

Department of Health and Human Services

**OFFICE OF  
INSPECTOR GENERAL**

**CMS DID NOT ADEQUATELY  
ADDRESS DISCREPANCIES IN THE  
CODING CLASSIFICATION FOR  
KWASHIORKOR**

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# ***Office of Inspector General***

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## Report in Brief

Date: December 2017

Report No. A-03-14-00010

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES  
**OFFICE OF INSPECTOR GENERAL**



### Why OIG Did This Review

Kwashiorkor is a form of severe protein malnutrition. It generally affects children living in tropical and subtropical parts of the world during periods of famine or insufficient food supply. Cases in the United States are rare. For calendar years (CYs) 2006 through 2014, Medicare paid hospitals \$2.5 billion for claims that included a diagnosis code for Kwashiorkor. We issued a series of individual reports to 25 providers nationwide. This report summarizes the key findings and trends identified in those reports.

Our objectives were to determine whether providers were correctly billing for Kwashiorkor and whether the Centers for Medicare & Medicaid Services (CMS) had adequate policies and procedures in place to address discrepancies in the International Classification of Diseases, Clinical Modification (ICD-CM) classification for Kwashiorkor.

### How OIG Did This Review

In a series of reviews, we reviewed 4,393 claims totaling \$108.1 million in Medicare payments for inpatient claims that contained diagnosis code 260. We evaluated compliance with selected Medicare billing requirements and calculated a nonstatistical estimate of the potential nationwide impact of Kwashiorkor overpayments.

## CMS Did Not Adequately Address Discrepancies in the Coding Classification for Kwashiorkor

### What OIG Found

Providers incorrectly billed diagnosis code 260 for Kwashiorkor for inpatients who did not have the disease. We reviewed the medical records for 2,145 inpatient claims at 25 providers and found that all but 1 claim incorrectly included the diagnosis code for Kwashiorkor, resulting in overpayments in excess of \$6 million.

The ICD-CM coding classification contained a discrepancy between the tabular list and the alpha index on the use of diagnosis code 260. In the alpha index, four other malnutrition diagnoses corresponded to diagnosis code 260, but in the tabular list, diagnosis code 260 was only for Kwashiorkor.

CMS did not have adequate policies and procedures in place to address this discrepancy, resulting in a total potential loss of approximately \$102 million during CYs 2006 through 2014. Even though CMS was aware of the discrepancy, it did not take any separate action to address it.

While our reviews have successfully returned \$5.7 million to the Medicare Trust Funds, we estimate that Medicare could have saved approximately \$102 million from CYs 2006 through 2014 if the coding discrepancy had been immediately corrected.

### What OIG Recommends and CMS Comments

We recommend that CMS: (1) review provider Medicare claims to ensure that the diagnosis code for Kwashiorkor is being used correctly by providers and (2) formalize procedures for notifying providers of the correct way to bill diagnosis codes when there is a discrepancy in the coding classification between the alpha index and the tabular list.

In the individual reports, we recommended that each of the 25 hospitals refund the overpayments and strengthen controls to ensure full compliance with Medicare billing requirements. The 25 hospitals that we reviewed concurred with 42 of the 50 recommendations and repaid \$5.7 million in overpayments. All of the providers stopped incorrectly using diagnosis code 260.

In written comments, CMS concurred with our recommendations. In 2017, CMS requested that the American Hospital Association publish additional coding guidance on the use of the Kwashiorkor diagnosis code to address concerns that it was still being used incorrectly by some providers.

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## INTRODUCTION

### WHY WE DID THIS REVIEW

Kwashiorkor is a form of severe protein malnutrition. It generally affects children living in tropical and subtropical parts of the world during periods of famine or insufficient food supply. Cases in the United States are rare. For calendar years (CYs) 2006 through 2014, Medicare paid hospitals \$2.47 billion for claims that included a diagnosis code for Kwashiorkor. Starting in January 2014, the Office of Inspector General issued a series of individual reports to 25 providers nation-wide that had claims that included the diagnosis code for Kwashiorkor.<sup>1</sup> This report summarizes the key findings and trends identified in those reports.

### OBJECTIVES

Our objectives were to determine whether providers were correctly billing for Kwashiorkor and whether the Centers for Medicare & Medicaid Services (CMS) had adequate policies and procedures in place to address discrepancies in the coding classification for Kwashiorkor.

### BACKGROUND

#### The Medicare Program

Medicare Part A provides inpatient hospital insurance benefits and coverage of extended care services after hospital discharge. CMS administers the Medicare program and contracts with Medicare contractors to, among other things, process and pay claims submitted by hospitals, including long-term care hospitals.

#### Hospital Inpatient Prospective Payment System

Under the inpatient prospective payment system, CMS pays inpatient hospital costs at predetermined rates for patient discharges. The rates vary according to the diagnosis-related group (DRG) to which a beneficiary's stay is assigned and the severity level of the patient's diagnosis. The DRG payment is, with certain exceptions, intended to be payment in full to the hospital for all inpatient costs associated with the beneficiary's stay. The DRG and severity level are determined according to diagnosis codes established by the International Classification of Diseases (ICD) coding classification. The ICD coding classification established diagnosis code 260 for Kwashiorkor.

For discharges occurring on or after October 1, 2007, CMS implemented a new DRG system called Medicare Severity (MS)-DRG to better account for severity of illness for Medicare beneficiaries. There are three levels of severity in the MS-DRG based on secondary diagnosis codes: (1) Major Complication/Comorbidity (MCC), which is the highest level of severity; (2) Complication/Comorbidity (CC), which is the next level of severity; and (3) Non-complication/Comorbidity (Non-CC), which does not significantly affect the severity of

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<sup>1</sup> See Appendix A for a list of the 25 audits we conducted.

illness or resource use. Because Kwashiorkor is classified as an MCC, using diagnosis code 260 may increase the DRG payment.

### **International Classification of Diseases, Clinical Modification**

The ICD is the international standard diagnostic tool for epidemiology, health management, and clinical purposes. The ICD is maintained by the World Health Organization, the directing and coordinating authority for health within the United Nations System. The ICD, Clinical Modification (ICD-CM) is an adaptation created by the U.S. National Center for Health Statistics (NCHS) and is used in assigning diagnostic and procedure codes associated with inpatient, outpatient, and physician office utilization in the United States.

The ICD, 9<sup>th</sup> Revision, CM (ICD-9), was adopted for use in the United States in January 1979 and was updated to the ICD, 10<sup>th</sup> Revision, CM (ICD-10) on October 1, 2015. The ICD-9 coding classification was in effect during our audit periods.

Changes to the classification are enacted by the four organizations that make up the cooperating parties for the ICD-9 and ICD-10: the American Hospital Association (AHA), the American Health Information Management Association, CMS, and NCHS.

### **Malnutrition Coding Classification**

The ICD-9 coding classification separated malnutrition into several codes to capture the degree and specific type of malnutrition. The ICD-9 coding classification had an alpha index showing the diagnosis codes by name and a separate tabular list showing the diagnosis codes by number. The alpha index included a list of malnutrition subcategories by name, matching each subcategory to a numerical diagnosis code. The tabular list was composed of a list of numerical diagnosis codes with a description of the corresponding diagnosis. Once a provider identified a diagnosis code in the alpha index based on the malnutrition subcategory name, the ICD-9 coding guidelines required the provider to verify that the diagnosis code was also correct based on the tabular list. Providers were not to code from the alpha index alone. If there was a discrepancy or the provider had a question about the coding classification, CMS instructed them to direct these questions to AHA or their Medicare Administrative Contractor. AHA publishes quarterly coding clinics that answer specific coding questions asked by providers.

### **HOW WE CONDUCTED THIS REVIEW**

We conducted individual reviews at 19 inpatient hospitals and 6 long-term care hospitals from January 2014 to August 2016. The reviews covered a total of 4,393 claims totaling \$108,148,252 in Medicare payments for inpatient hospital claims that contained diagnosis code 260. We did not review managed care claims or claims that were previously reviewed by a

Recovery Audit Contractor (RAC).<sup>2</sup> We evaluated compliance with selected Medicare billing requirements but did not use medical review to determine whether the services were medically necessary. The 25 reports issued do not represent an overall assessment of all claims submitted by the providers for Medicare reimbursement.

While conducting the 25 reviews, we met with and interviewed CMS agency officials and Centers for Disease Control and Prevention (CDC) agency officials to determine which agency has the authority and responsibility to issue guidance and address discrepancies between the ICD-9 alpha index and tabular list. We also reviewed ICD-9 Coordination and Maintenance Committee meeting minutes held by CDC and the guidance issued via the AHA Coding Clinic publications.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix B contains the details of our audit scope and methodology.

## FINDINGS

Providers incorrectly billed diagnosis code 260 for Kwashiorkor for inpatients who did not have the disease. We reviewed 4,393 inpatient claims covering CYs 2010 through 2014 at 25 providers. For 2,248 of the 4,393 inpatient claims, removing diagnosis code 260 produced no change in the DRG or payment amount. We reviewed the medical records for the remaining 2,145 inpatient claims and found that all but 1 claim incorrectly included the diagnosis code for Kwashiorkor, resulting in overpayments of \$6,030,135. We determined that all of the providers should have used codes for other forms of malnutrition or no malnutrition code at all instead of diagnosis code 260. The ICD-9 coding classification contained a discrepancy between the tabular list and the alpha index on the use of diagnosis code 260. According to the alpha index, four other malnutrition diagnoses corresponded to diagnosis code 260. However, according to the ICD-9 tabular list, diagnosis code 260 was only for Kwashiorkor. Although CMS knew about the discrepancy in the ICD-9 coding classification for diagnosis code 260, it did not have adequate policies and procedures in place to address the discrepancy. This resulted in a total potential loss of approximately \$102 million<sup>3</sup> during CYs 2006 through 2014.

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<sup>2</sup> The Medicare Fee-for-Service RAC Program was created as a demonstration program through the Medicare Modernization Act of 2003 and established under section 1893(h) of the Social Security Act to identify and recover overpayments. We removed claims previously reviewed by a RAC to avoid the possibility of penalizing the hospital twice for the same claim.

<sup>3</sup> Appendix C contains detailed support for this nonstatistical estimate.



## **FEDERAL REQUIREMENTS AND GUIDANCE**

Medicare payments may not be made for items and services that “are not reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member” (the Social Security Act, § 1862(a)(1)(A)). Federal regulations state that the provider must furnish to the Medicare contractor sufficient information to determine whether payment is due and the amount of the payment (42 CFR § 424.5(a)(6)).

The *Medicare Claims Processing Manual* (the Manual) requires providers to complete claims accurately so that Medicare contractors may process them correctly and promptly (Pub. No. 100-04, chapter 1, § 80.3.2.2). The Manual also states that the principal diagnosis must be reported and that any other applicable diagnosis codes must be included in inpatient claims and are used in determining the appropriate DRG. It specifies that the provider should report diagnoses for up to 24 additional conditions “if they coexisted at the time of admission or developed subsequently, and which had an effect upon the treatment or length of stay” (the Manual, chapter 23, § 10.2).

The ICD-9 coding classification established diagnosis code 260 for Kwashiorkor. In addition, the *Medicare Contractor Beneficiary and Provider Communications Manual* states that coding related questions are handled by the AHA Coding Clinic. The Third Quarter 2009 AHA Coding Clinic stated that code 260 is only appropriate when the provider specifically documents Kwashiorkor.

## **PROVIDERS INCORRECTLY BILLED FOR KWASHIORKOR**

Providers incorrectly billed diagnosis code 260 for Kwashiorkor for inpatients who did not have the disease. We reviewed 4,393 inpatient claims at 25 providers. For 2,248 of the 4,393 inpatient claims, removing diagnosis code 260 produced no change in the DRG or payment amount. We requested and reviewed medical record documentation for the remaining 2,145 claims. We reviewed each medical record to determine whether a physician documented that the patient had Kwashiorkor. If there was no evidence of a physician diagnosis of Kwashiorkor, we asked the provider to verify whether the patient had Kwashiorkor. We determined that for all but one claim, providers used diagnosis code 260 but should have used codes for other forms of malnutrition or no malnutrition code at all instead of diagnosis code 260. These errors resulted in overpayments totaling \$6,030,135.

We recommended that each of the 25 hospitals refund the overpayments and strengthen controls to ensure full compliance with Medicare billing requirements. The 25 hospitals that we reviewed concurred with 42 of the 50 recommendations and repaid \$5,684,016 in overpayments to date. All of the providers stopped incorrectly using diagnosis code 260.

## DISCREPANCY IN CODING CLASSIFICATION

### Coding Classification Was Unclear on the Use of Diagnosis Code 260

The ICD-9 coding classification contained a discrepancy between the tabular list and the alpha index. Table 1 shows different malnutrition diagnoses listed in the alpha index. According to the alpha index, each of the malnutrition diagnoses listed in the table corresponded to diagnosis code 260.

**Table 1: ICD-9 Alpha Index Coding**

Word Description in Alpha Index	Corresponds to Code
Kwashiorkor	260
Malnutrition (calorie) malignant	260
Malnutrition (calorie) protein	260
Protein deficiency	260
Protein malnutrition	260

However, according to the ICD-9 tabular list, diagnosis code 260 was only for Kwashiorkor. Kwashiorkor is classified as an MCC and has an increased DRG payment because it requires extensive treatment. The other diagnosis descriptions that the alpha index associated with diagnosis code 260 are more common, do not require extensive treatment, and were not MCCs.

### Inadequate Response by CMS Regarding ICD-9 Definition of Kwashiorkor

According to CMS officials, CMS became aware of the discrepancy in the ICD-9 coding classification for diagnosis code 260 in 2007. However, CMS did not adequately address the discrepancy, resulting in a total potential loss of approximately \$102 million during CYs 2006 through 2014. Providers' persistent use of diagnosis code 260 from 2006 through 2009 occurred because CMS has no formal policies or procedures in place to address discrepancies between the alpha index and the tabular list. Ultimately, providers are responsible for accurate coding and billing and should have used the ICD-9 code that provided the highest degree of accuracy and completeness for the diagnosis. When questions arise, CMS defers to AHA to answer providers' coding questions through direct correspondence and quarterly coding clinics.<sup>4</sup> Even though CMS was aware of the discrepancy in the classification, it did not take any direct action to address it.

AHA eventually provided clarification in its Third Quarter 2009 Coding Clinic, which answered a question about using two malnutrition diagnosis codes on one inpatient claim and stated, "Code 260, Kwashiorkor, is not appropriate since the provider did not specifically document this condition." After this clarification providers dramatically reduced the use of diagnosis code

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<sup>4</sup> CMS, Medicare Contractor Beneficiary and Provider Communications Manual, chapter 6, 30.1.1.

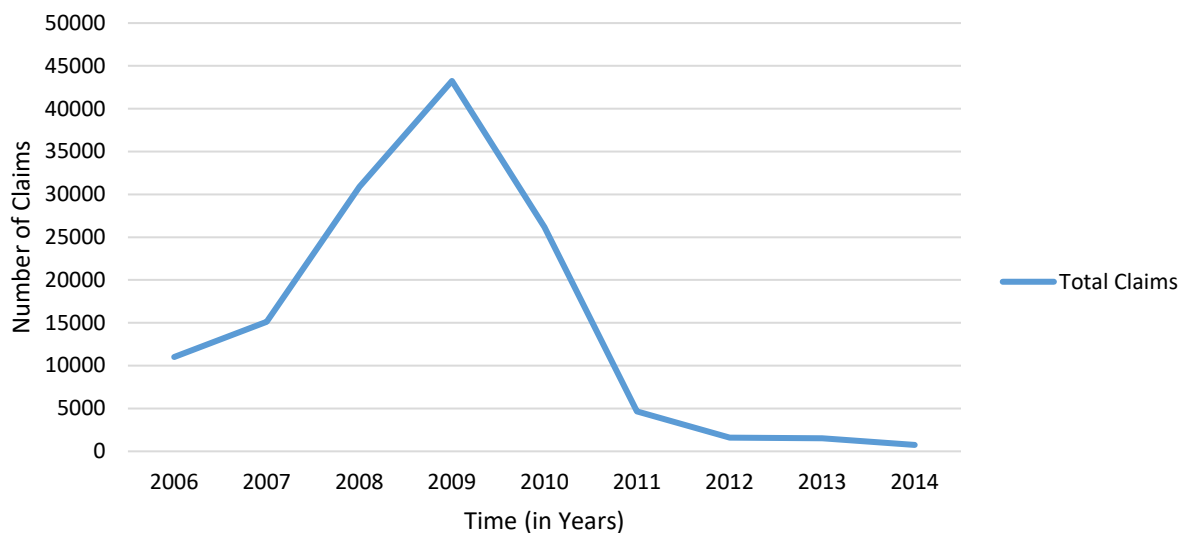
260. However, many providers continued to incorrectly use diagnosis code 260.<sup>5</sup> As of October 1, 2015, the discrepancy in the ICD-9 coding classification for diagnosis code 260 was corrected with the issuance of the ICD-10 codes. However, if CMS had taken action before AHA provided the clarification, providers might not have billed diagnosis code 260 incorrectly.

### USE OF DIAGNOSIS CODE 260 DRAMATICALLY INCREASED AND THEN DECREASED

In CY 2006, approximately 11,000 Medicare claims included diagnosis code 260. Over the next 3 years, after the implementation of the MS-DRG system, the number of claims that included diagnosis code 260 rose to approximately 45,000 for CY 2009.

The figure below illustrates the dramatic increase in the number of claims submitted by providers with diagnosis code 260 from 2006 to 2009. After this period, there was a dramatic drop in the use of diagnosis code 260, and few claims included this code as of CY 2014.

**Figure: Increased Use of Diagnosis Code 260**



### RECOMMENDATIONS

Our reviews of claims covering CYs 2010 through 2014 showed that providers incorrectly billed diagnosis code 260 for Kwashiorkor for inpatients who did not have the disease. On October 31, 2009, AHA published its Third Quarter 2009 Coding Clinic. In response to a question about claims containing two malnutrition codes, AHA stated that diagnosis code 260 is for Kwashiorkor only. This discrepancy in the coding classification was corrected with the issuance of the ICD-10 codes on October 1, 2015. While our reviews have successfully returned \$5,684,016 of the \$6,030,135 to the Medicare Trust Funds to date, we estimate that Medicare

<sup>5</sup> The 25 reviews we conducted included claims from CYs 2010 through 2014, after the Coding Clinic clarified the proper use of code 260.

could have saved approximately \$102 million from CY 2006 through CY 2014 if the coding discrepancy had been immediately corrected. Therefore we recommend that CMS:

- review provider Medicare claims to ensure that the diagnosis code for Kwashiorkor is being used correctly by providers and
- formalize procedures for notifying providers of the correct way to bill diagnosis codes when there is a discrepancy in the coding classification between the alpha index and the tabular list.

### **CMS COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE**

In written comments, CMS concurred with our recommendations. In 2017, CMS requested that AHA publish additional coding guidance on the use of the Kwashiorkor diagnosis code to address concerns that it was still being used incorrectly by some providers. CMS also provided a separate document that suggested technical changes to the draft report.

CMS's comments are included as Appendix D. The document suggesting technical changes to the draft report is not attached.

We appreciate CMS's concurrence with our recommendations and the action taken to address them. Because CMS stated in its comments that it has procedures in place to request that AHA issue coding guidance if it determines that a certain code is being used improperly, we changed our recommendation to request that CMS formalize these procedures to ensure that action is taken as soon as CMS is aware of a discrepancy in the coding classification.<sup>6</sup>

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<sup>6</sup> In our draft report, we recommended that CMS develop these procedures. Because the procedures exist but have not been implemented in a formal way, we revised the recommendation as indicated.

**APPENDIX A: RELATED OFFICE OF INSPECTOR GENERAL REPORTS**

<b>Report Title</b>	<b>Report Number</b>	<b>Date Issued</b>
<i>Cornerstone Hospital of Austin Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00009</u></a>	8/3/2016
<i>Cornerstone Hospital of Southwest Louisiana Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00008</u></a>	7/6/2016
<i>Cornerstone Hospital of Bossier City Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00006</u></a>	3/30/2016
<i>Promise Hospital of Ascension Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00007</u></a>	2/1/2016
<i>Kindred Hospital of Central Ohio Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00002</u></a>	10/19/2015
<i>Vibra Hospital of Amarillo Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00001</u></a>	9/3/2015
<i>Jefferson Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00005</u></a>	8/20/2015
<i>The Hospital of Central Connecticut Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00003</u></a>	6/1/2015
<i>Cox Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-15-00004</u></a>	5/19/2015
<i>Rex Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-14-00008</u></a>	2/27/2015
<i>New York Hospital Queens Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-13-00030</u></a>	2/27/2015
<i>Methodist Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-14-00005</u></a>	1/30/2015
<i>Baptist Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-14-00007</u></a>	12/23/2014
<i>Overlook Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-14-00003</u></a>	10/10/2014
<i>Providence Portland Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-13-00034</u></a>	9/26/2014
<i>Mother Frances Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-14-00006</u></a>	9/9/2014
<i>Mount Sinai Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-13-00028</u></a>	5/6/2014
<i>Morristown Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-13-00036</u></a>	5/6/2014
<i>Oakwood Hospital and Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-13-00032</u></a>	4/3/2014
<i>University Hospitals Case Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#"><u>A-03-13-00031</u></a>	3/5/2014

<i>Butler Memorial Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#">A-03-13-00014</a>	3/4/2014
<i>WellSpan York Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#">A-03-13-00015</a>	2/20/2014
<i>Palmetto Health Baptist Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#">A-03-13-00029</a>	2/11/2014
<i>Christus Saint Vincent Regional Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#">A-03-13-00035</a>	1/28/2014
<i>Mercy Medical Center Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor</i>	<a href="#">A-03-13-00033</a>	1/23/2014

## APPENDIX B: AUDIT SCOPE AND METHODOLOGY

### SCOPE

We conducted individual reviews at 25 inpatient hospitals, of which 6 were long-term care hospitals. The reviews covered a total of 4,393 claims totaling \$108,148,252 in Medicare payments for inpatient hospital claims that contained diagnosis code 260. We evaluated compliance with selected Medicare billing requirements but did not use medical review to determine whether the services were medically necessary. The 25 reports issued do not represent an overall assessment of all claims submitted by the providers for Medicare reimbursement.

During the course of completing the 25 reviews, we met with and interviewed CMS agency officials and CDC agency officials to determine which agency has the authority or responsibility or both to issue guidance and address the discrepancy in the ICD-9 coding classification. We also reviewed ICD-9 Coordination and Maintenance Committee meeting minutes held by CDC and the guidance issued in the AHA Coding Clinic publications.

We issued our individual reports from January 2014 to August 2016.

### METHODOLOGY

To accomplish our objective for each provider review, we:

- reviewed Federal laws, regulations, and guidance;
- extracted each hospital's inpatient paid claims data from CMS's National Claims History file for the audit period;
- selected all paid claims that included diagnosis code 260 (Kwashiorkor);
- removed all claims that were previously reviewed by a RAC;
- removed all claims for which removing the diagnosis code for Kwashiorkor did not change the Medicare payment;
- reviewed available data from CMS's Common Working File for the selected claims to determine whether the claims had been cancelled or adjusted;
- repriced each selected claim to verify that the original payment by the CMS contractor was made correctly;
- requested that all of the providers conduct their own review of the selected claims to determine whether the diagnosis code for Kwashiorkor was used correctly;

- reviewed the medical record documentation that the hospitals provided to support the selected claims;
- discussed the incorrectly coded claims with hospital officials to determine the underlying causes of noncompliance with Medicare requirements;
- substituted a corrected diagnosis code based on the documentation provided and calculated the correct payments for those claims requiring adjustments; and
- discussed the results of our review with hospital officials.

To accomplish our objective for this review, we:

- reviewed Federal laws, regulations, and guidance;
- met with CMS and CDC officials to discuss current and future policies and procedures regarding the assignment of diagnosis codes;
- calculated a nonstatistical estimate to determine the potential impact of the systemic issue associated with Kwashiorkor overpayments on the Medicare program for nation-wide providers who were not subject to Office of Inspector General review; and
- discussed the results of our review with CMS officials.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.



## APPENDIX C: MATHEMATICAL CALCULATION PLAN

### DESCRIPTION OF MATHEMATICAL CALCULATION

We calculated a nonstatistical estimate of the total overpayments made to all providers that submitted 50 or more claims that included diagnosis code 260 during CYs 2006 through 2014. We based the mathematical calculation for this nonstatistical estimate on the results of the 25 audits we conducted during CYs 2012 through 2016. These 25 audits included claims from CYs 2010 through 2014. Consequently, the nonstatistical estimate covers providers that we did not audit and time periods that occurred before, during, and after the audit periods of the 25 audits.

### MATHEMATICAL CALCULATION METHODOLOGY

#### Nonstatistical Estimate Calculation

Table 3 below shows the results of the 25 audits we conducted, and Table 4 shows nation-wide claims information for the period of our estimate. We used information from these tables to calculate the nonstatistical estimate.

**Table 3: Results of Office of Inspector General Audits**

Total number of claims reviewed	4,393
Dollar value of claims reviewed	\$108,148,252
Overpayment amount	\$6,030,135

**Table 4: Nation-wide Claims Information for CYs 2006 Through 2014**

Total number of claims with diagnosis code 260 for all providers nation-wide	134,940
Dollar value of claims with diagnosis code 260 for all providers nation-wide that submitted 50 or more claims	\$1,831,639,963

We calculated the nonstatistical estimate using the following formula:

$$\text{Overpayment Amount of Reviewed Claims} \div \text{Dollar Value of Reviewed Claims} \times \text{Dollar Value of Claims with Diagnosis Code 260 for All Providers That Submitted 50 or More Claims}$$

Using the information from Tables 3 and 4, this calculation results in an estimated overpayment of approximately \$102 million.

## Assumptions

Because the calculation is nonstatistical, it is dependent on the assumption that the dollar error rate<sup>7</sup> for the claims we reviewed is a reasonable estimate for the dollar error rate for the claims we did not review. In support of this assumption, we found that higher dollar transactions tended to have lower dollar error rates and that the claims we reviewed tended to have higher dollar values than claims we did not review. These results provide evidence that the dollar error rate calculated from the reviewed claims does not overstate the dollar value of claims we did not review. Our assumption is further supported by the systematic nature of the billing issue. In fact, all but 1 of the 4,393 Kwashiorkor claims reviewed at the 25 selected providers had been billed incorrectly.

The 25 audits we conducted did not cover all of the CYs included in the period of our review and did not include any providers that submitted fewer than 125 claims. To examine the potential impact of these coverage limitations, we analyzed the data using a series of regression models. This analysis did not identify a significant relationship between the dollar error rate and the claim year or between the dollar error rate and the number of claims submitted by a provider. The lack of relationship between these variables supports our assumption that the dollar error rate calculated based on reviewed claims is reasonable despite the coverage limitations of the 25 audits we conducted. Nevertheless, to be conservative in our estimation approach, we excluded from our calculation providers that submitted fewer than 50 claims during the period of our estimation.<sup>8</sup>

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<sup>7</sup> The dollar error rate refers to the total dollar amount of the error caused by inappropriate use of diagnosis code 260 divided by the total payment amount of the associated claim.

<sup>8</sup> By excluding these providers we, in effect, treated them as if they had no improper overpayments caused by inappropriate use of diagnosis code 260.



## APPENDIX D: CMS COMMENTS

**DATE:** AUG 10 2017

**TO:** Daniel R. Levinson  
Inspector General

**FROM:** Seema Verma /SeemaVerma/  
Administrator

**SUBJECT:** Office of Inspector General (OIG) Draft Report: CMS Did Not Adequately Address Discrepancies in the Coding Guidelines for Kwashiorkor (A-03-14-00010)

The Centers for Medicare & Medicaid Services (CMS) appreciates the opportunity to review and comment on the Office of Inspector General's (OIG) draft report. CMS is strongly committed to robust program integrity efforts in Medicare. Ensuring that providers use diagnosis codes correctly is an important factor in ensuring that Medicare funds are spent appropriately.

The International Classification of Diseases, Clinical Modification is used by health care providers to assign diagnosis and procedure codes for inpatient, outpatient, and physician office billing. Since 1963, the American Hospital Association has been the clearinghouse for proper use of these codes. The American Hospital Association issues the Coding Clinic, a quarterly publication of coding guidance which is recognized by CMS as an official source of coding advice. CMS distributes the American Hospital Association Coding Clinic publications to its contractors each quarter.

CMS takes seriously the importance of maintaining standardized coding guidelines for providers and has procedures in place to request that the American Hospital Association publish updated coding advice on an expedited basis if CMS determines that a certain code is being used improperly. As a member of the American Hospital Association Coding Clinic Editorial Advisory Board, CMS supported the American Hospital Association providing a coding clarification when the American Hospital Association became aware of provider issues with the code for Kwashiorkor. This clarification was published in 2009 and as OIG noted, greatly reduced improper use of this code. In 2017, CMS further requested American Hospital Association expedite additional coding guidance on use of the Kwashiorkor code to address concerns that it was still being used improperly by some providers.

OIG's recommendations and CMS' responses are below.

### **OIG Recommendation**

CMS should review provider Medicare claims to ensure the diagnosis code for Kwashiorkor is being used correctly by providers.

### **CMS Response**

CMS concurs with this recommendation. CMS will complete medical review on a sample of claims to ensure the diagnosis code for Kwashiorkor is being used correctly by providers.

### **OIG Recommendation**

CMS should develop procedures for notifying providers of the correct way to bill diagnosis codes when there is a discrepancy between the International Classification of Diseases, Clinical Modification alpha index and tabular list.

### **CMS Response**

CMS concurs with this recommendation. CMS has procedures in place to request that the American Hospital Association publish coding advice on an expedited basis if CMS determines that a certain code is being used improperly; however, CMS will work to strengthen this process by ensuring the American Hospital Association is aware of coding discrepancies as soon as CMS is made aware that there is an issue, and asking that coding guidance be issued.