested the associated medical records with the sampled claim from the provider that submitted the claim. The initial request for medical records is made via letter. If the provider fails to respond to the initial request after 30 days, the CERT contractor will sent at least three subsequent letters as well as place follow-up phone calls to the provider in order to attempt to collect the medical records.

In cases where no documentation was received from the provider after 75 days from the initial request, the case is considered to be a “no documentation” claim and counted as an error. Any documentation received after the 75th day is considered “late

documentation." If late documentation was received prior to the documentation cut-off date for this report, the records are reviewed and, if justified, the error in each rate is revised. If late documentation was received after the cut-off date for this report, the CERT contractor will make every effort to attempt to complete the review process before the final production of the report.

For durable medical equipment (DME) claims and Part A and Part B claims for clinical diagnostic laboratory services, additional documentation requests were made to the referring provider who ordered the item or service whenever the billing party does not have complete medical records to support the medical necessity of the services.

Sampling Methodology

For FY 2010 reporting, the CERT contractor randomly sampled approximately 82,000 claims; less than were sampled in previous years. Specifically, for each Medicare claims processing contractor (e.g. MACs), the CERT contractor conducted a random sample by claim type: Part A (excluding acute inpatient hospital services), Part A (acute inpatient hospital services only), Part B, and DME. On a daily basis, a random sample of claims, stratified by claim type, was selected from all of the claims submitted to a given Medicare claims processing contractor. A small portion of the claims sampled from the universe were unreviewable because they never completed the claim adjudication process (e.g., the claim was returned to the provider), leaving the final CERT sample comprised of claims that were either paid or denied by the Medicare claims processing contractor. This sampling methodology complies with all IPIA requirements and OMB guidance. The aggregate number of claims sampled and the number of claims reviewed for each claim type is provided below in Table 2.

Table 2: Sample Sizes by Claim Type

Claim Type	Number of Sampled Claims	Number of Claims Reviewed
Part A (Excluding Acute Inpatient Hospital)	35,313	34,458
Part A (Acute Inpatient Hospital)	2,454	2,453
Part B	31,766	30,965
DME	12,172	11,996
Total	81,705	79,872

Review of Claims

Upon receipt of medical records, the CERT contractor's clinicians conduct a review of the claims and submitted documentation to identify any improper payments. They check the CMS eligibility system, the Common Working File (CWF) to confirm that the person receiving the services was an eligible Medicare beneficiary; to determine whether the claim was a duplicate and to ensure that no other entity was responsible for paying the

claim (is Medicare the primary insurer). When performing these reviews, the CERT contractor follows Medicare regulations, billing instructions, National Coverage Determinations (NCDs), coverage provisions in interpretive manuals, and the respective Local Coverage Determinations (LCDs) and articles.

Error Categories

Based on the review of the medical records, claim errors are categorized into five different error categories. The five categories of error under the CERT program are described below.

No documentation—Claims are placed into this category when the provider fails to respond to repeated attempts to obtain the medial records in support of the claim or the provider responded that they do not have the requested records.

Insufficient documentation—Claims are placed into this category when the medical documentation submitted is inconclusive to support the rendered service (medical reviewers could not conclude that some of the allowed services were actually provided, provided at the level billed, and/or medically necessary).

Medically unnecessary service—Claims are placed into this category when claim review staff receive enough documentation from the medical records submitted to make an informed decision that the services billed were not medically necessary based on Medicare coverage policies.

Incorrect coding—Claims are placed into this category when providers submit medical documentation that supports a different code than the code /billed, the service was done by someone other than the billing provider, the billed service was unbundled, or a beneficiary was discharged to a site other than the one coded on a claim).

Other—This category includes claims that do not fit into any of the other categories (e.g., duplicate payment error, non covered or unallowable service).

Weighting and Determining the Final Results

The error rates were weighted so that each contractor's contribution to the error rate was in proportion to the percent of allowed charges for which they were responsible. The confidence interval is an expression of the numeric range of values into which CMS is 95 percent certain that the mean values for the improper payment estimates will fall. As required by the IPIA, the CERT program has included an additional calculation of the 90 percent confidence interval for the national error rate calculation. The size of the associated confidence interval, which represents the extent of variability, should always be considered when evaluating estimated payment error rates.

After the claims have been reviewed for improper payments, the sample is projected to the universe statistically using a combination of sampling weights and universe expenditure amounts.

Appeal of Claims

Providers can appeal denials (including no documentation denials) through the normal appeal processes by submitting documentation supporting their claims to the appropriate contractor. Appeals are tracked and all overturned final appeal determinations are entered into the appeals tracking system to ensure the accuracy of the error rates. After the calculation of the final error rate, appeal decisions cannot be considered. For FY 2010, $3.1 billion in projected appeals reversals were deducted from the national improper payment projections contained in this report.

Overpayments/Underpayments

In the CERT program, contractors are notified of detected overpayments and underpayments so they can implement the necessary payment adjustments. Sampled claims for which providers failed to submit documentation were considered overpayments.

Medicare contractors only recover actual overpayments identified in the CERT sample. The CERT program identified $5,057,759 in actual overpayments and, as of the publication date of this report, CMS has collected $3,814,177 of those overpayments. CMS and its contractors will never collect a small amount of the identified overpayments. The following lists the primary reasons why some overpayments cannot be collected; this list is not all inclusive:

- The provider appealed the overpayment and the outcome of the appeal overturned the CERT decision, however the decision was made after the error rate was final; or
- The provider has gone out of business and CMS cannot locate the provider after multiple attempts.

However, for all other situations, CMS' Medicare contractors continue their attempts to collect the overpayments identified during the CERT process.

Error Rate Reduction Targets

Based on the CERT program results for 2009, CMS established the following error rate goal under the Government Performance and Results Act (GPRA).

Reduce the percentage of improper payments made by the Medicare FFS program.

- By November 30, 2010, reduce the percent of improper payments under Medicare FFS to 9.5 percent.

  Status: This goal was not met. The national paid claims error rate for the November 2010 reporting period was 10.5 percent.

- By November 30, 2011, reduce the percent of improper payments under Medicare FFS to 8.5 percent.

- By November 30, 2012, reduce the percent of improper payments under Medicare FFS to 6.2 percent.

FINDINGS

National Medicare FFS Error Rate

As mentioned in the previous section, the estimated national paid claims error rate in the Medicare FFS program was 10.5 percent. The 95 percent confidence interval was 9.8 percent - 11.2 percent. The 90 percent confidence interval (required to be reported by IPIA) was 9.9 percent - 11.1 percent. The total amount projected to be in error was $34.3 billion**.**

Table 3 summarizes the overall improper payment error rates by claim types: Part A—Inpatient Hospital Services; Part B – Outpatient Services; and DME. Claims for DME supplies have the highest error rate—73.8 percent, while Part A has the most dollars in error--$16 billion.

Table 3: Error Rate and Projected Improper Payment by Claim Type (Dollars in Billions)[5]

Claim Type	Total Paid Amount	Overall Improper Payment		
		Improper Payment	Paid Claim Error Rate	95% Confidence Interval
Part A (total)	$232.0	$16.1	6.9%	6.0% - 7.9%
Part A (Excluding Acute Inpatient Hospital)	$112.6	$4.7	4.2%	3.7% - 4.7%
Part A (Acute Inpatient Hospital)	$119.4	$11.3	9.5%	7.8% - 11.2%
Part B	$84.5	$10.9	12.9%	12.1% - 13.8%
DME	$9.8	$7.3	73.8%	71.5% - 76.1%
Overall	$326.4	$34.3	10.5%	9.8% - 11.2%

[5] Some columns and/or rows may not sum correctly due to rounding.

Summarization of Errors Due to DME Supplies

The DME error rate (73.8 percent) was the highest among all of the claim types. While DME accounts for less than 4 percent of all Medicare FFS expenditures, these services resulted in 21 percent of total projected improper payments in 2010. Of the total DME errors, 45.3 percent were due to insufficient documentation and 27.3 percent were due to a lack of medical necessity for the item. Therefore, nearly half of all DME errors were the result of inadequate documentation—meaning the provider/supplier did not submit a complete medical record and we could not make an informed decision about medical necessity of the DME service. Approximately a quarter of the errors were "medically unnecessary"—meaning the medical records submitted contained adequate documentation to determine that the services billed and paid for were not medically necessary and the DME service should not have been provided.

Medicare pays for DME only if the patient's medical record contains sufficient documentation of the patient's medical condition to substantiate the necessity for the type or quantity of items ordered. In other words, the submitted documentation must support that the item(s) was medically necessary. CMS recently clarified that documentation created by the supplier alone is insufficient to warrant payment of the claim. It is often difficult to obtain proper documentation for DME claims because the supplier who billed for the item must obtain detailed documentation from the medical professional who ordered the item. As such, the involvement of multiple parties can contribute to situations of missing or incomplete documentation and delays in documentation receipt.

Insufficient documentation errors are found when the medical documentation does not include pertinent facts about the patient's condition that are necessary to make an informed decision about medical necessity. For the 2010 review cycle, the primary causes of insufficient documentation errors for DME claims included:

- Missing physician orders,
- Missing diagnostic laboratory test results (e.g., an arterial blood gas for home oxygen therapy), and
- Missing or incomplete documentation of the Face-to-Face examination for power wheelchairs.

With regard to medical necessity, errors of medical necessity are found when the submitted documentation does not support the beneficiary's need for the DME item based on criteria established by NCDs or LCDs. The lack of supporting documentation was most notable for power wheelchair claims. For example, the documentation supplied for the patient assessment should paint a picture of the patient's functional abilities and limitations on a typical day. It should contain as much objective data as possible. The physical examination should be focused on the body systems that are responsible for the patient's ambulatory difficulty or impact on the patient's ambulatory ability. Although patients who qualify for coverage of a power mobility device may use that device outside

the home, because Medicare's coverage of a wheelchair or power operated vehicle (scooter) is determined solely by the patient's mobility needs within the home, the examination must clearly distinguish the patient's abilities and needs within the home from any additional needs for use outside the home. In many cases, the submitted documentation did not validate that the beneficiary needed a wheelchair to support them in activities of daily living.

Given the importance of receiving medical record documentation to substantiate the necessity for DME items billed, beginning in 2011, CMS will notify the physician when a DME item ordered by that physician is selected for CERT review. The notification reminds physicians of their responsibility to maintain documentation of medical necessity for the DME item and submit requested documentation to the supplier. A more in-depth explanation of the primary causes of DME improper payments for the 2010 review cycle is provided in the next section.

Primary Causes of DME Improper Payments

Within DME, oxygen supplies, glucose monitoring supplies, and power wheelchairs have the highest improper payments, accounting for 3.6 percent, 3.3 percent, and 2.4 percent of the total projected improper payments in Medicare FFS, respectively. These three DME groups account for approximately 44 percent of the DME improper payments. The determination of improper payments for oxygen supplies, glucose monitoring supplies and power wheelchairs are discussed below.

Oxygen Supplies: Most of the errors are due to insufficient documentation to support the medical necessity for the home oxygen equipment. These oxygen supplies are generally provided on a monthly basis, given the nature of these supplies it is critical that the patient be closely monitored by the physician to ensure appropriate care and support the continued medical necessity of the oxygen supplies. The critical documentation required but **missing** from the medical records includes:

- Most recent Certificate of Medical Necessity (CMN) to document patient's condition;
- Test results from the qualifying oximetry or arterial blood gas test as required by the CMN;
- Documentation showing that the patient was seen by a physician 30 days prior to the initial certification date documenting the diagnosis for which the oxygen is prescribed;
- Documentation showing that the patient was seen by a physician 90 days prior to the recertification date (if applicable); and
- For claims subsequent to the recertification date, physician visit note supporting continued medical monitoring of oxygen use and needs.

Glucose Monitoring Supplies: Medicare pays for glucose monitors, test strips and lancets for all Medicare beneficiaries with diabetes. A prescription from an ordering doctor is

required for Medicare coverage of all diabetic supplies. The prescription must state the number of times per day a beneficiary should test his or her blood sugar. Medicare requires that an ordering physician must review the prescription every 6 months. Medicare does not pay for automatic shipment of glucose supplies; the beneficiary or beneficiary's caregiver must directly submit a request for a refill of all diabetic supplies.

Many improper payment errors for glucose monitoring supplies resulted from the fact that the ordering physician did not submit required documentation to support the need for the glucose supplies. These glucose supplies are generally provided on a monthly basis, given the nature of these supplies it is critical that the patient be closely monitored by the physician to ensure appropriate care and support the continued medical necessity of the glucose supplies. The critical documentation required but missing from the medical records includes:

- Physician's original order for the glucose supplies;
- Documentation from the physician regarding the patient's condition and the continued use or support of testing frequency for which Medicare was billed; and
- Documentation supporting the physician's 6-month review of the original order.

Improper payment errors for diabetic supplies were also attributed to medically unnecessary services. For example, in some cases, medical necessity errors for diabetic supplies were assigned because the beneficiary exceeded allowable utilization of their diabetic supplies by receiving diabetic supplies concurrently from multiple DME suppliers during over-lapping periods of time.

Power Wheelchairs: Medicare pays for power wheelchairs or scooters only when specific statutory requirements are met. These requirements are listed below.

- There must be an in-person visit with a physician specifically addressing the beneficiary's mobility needs.
- There must be a history and physical examination by the physician or other medical professional focusing on an assessment of the beneficiary's mobility limitation and needs. The results of this evaluation must be recorded in the beneficiary's medical record.
- A prescription must be written AFTER the in-person visit has occurred and the medical evaluation is completed. This prescription has seven required elements.
- The prescription and medical records documenting the in-person visit and evaluation must be sent to the DME supplier within 45 days after the completion of the evaluation.

If any of the requirements listed above are not documented by the DME supplier and ordering physician CERT denies the DME item as insufficiently documented.

In addition, the in-person visit and mobility evaluation together are often referred to as the "Face-to-Face examination." The complete history and physical examination of the beneficiary's mobility limitation(s) and needs, typically includes the following components:

- A history of the present condition(s) and past medical history that is relevant to the beneficiary's mobility needs in the home;
- Evaluation of symptoms that limit ambulation;
- Diagnoses that is responsible for these symptoms;
- Prescribing medications or other treatment for these symptoms;
- Assessment of the progression of ambulation difficulty over time;
- Determination of other diagnoses that may relate to ambulatory problems;
- Assessment of how far the beneficiary can walk without stopping; including the assistive device, (such as a cane or walker) that may be necessary;
- Assessment of the pace of ambulation;
- A history of falls, including frequency, circumstances leading to falls; and
- Assessment of whether a walker (or other mobility assistive device) is sufficient to meet the mobility of the beneficiary.

If the medical review by CERT shows that the physician's physical and history examination did not fully support the need for a power wheelchair, CERT denied the service as not medically necessary.

Errors Due to Services Provided in an Inappropriate Setting

Medicare pays for an acute inpatient hospital stay only if the beneficiary demonstrates signs and/or symptoms severe enough to warrant the need for medical care and must receive services of such intensity that they can be furnished safely and effectively only on an inpatient basis. An inpatient is a person who has been admitted to a hospital for bed occupancy for purposes of receiving inpatient hospital services. Generally, a patient is considered an inpatient if formally admitted as inpatient with the expectation that he or she will remain at least overnight and occupy a bed even though it later develops that the patient can be discharged or transferred to another hospital and not actually use a hospital bed overnight.

The physician or other practitioner responsible for a patient's care at the hospital is also responsible for deciding whether the patient should be admitted as an inpatient. Physicians are expected to use a 24-hour period as a benchmark, i.e., they should order admission for patients who are expected to need hospital care for 24 hours or more, and treat other patients on an outpatient basis. However, the decision to admit a patient is a complex medical judgment which can be made only after the physician has considered a number of factors, including the patient's medical history and current medical needs, the types of facilities available to inpatients and to outpatients, the hospital's by-laws and admissions policies, and the relative appropriateness of treatment in each setting.

There are situations where a patient was admitted as an inpatient but the clinical care and procedures should have been provided in an outpatient or other non-hospital based setting. Under Medicare statute these claims must be denied in full, even if the claim would be potentially payable in another setting. By law, CMS cannot partially deny the claim or allow the provider to re-bill using a different setting.

Based on a review of the claims in error, CMS determined that there were 2,453 inpatient hospital claims in the CERT sample totaling $25.1 million in actual overpayments where the claim was denied in full because the services provided were not medically necessary as an inpatient service and should have been provided as an outpatient service. These inpatient hospital errors project to $5.1 billion of improper payments in the Medicare universe. The projected net difference between what was called an error and what may have been payable had the service been billed in the appropriate outpatient setting was $3.2 B, or a difference in the error rate of -1.5 percent; 9.0 percent rather than 10.5 percent.

Corrective Actions

CMS strives to prevent and eliminate improper payments in the Medicare program to sustain the Medicare trust funds and protect beneficiaries. To better account for and identify improper payments, CMS refined the CERT process in 2009 by requiring a strict adherence to our policies. CMS continues to improve the error rate measurement process and has redesigned the CERT sampling methodology to provide additional error information on high risk areas, in accordance with the President's Executive Order 13520 "Reducing Improper Payments[6] issued in November 2009.

CMS continues to analyze the improper payment data garnered from the CERT program and make changes in areas that show programmatic weakness. CMS also uses the results of the CERT program as feedback to the Medicare contractors to inform and enhance their medical review efforts, as well as improve their overall operations in a comprehensive manner that includes their education and outreach efforts. CMS has several corrective actions in place or under development to reduce documentation errors and medical necessity errors. Additionally, CMS plans to make several programmatic changes that are expected to decrease improper payments and ensure the authenticity of the services billed for by providers and suppliers. The following provides additional details about some of the corrective actions CMS is taking to reduce improper payments in the future.

Documentation Errors- CMS implemented improvements to the Medicare FFS error rate measurement program to ensure that providers and suppliers submit the required documentation, as follows.

[6] The White House, Office of the Press Secretary, Executive Order-- Reducing Improper Payments and Eliminating Waste in Federal Programs, November 23, 2009 (http://www.whitehouse.gov/the-press-office/executive-order-reducing-improper-payments)

- CMS commenced a DME and A/B MAC provider outreach and education task forces in 2010. These task forces consist of contractor medical review professionals who meet regularly to develop strategies to address for provider education in error prone areas. The task force held several open door forums to discuss documentation requirements and answer providers/suppliers questions. The task force also issued several informational articles that have been distributed on an as-needed basis to promote education among providers. The articles are maintained on the Medicare Learning Network (MLN) and can be accessed at any time.
- CMS contacts the provider who ordered the DME at the same time a supplier is contacted for documentation to advise them of their responsibility to provide medical documentation in support of the supplier's DME claim.
- CMS revises the medical record request letters as needed to clarify for the provider/supplier the components of the medical record that are required for a CERT review. The letter services as a checklist for the provider/supplier to ensure that their record submission is complete. CMS also revised follow up medical record request letters to include information about the documentation that is missing to ensure the provider/supplier fully understands what documentation needs to be submitted.
- CMS contacts third party providers to request documentation when the billing provider indicated that a portion of the medical record is possessed by a third party. For example, such a third party provider may be a physician who orders a power wheelchair that is dispensed by the supplier that submits the claim.
- CMS staff regularly contacts providers to make additional attempts at collecting medical documentation to ensure insufficient documentation errors are accurate.
- CMS conducts ongoing education to inform providers about the importance of submitting thorough and complete documentation. This involves national training sessions, individual meetings with providers with high error rates, presentations at industry association meetings, and the dissemination of educational materials.
- CMS implementation of the Electronic Submission of Medical Documentation (esMD) into the CERT review process will create greater program efficiencies, allow a quicker response time to documentation requests, and provide better communication between the provider, the CERT contractors, and CMS. The first phase of esMD went live on September 15, 2011. Initially, CMS anticipates limited provider participation but as more Health Information Handlers (HIHs) begin to offer gateway services to providers and CMS and HIH provider outreach efforts take hold, CMS expects provider participation to increase.

Medical Necessity Errors- CMS is dedicated to reducing medical necessity errors and is conducting the following corrective actions.

- CMS implemented a National Fraud Prevention System (FPS) on June 30, 2011, as required by the Small Business Jobs Act of 2010. The FPS is an innovative risk scoring technology that applies proven predictive models to nationwide Medicare Fee-For-Service claims on a pre-payment basis. The risk-scores

identify highly suspect claims, and help target resources to the areas of Medicare's greatest risk.

- CMS is in the process of implementing enhanced medical review policies including a Face-to-Face requirement for DME in accordance with Section 6407 of the Affordable Care Act (Affordable Care Act) (Pub. L. 111-148). CMS published a final rule that implemented the Face-to-Face encounter requirements for Medicare home health on November 17, 2010 as required by Section 6407 of the Affordable Care Act.
- CMS developed Comparative Billing Reports (CBRs) to help Medicare non-hospital providers analyze administrative claims data. CBRs compare a provider's billing pattern for various procedures or services to their peers on a state and national level. CMS also uses the Program for Evaluating Payment Patterns Electronic Report (PEPPER). The PEPPER allows Medicare inpatient hospital providers to also analyze their billing patterns through a comparison to other providers in their state and in the nation.
- CMS is developing a Program Vulnerability Tracking System (PVTS) that will track vulnerabilities identified by internal and external sources; including the National Fraud Prevention program, the Recovery Auditors, and the Office of the Inspector General. CMS will use the PVTS to inventory and prioritize vulnerabilities, and track corrective actions.
- CMS is conducting a competition to procure private sector edits for implementation within the Medicare program. As part of this effort CMS will: 1) evaluate the accuracy of commercial products, 2) determine whether these products are feasible in the Medicare FFS environment, and 3) determine whether they can prevent errors and reduce improper payments in the Medicare FFS program.
- CMS requires Carriers, FIs, and MACs to develop Error Rate Reduction Plans that identify the specific causes of the improper payments in their jurisdiction and outlines corrective actions for the errors.
- CMS requires the Carriers, FIs, and MACs to review and validate the CERT results for their jurisdiction to determine the education needed to reduce medical necessity and incorrect coding errors.
- CMS developed and installed new correct coding edits in the claims processing systems.
- CMS issued the first Medicare Quarterly Provider Compliance Newsletter in October 2010 to physicians, providers and suppliers to educate them on common errors found in the Medicare program and actions providers can take to prevent them from occurring in the future.
- CMS developed medically unlikely auto-deny edits in the claims processing systems to catch those services where the level billed exceeds acceptable clinical limits. These edits are updated quarterly.
- CMS approved additional areas for Medicare FFS Recovery Auditors review including inpatient hospital stays and DME. CMS also increased medical record request limits for Recovery Auditors. Information about the results of the

Recovery Audit Program provides valuable information to providers about areas where improvements are needed.

- CMS continually updates Medicare FFS manuals to clarify requirements for the review of documentation to promote uniform application of our policies across all medical reviews performed by Medicare contractors.

Ensuring the Authenticity of Providers and Suppliers- CMS has implemented safeguards to better ensure that only legitimate providers and suppliers receive Medicare payments, including the following.

- CMS is undertaking numerous aggressive actions to tighten the provider enrollment process, provide more rigorous oversight and monitoring once a provider/supplier enrolls in the program, and to strengthen the provider revocation process. CMS implemented a DME Accreditation program to ensure the legitimacy of the DME suppliers that bill Medicare and to ensure those suppliers meet all the requirements for participation in the Medicare program.
- CMS established a surety bond requirement for most suppliers of durable medical equipment, prosthetics and orthotics.
- CMS issued a request for proposals for an automated screening solution in July 2011 that will support the revalidation of 1.5 million providers, as required by the Affordable Care Act. The award is targeted for September 2011. The enrollment screening solution will automate the multiple database checks that are currently manual, increasing the accuracy of results and decreasing application processing time.
- CMS, in collaboration with California provider groups, law enforcement and the Senior Medicare Patrol, hosted a series of events across the state to educate physicians on medical identify theft and other fraud related topics and how to protect their professional and medical identity from fraud in September 2011.
    - CMS published a final rule with comment titled, "Medicare, Medicaid and Children's Health Insurance Programs; Additional Screening Requirements, Application Fees, Temporary Enrollment Moratoria, Payment Suspensions and Compliance Plans for Providers and Suppliers" on February 2, 2011. This final rule implemented many of the program integrity provisions in the Affordable Care Act, including the requirement that State Medicaid programs terminate a provider or supplier who has been terminated from another State Medicaid program or from Medicare.
    - CMS published a final rule titled, "Medicare Program; Establishing Additional Medicare Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) Supplier Enrollment Safeguards (CMS-6036-F) in the Federal Register on August 27, 2010. This final rule clarified and expanded on the existing enrollment requirements

that DMEPOS suppliers must meet to establish and maintain billing privileges in the Medicare program.

- CMS has initiated the realignment of the Program Safeguard Contractors (PSC) with the MACs. When the realignment is completed, there will be seven zones to address fraud "hot spots" in the United States, thereby concentrating on areas of high fraud occurrence. The name for this entity is being changed from PSCs to Zone Program Integrity Contractor (ZPIC). Five of the seven ZPIC awards have been made.
- CMS has taken steps to fight DMEPOS fraud in the "high risk" states of Florida, California, Texas, Illinois, Michigan, North Carolina and New York. These efforts include more stringent reviews of new suppliers' applications; unannounced site visits; extensive pre- and post-payment review of claims; interviews with high volume ordering/referring physicians; and visits to high risk beneficiaries to ensure they are appropriately receiving items and services for which Medicare is being billed.
- CMS implemented the first phase of the DME competitive bidding program which will have a gradual impact on the DME error rate.

Appendix

Paid Claims Error Rate by Error Type

The national Medicare improper payment rate was higher in 2009 and 2010 than in previous years. These increases are due primarily to CMS' changes to medical review criteria. Documentation requirements became more stringent and conditions for medical necessity had to be met precisely. Table 4 shows the national error rates by year and error category. The greatest increases in the error rates are due to insufficient documentation and medically unnecessary errors. These types of errors are most impacted by the revised review criteria.

Table 4: **Summary of Error Rate by Year and by Category**

Year and Category		No Documentation Errors	Insufficient Documentation Errors	Medically Unnecessary Errors	Incorrect Coding Errors	Other Errors	Improper Payments	Correct Payments
1996	Net[1]	1.9%	4.5%	5.1%	1.2%	1.1%	13.8%	86.2%
1997	Net	2.1%	2.9%	4.2%	1.7%	0.5%	11.4%	88.6%
1998	Net	0.4%	0.8%	3.9%	1.3%	0.7%	7.1%	92.9%
1999	Net	0.6%	2.6%	2.6%	1.3%	0.9%	8%	92%
2000	Net	1.2%	1.3%	2.9%	1%	0.4%	6.8%	93.2%
2001	Net	0.8%	1.9%	2.7%	1.1%	-0.2%	6.3%	93.7%
2002	Net	0.5%	1.3%	3.6%	0.9%	0%	6.3%	93.7%
2003	Net	5.4%	2.5%	1.1%	0.7%	0.1%	9.8%	90.2%
2004	Gross[2]	3.1%	4.1%	1.6%	1.2%	0.2%	10.1%	89.9%
2005	Gross	0.7%	1.1%	1.6%	1.5%	0.2%	5.2%	94.8%
2006	Gross	0.6%	0.6%	1.4%	1.6%	0.2%	4.4%	95.6%
2007	Gross	0.6%	0.4%	1.3%	1.5%	0.2%	3.9%	96.1%
2008	Gross	0.2%	0.6%	1.4%	1.3%	0.1%	3.6%	96.4%
2009	Gross	0.2%	4.3%	6.3%	1.5%	0.1%	12.4%	87.6%
2010	Gross	0.1%	4.6%	4.2%	1.6%	0.1%	10.5%	89.5%

1FY 1996-2003 Improper payments were calculated Overpayments – Underpayments
[2]FY 2004-2010 Improper payments were calculated Overpayments + absolute value of Underpayments

Table 5 summarizes the percent of total dollars improperly paid by error category and claim type.

Table 5: Type of Error Comparison for 2009 and 2010[7]

Type of Error	2009 Report	2010 Report				
	Total	Total	Part A excl. Acute Inpatient Hospital	Part A Acute Inpatient Hospital	Part B	DME
No documentation	0.2%	0.1%	0.1%	0.0%	0.2%	0.7%
Insufficient Documentation	4.3%	4.6%	2.5%	0.9%	8.0%	45.3%
Medically Unnecessary	6.3%	4.2%	1.2%	6.8%	1.7%	27.3%
Incorrect Coding	1.5%	1.6%	0.4%	1.7%	3.0%	0.1%
Other	0.1%	0.1%	0.1%	0.0%	0.1%	0.3%
All Type of Error	12.4%	10.5%	4.2%	9.5%	12.9%	73.8%

Table 6 summarizes the overall improper payments, overpayments, underpayments and error rates by claim type.

Table 6: Error Rate and Projected Improper Payment by Claim Type and Over/Under Payments (Dollars in Billions)[8]

Claim Type	Total Paid Amount	Overall Improper Payment			Overpayment		Underpayment	
		Improper Payment	Paid Claim Error Rate	95% Confidence Interval	Improper Payment	Paid Claim Error Rate	Improper Payment	Paid Claim Error Rate
Part A (total)	$232.0	$16.1	6.9%	6.0% - 7.9%	$15.2	6.6%	$0.8	0.4%
Part A (Excluding Acute Inpatient Hospital)	$112.6	$4.7	4.2%	3.7% - 4.7%	$4.6	4.1%	$0.1	0.1%
Part A (Acute Inpatient Hospital)	$119.4	$11.3	9.5%	7.8% - 11.2%	$10.6	8.9%	$0.7	0.6%
Part B	$84.5	$10.9	12.9%	12.1% - 13.8%	$10.7	12.7%	$0.2	0.3%
DME	$9.8	$7.3	73.8%	71.5% - 76.1%	$7.3	73.8%	$0.0	0.0%
Overall	$326.4	$34.3	10.5%	9.8% - 11.2%	$33.2	10.2%	$1.1	0.3%

[7] Some columns and/or rows may not sum correctly due to rounding.

[8] Some columns and/or rows may not sum correctly due to rounding.

Summary of Error Rate Categories

(1) No Documentation Errors

Claims are placed into this category when the provider fails to respond to repeated attempts to obtain the medial records in support of the claim or the provider responded that they do not have the requested records.

No documentation errors accounted for 0.1 percent of the total dollars all Medicare FFS contractors allowed during the reporting period. The data breaks down by claim type as follows.

Part A (excluding Acute Inpatient Hospital)	Part A (Acute Inpatient Hospital)	Part B	DME	Overall
0.0%	0.0%	0.1%	0.0%	**0.1%**[9]

The following is an example of a no documentation error.

- An FI paid $172.00 to a hospital for an outpatient clinic visit. After multiple attempts to obtain the record, the CERT contractor received a letter which stated "Medical information you are requesting does not exist in the patient's medical record. No information available." The FI recouped the entire amount.

(2) Insufficient Documentation Errors

Claims are placed into this category when the medical documentation submitted is inconclusive to support the rendered service (medical reviewers could not conclude that some of the allowed services were actually provided, provided at the level billed, and/or medically necessary).

Insufficient documentation errors accounted for 4.6 percent of the total dollars allowed during the reporting period. The data breaks down as follows.

[9] Some columns and/or rows may not sum correctly due to rounding.

Part A (excluding Acute Inpatient Hospital)	Part A (Acute Inpatient Hospital)	Part B	DME	Overall
0.9%	0.3%	2.1%	1.4%	**4.6%**[10]

The following is an example of an insufficient documentation error.

- An FI paid $2,766.87 to a provider for an inpatient hospital stay. After multiple attempts to obtain the documentation, we received an initial history and physical and a brief discharge summary only. The CERT reviewer determined there was insufficient documentation to support the services billed. The FI recouped the entire payment.

See the section entitled *Types of Errors by Clinical Setting* for further information about insufficient documentation errors. Refer to page 25.

(3) Medically Unnecessary Services Errors

Claims are placed into this category when claim review staff receives enough documentation from the medical records submitted to make an informed decision that the services billed were not medically necessary based on Medicare coverage policies.

Medically unnecessary service errors accounted for 4.2 percent of the total dollars allowed during the reporting period. This data breaks down in the following manner.

Part A (excluding Acute Inpatient Hospital)	Part A (Acute Inpatient Hospital)	Part B	DME	Overall
0.4%	2.5%	0.4%	0.8%	**4.2%**[11]

For inpatient hospital claims, medically unnecessary services errors are often related to hospital stays of short duration where services could have been rendered at a lower level of care. A smaller, but persistent amount of medically unnecessary payment errors are for inpatient hospital stays of three to five days, many of which resulted in a transfer to a skilled nursing facility (SNF). Some of these patients may have been admitted solely to satisfy the requirement for a minimum of three days as an inpatient in order to qualify for a SNF stay.

A portion of medical necessity errors for inpatient claims is related to denying an invasive procedure that affected the DRG payment. If an invasive procedure did not

[10] Some columns and/or rows may not sum correctly due to rounding.
[11] Some columns and/or rows may not sum correctly due to rounding.

meet the requirements of an LCD or NCD and the invasive procedure affected the DRG payment, the invasive procedure was denied. In these cases, the DRG was reclassified after removing the medical unnecessary invasive procedure and the improper payment is attributed to medically unnecessary services.

The following is an example of a medically unnecessary services error.

- A DME MAC paid $140.46 for the monthly rental of a semi-electric hospital bed. Per the DME MAC's LCD, semi-electric hospital beds are covered by Medicare if the patient's medical condition requires one or more of the following: positioning of the body in ways not feasible with an ordinary bed; elevation of the head more than 30 degrees most of the time; traction equipment; or frequent changes in body position. The reviewer requested additional documentation from the supplier and ordering physician. The medical records received from the ordering physician failed to support the need for the hospital bed per the DMAC's LCD and Medicare requirements. The entire amount was recouped.

(4) Incorrect Coding Errors

Claims are placed into this category when providers submit medical documentation that supports a different code than the code billed, the number of units submitted was incorrect, the service was done by someone other than the billing provider, the billed service was unbundled, or a beneficiary was discharged to a site other than the one coded on a claim).

Incorrect coding errors accounted for 1.6 percent of the total dollars allowed during the reporting period.

Part A (excluding Acute Inpatient Hospital)	Part A (Acute Inpatient Hospital)	Part B	DME	Overall
0.1%	0.6%	0.8%	0.0%	**1.6%**[12]

The following is an example of an incorrect coding error.

- An FI paid a provider $136.48 for the drug Remicade; HCPCS code J1745, 10 mg per unit. The beneficiary received 500 mg or 50 units, but the hospital billed only 10 units. After CERT review, the underpayment of $343.56 was paid to the hospital.

[12] Some columns and/or rows may not sum correctly due to rounding.

(5) Other Errors

This category includes claims that do not fit into any of the other categories (e.g., duplicate payment error, non covered or unallowable service).

Other errors accounted for 0.1 percent of the total dollars allowed during the reporting period. This data breaks down as follows.

Part A (excluding Acute Inpatient Hospital)	Part A (Acute Inpatient Hospital)	Part B	DME	Overall
0.0%	0.0%	0.0%	0.0%	**0.1%**[13]

The following is an example of an 'other' error.

- A Carrier paid $152.95 for anesthesia used during the routine extraction of dental caries. Since services associated with a non-covered service (dental extraction) are not allowed, the entire amount was recouped.

Types of Errors by Clinical Setting

Examining the types of medical review errors and their impact on improper payments is a crucial step toward reducing improper payments in Medicare FFS. Table 7 shows that projected improper payments are driven by insufficient documentation errors, medically unnecessary errors, and to a lesser extent, incorrect coding errors. When the errors are analyzed by clinical setting, the data show that the most improper payments due to medically unnecessary errors are for inpatient hospitals and DME. Substantial improper payments are attributable to physicians and inpatient hospitals due to insufficient documentation and incorrect coding errors.

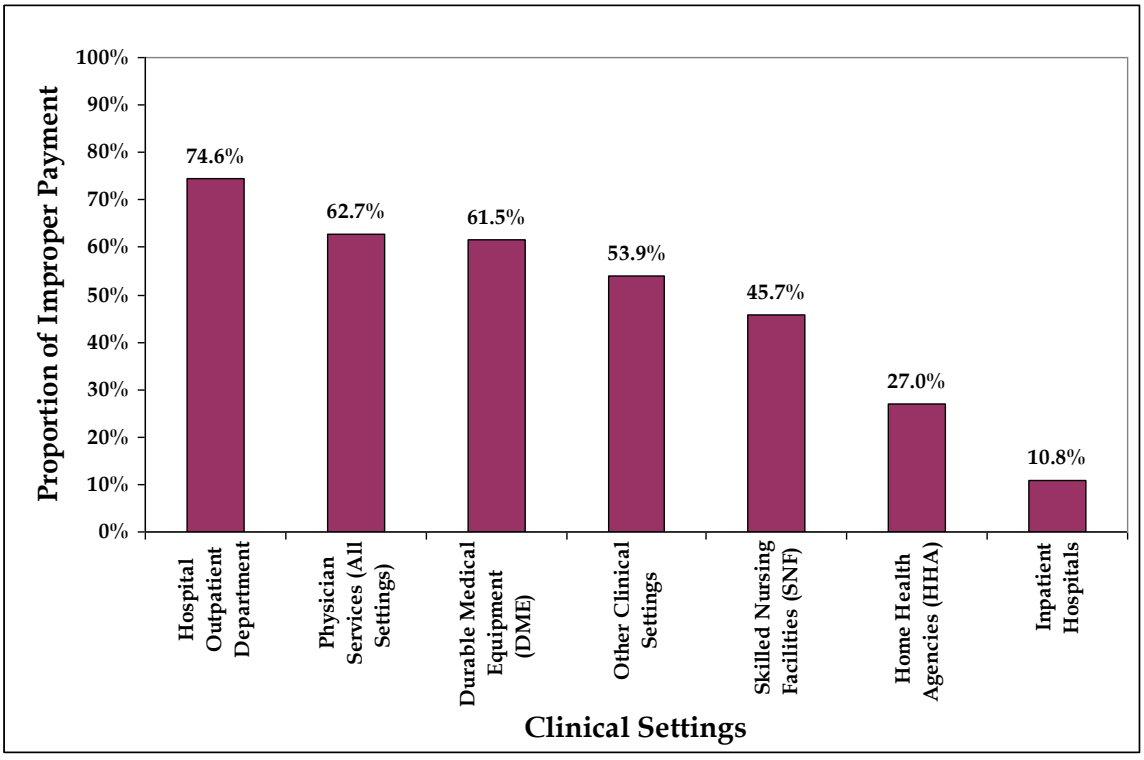
[13] Some columns and/or rows may not sum correctly due to rounding.

Table 7: Projected Improper Payments (in Billions of Dollars) by Type of Error and Clinical Setting[14]

Type of Error	Durable Medical Equipment (DME)	Home Health Agencies (HHA)	Hospital Outpatient Department	Acute Inpatient Hospitals	Physician Services (All Settings)	Skilled Nursing Facilities (SNF)	Other Clinical Settings	Overall
No Documentation	$0.07	$0.03	$0.03	$0.02	$0.14	$0.00	$0.02	$0.32
Insufficient Documentation	$4.46	$0.27	$1.97	$1.24	$6.22	$0.42	$0.55	$15.12
Medically Unnecessary	$2.69	$0.60	$0.53	$8.14	$1.08	$0.19	$0.37	$13.58
Incorrect Coding	$0.01	$0.06	$0.10	$2.08	$2.43	$0.30	$0.08	$5.07
Other	$0.03	$0.03	$0.01	$0.03	$0.05	$0.01	$0.00	$0.17
All Types of Errors	$7.25	$1.00	$2.64	$11.52	$9.92	$0.92	$1.02	$34.27

Figure 2 provides an analysis of the clinical settings where most insufficient documentation errors are occurring.

Figure 2: Share of Error Due to Insufficient Documentation by Clinical Setting



[14] Some columns and/or rows may not sum correctly due to rounding.

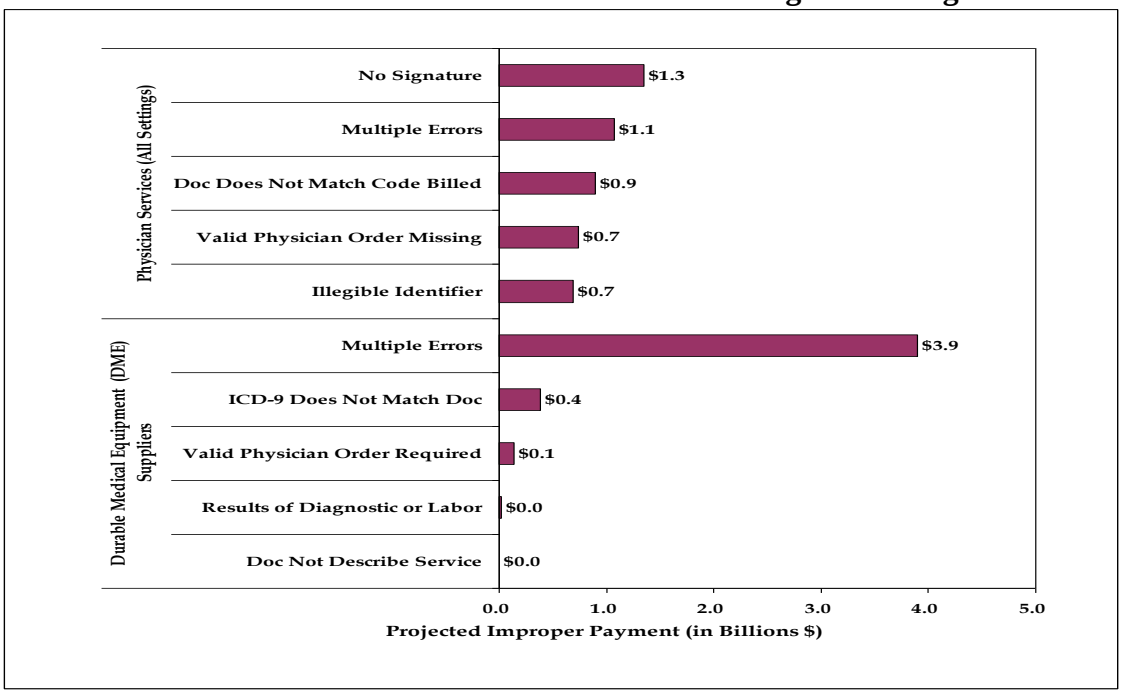
In several cases of insufficient documentation, it was clear that Medicare beneficiaries received services, but the physician's orders or documentation supporting the beneficiary's medical condition was incomplete. While CMS could not conclude that the services were not provided, these claims were counted as overpayments. In some instances, components of the medical documentation were maintained at a third party facility. For instance, although a lab may have billed for a blood test, the physician who ordered the lab test maintained the medical record. If the billing provider did not submit records maintained by a third party, the CERT contractor contacted the third party to request the missing documentation. If the third party failed to submit the documentation to the CERT contractor, CMS scored the inadequately documented items or services as insufficient documentation errors. If the medical documentation submitted for all items or services on a claim was inconclusive to support the billed item or service, the entire payment amount was considered improper. If the submitted medical documentation supported some, but not all, of the billed items or services, only those that were insufficiently documented were considered errors.

Figure 3 displays projected improper payments due to insufficient documentation for physicians and DME by the specific reason for the error. These two clinical settings account for 71 percent of the improper payments due to insufficient documentation. Within each clinical setting the specific reasons are in descending order of improper payments.

Physicians have a multitude of specific reasons that contribute heavily to insufficient documentation errors. These include documentation not describing service, valid physician order required, and no signature when required.

For DME, insufficient documentation errors are mainly categorized as "Multiple Errors" because the majority of the cases involved more than one reason for errors.

Figure 3: Projected Improper Payments (in Billions of Dollars) for Top 5 Reasons for Insufficient Documentation Error for 2 Clinical Settings with Largest Errors



The following are the subcategory descriptions for the physician service and DME insufficient documentation errors in Figure 3.

Physician Services

Insufficient Documentation/Subcategory - No signature

- Medicare requires that services provided / ordered be authenticated by the author, either hand written or electronically signed.

Insufficient Documentation/Subcategory – Documentation does not match code billed

- The submitted information documents a service which is different from the service described by the billed procedure code.

Insufficient Documentation/Subcategory - A valid physician order as required by regulation, interpretive manual or LCD missing (includes physician signature or date)

- For most items and services, a signed and dated physician order is required for payment.

Insufficient Documentation/Subcategory - Illegible identifier

- Medicare requires that services provided / ordered be authenticated by the author, either hand written or electronically signed. When written, the signature must be legible or otherwise identifiable (e.g., signed over the physician's printed name or via signature log). If the signature is illegible or missing, CMS gives the provider an opportunity to attest to their signature. If the attestation is not returned, it is considered an insufficient documentation-illegible identifier error.

Durable Medical Equipment

Insufficient Documentation/Subcategory – Multiple Errors

- Represents claims that have more than one reason for error.

Insufficient Documentation/Subcategory - Though a valid International Classification of Diseases Clinical Modification Volume 9 (**ICD-9) code was submitted, the ICD-9 code alone was insufficient information**

- A valid ICD-9-CM code (per the relevant LCD) was submitted, but there was no documentation to otherwise support the medical necessity of the service.

Insufficient Documentation/Subcategory - A valid physician order as required by regulation, interpretive manual or LCD missing

- For DME items, the supplier must have a detailed written order from the treating physician prior to submitting a claim. For certain items (e.g., power wheelchairs) the detailed written order is required prior to delivery.

Insufficient Documentation/Subcategory – Results of Diagnostic or Lab Tests Missing

- The medical necessity for an item is based on the result of a diagnostic test (e.g., an arterial blood gas for home oxygen therapy), but the result is not included in the documentation.

Insufficient Documentation/Subcategory – Documentation Does Not Describe Service

- The submitted information documents a service which is different from the service described by the billed procedure code.

Geographic Trends

Improper payments vary greatly by geographic location. Identifying the most problematic areas and the differentiating characteristics of those geographic locations can be useful for targeting improper payment reduction efforts.

Figure 4 displays the error rates by state and Figure 5 displays the projected improper payments by state. The states with very high error rates and extremely large expenditures are New York, California, Texas, and Florida. These four states constitute X percent of overall Medicare FFS payments, but 40 percent of total improper payments. New York has the highest error rate of 14.2 percent with $3.7 billion in improper payments. California has an 11.4 percent error rate and $3.4 billion in improper payments. If the improper payment rates for New York, California, Texas, and Florida were reduced halfway between their current error rate and a target error rate of 5 percent, national improper payments would be reduced by $8.2 billion, or 24 percent of total improper payments. Lowering improper payments in these states is critical to lowering the national error rate.

Figure 4: Improper Payment Error Rates by State

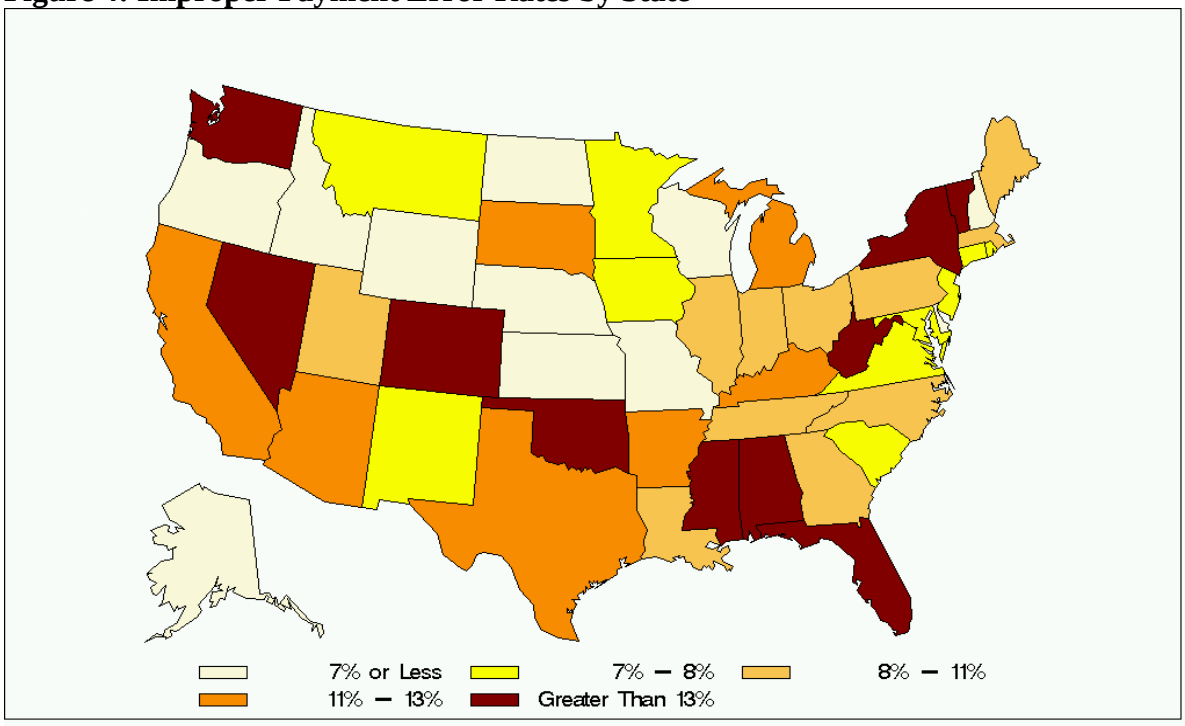


Figure 5: Improper Payments (in Millions of Dollars) by State

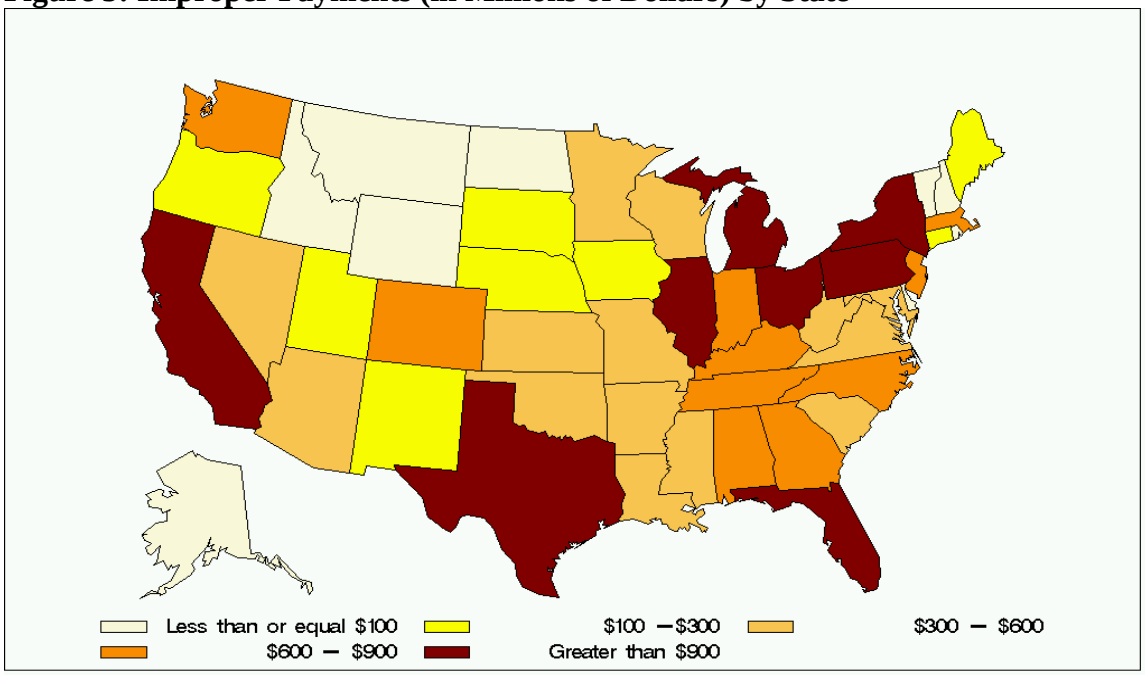


Table 8 displays the improper payments and error rates of the top 10 states for projected improper payments, as well as the breakdown by overpayments and underpayments. New York, California, Texas and Florida have very high overpayment error rates and extremely high overpayments.

Table 8: Projected Improper Payments, Overpayment and Underpayments by State (in Millions of Dollars)[15]

State	Overall		Overpayment		Underpayment	
	Improper Payment	Rate	Improper Payment	Rate	Improper Payment	Rate
Overall	**$34,268.7**	**10.5%**	**$33,208.3**	**10.2%**	**$1,060.4**	**0.3%**
NY	$3,668.7	14.2%	$3,643.5	14.1%	$25.2	0.1%
CA	$3,443.1	11.4%	$3,373.1	11.2%	$70.0	0.2%
FL	$3,350.8	13.4%	$3,247.1	13.0%	$103.7	0.4%
TX	$3,175.5	11.8%	$2,942.0	11.0%	$233.4	0.9%
MI	$1,320.5	12.7%	$1,296.3	12.5%	$24.2	0.2%
IL	$1,266.1	9.0%	$1,248.2	8.8%	$18.0	0.1%
PA	$1,245.6	8.8%	$1,222.6	8.6%	$23.0	0.2%
OH	$1,078.9	8.9%	$1,070.5	8.8%	$8.4	0.1%
NJ	$897.9	7.6%	$815.9	6.9%	$82.0	0.7%
NC	$873.5	9.0%	$851.7	8.8%	$21.8	0.2%

[15] Some columns and/or rows may not sum correctly due to rounding.

CMS Contact

CMS CERT Contact: Jill Nicolaisen (CERT@cms.hhs.gov