

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

**DRG 79 VALIDATION STUDY UPDATE:
RESPIRATORY INFECTIONS AND
INFLAMMATIONS**



FEBRUARY 1993

OFFICE OF INSPECTOR GENERAL

The mission of the Office of Inspector General (OIG), as mandated by Public Law 95-452, as amended, is to protect the integrity of the Department of Health and Human Services (HHS) programs as well as the health and welfare of beneficiaries served by those programs. This statutory mission is carried out through a nationwide network of audits, investigations, and inspections conducted by three OIG operating components: the Office of Audit Services, the Office of Investigations, and the Office of Evaluations and Inspections. The OIG also informs the Secretary of HHS program and management problems and recommends courses to correct them.

OFFICE OF AUDIT SERVICES

The OIG's Office of Audit Services (OAS) provides all auditing services for HHS, either by conducting audits with its own audit resources or by overseeing audit work done by others. Audits examine the performance of HHS programs and/or its grantees and contractors in carrying out their respective responsibilities and are intended to provide independent assessments of HHS programs and operations in order to reduce waste, abuse, and mismanagement and to promote economy and efficiency throughout the Department.

OFFICE OF INVESTIGATIONS

The OIG's Office of Investigations (OI) conducts criminal, civil, and administrative investigations of allegations of wrongdoing in HHS programs or to HHS beneficiaries and of unjust enrichment by providers. The investigative efforts of OI lead to criminal convictions, administrative sanctions, or civil money penalties. The OI also oversees State Medicaid fraud control units which investigate and prosecute fraud and patient abuse in the Medicaid program.

OFFICE OF EVALUATION AND INSPECTIONS

The OIG's Office of Evaluation and Inspections (OEI) conducts short-term management and program evaluations (called inspections) that focus on issues of concern to the Department, the Congress, and the public. The findings and recommendations contained in these inspection reports generate rapid, accurate, and up-to-date information on the efficiency, vulnerability, and effectiveness of departmental programs.

Amy L. Lockwood of BOTEC Analysis Corporation prepared this report with direction from Janet W. Knight, BOTEC Project Director, and David C. Hsia, OIG Project Officer. Contract information and project participants are listed in Appendix 1 to this inspection.

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

**DRG 79 VALIDATION STUDY UPDATE:
RESPIRATORY INFECTIONS AND
INFLAMMATIONS**



FEBRUARY 1993 OEI-12-89-00193

EXECUTIVE SUMMARY

PURPOSE

This inspection reabstracted on a blinded basis, the International Classification of Diseases, Ninth Revision, Clinical Modification codes from a sample of Medicare discharges billed as diagnosis-related group (DRG) 79: Respiratory infections and inflammations. It compared the reabstracted DRG to the hospital-billed DRG for reimbursement changes. The sample was nationally representative and covered all of 1988, the most recent data available.

This inspection updated a previous Office of Inspector General (OIG) study. For 1985, the OIG found 18.4 percent errors among 74 reabstractions, improperly over-reimbursing hospitals by a projected \$28.4 million. This inspection used a parallel methodology to make these studies statistically comparable. Statistical tests determined whether numeric differences between 1985 results and 1988 results were real (statistically significant) or could be attributed to random error.

FINDINGS

DRG 79 billing error reduced

Of 123 discharges reabstracted for this inspection, 11 (8.9 percent) were incorrectly assigned to DRG 79. This was a statistically-significant improvement over the 18.4 percent error rate for DRG 79 in 1985. This rate also significantly differs from the 14.7 percent errors for all discharges in 1988.

Financial impact of DRG 79 billing error not reduced significantly

This inspection projected that discharges incorrectly assigned to DRG 79 over-reimbursed hospitals \$22.7 million. This result did not significantly differ from the \$28.4 million over-reimbursement in 1985. The increase in the number of DRG 79 bills in 1988 offset the decrease in the proportion of errors.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION 1

FINDINGS 4

• Errors reduced 4

• Most errors over-reimbursed hospitals 4

• Hospitals still over-reimbursed 4

ENDNOTES 6

AGENCY COMMENTS 7

APPENDICES

A: Project participants A-1

B: ICD-9-CM procedure codes in DRG 79 B-1

C: Sample representativeness C-1

D: DRG 79 billing errors, 1985 and 1988 D-1

E: DRG 79 case-mix index change, 1985 and 1988 E-1

F: Reasons for DRG 79 errors, 1985 and 1988 F-1

INTRODUCTION

Background

Diagnosis-related group (DRG) 79: Respiratory infections and inflammations; includes 168 International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes. These ICD-9-CM codes identify infectious diseases, particularly tuberculin bacillus exposure or tuberculosis infection, as well as anthrax, mycobacterial infections, empyema, abscesses, and similar infectious conditions. Tuberculosis incidence had decreased with improved standards of living and the advent of antibiotics. It has recently become endemic again, primarily in immigrant and homeless populations. This resurgence may also affect Medicare beneficiaries.

DRG 79's weight increased from 1.7795 in 1985 to 2.0777 in 1988. Since 1985, the Health Care Financing Administration (HCFA) altered DRG 79 to eliminate "age over 69" as a complication code and created DRGs 474 and 475 for ventilator-assisted patients. These changes shifted billings in one quarter of the data collection period for this inspection.

In a previous study, the OIG found that DRG 79 had a disproportionately high proportion of billing errors.¹ Correct ICD-9-CM coding would have grouped 18.4 percent of its 74 reabstractions to different DRGs in 1985. These billing errors over-reimbursed the hospitals a projected \$28.4 million.

This inspection updated the previous study using 1988 data, the most recent available. It used a parallel methodology to make these inspections statistically comparable.

Methodology

This inspection randomly selected 123 DRG 79 discharges from 26 hospitals. The study population consisted of 102,561 Medicare-reimbursed DRG 79 discharges during Calendar Year 1988. The design excluded discharges from specialty institutions such as children's hospitals, tuberculosis units, and psychiatric facilities. It also excluded discharges in Maryland and New Jersey, which the PPS still exempted in 1988. Finally, it excluded bills for pediatric, obstetric, and psychiatric DRGs (principally drug and alcohol rehabilitation performed by a general hospital).² Unlike its 1985 predecessor, it included hospitals established since the advent of the PPS in 1983.

The OIG requested that hospitals send complete copies of the sampled medical records to the OIG's contractor, Baxter-Health Data Institute (HDI) of Lexington, MA. The OIG followed-up missing records and issued subpoenas to compel the cooperation of four hospitals.

The OIG contracted with the American Medical Record Association (AMRA, now named the American Health Information Management Association, or AHIMA) to

reabstract the charts. The AMRA selected ICD-9-CM codes supported by the record, determined the principal diagnosis, and grouped to select the correct DRG. To assure that the original ICD-9-CM codes and DRGs did not affect the reabstraction, the AMRA coders conducted their work without knowledge of the original ICD-9-CM codes and DRGs. The coders had instructions not to treat marginal problems or honest differences in judgment about appropriate coding as DRG errors. This standard should have produced a conservative estimate of the proportion of discharges having DRG errors. A series of reliability checks verified the reproducibility and accuracy of the AMRA coding. The AMRA also identified the reasons why a hospital's bill differed from the correct codes.

BOTEC Analysis Corporation of Cambridge, Massachusetts (BOTEC) edited the AMRA database, checked the sample's representativeness, and conducted statistical analyses of the correlates and financial consequences of DRG 79 miscoding. It also reweighted the 1985 data to improve comparability with this inspection. Statistical tests determined whether numeric differences between 1985 results and 1988 results were real (statistically significant) or could be attributed to random error.

Representativeness

The sample generally resembled the underlying population of DRG 79 bills with respect to hospital and patient characteristics. The one exception to this was the distribution of the sample with respect to hospital size. [Appendix C].

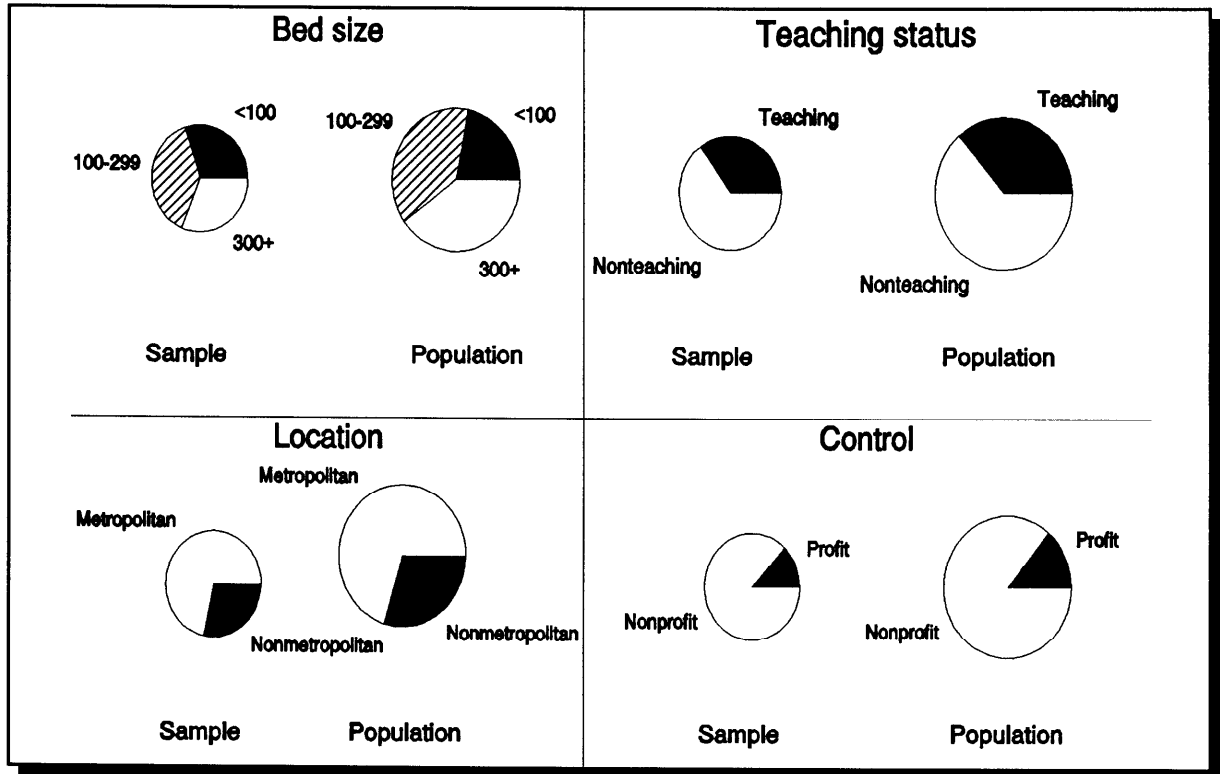


Figure 1: DRG 79 sample representativeness by hospital demography, 1988

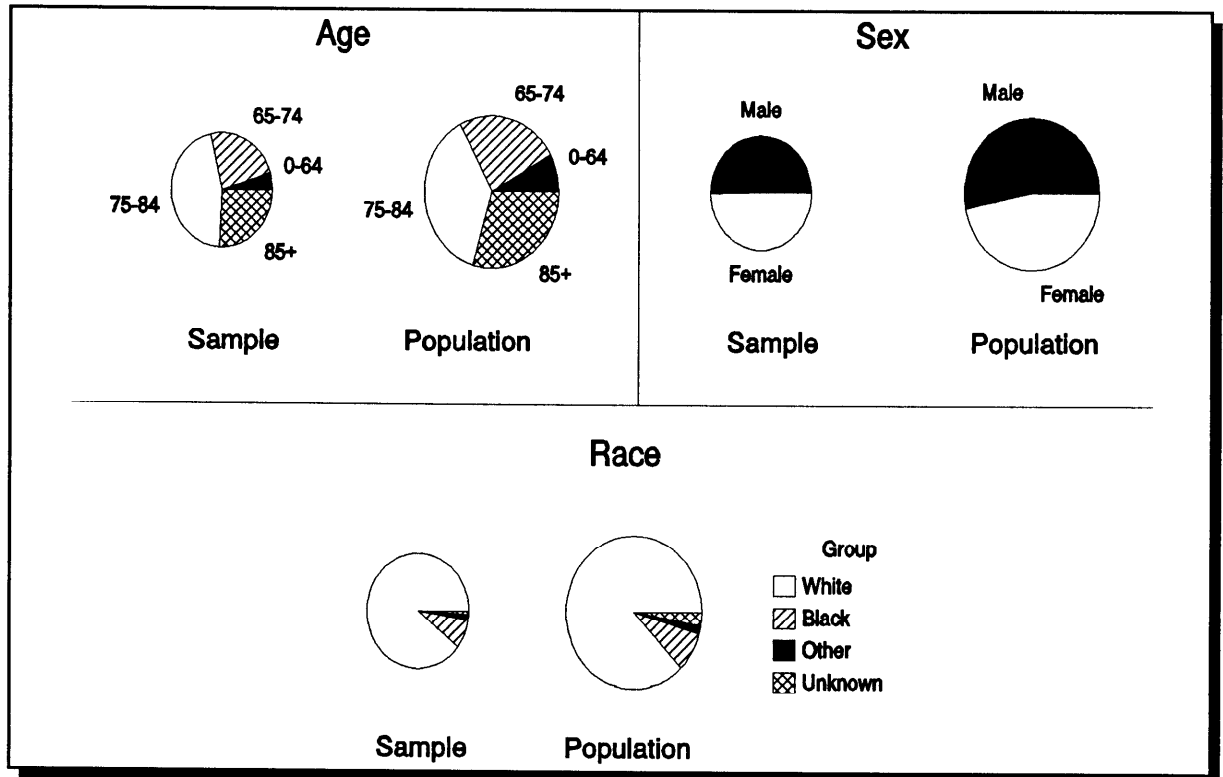


Figure 2: DRG 79 sample representativeness by patient demography, 1988

FINDINGS

Errors reduced

Of the 123 sample discharges, 11 (8.9 percent) were incorrectly assigned to DRG 79. This significantly improved upon the 18.4 percent error rate in 1985.^a Small hospitals billed more accurately than in 1985, and bills for patients less than 65 years old, and aged 75-84, were more accurate than in 1985. [Appendix D].

The improvement in accuracy in DRG 79 differed significantly from the improvement in all DRGs from 1985 to 1988, from 20.8 percent in 1985 to 14.7 percent in 1988. This inspection's 8.9 percent DRG 79 error rate also differed significantly from the 14.7 percent of errors in all DRGs in 1988.³

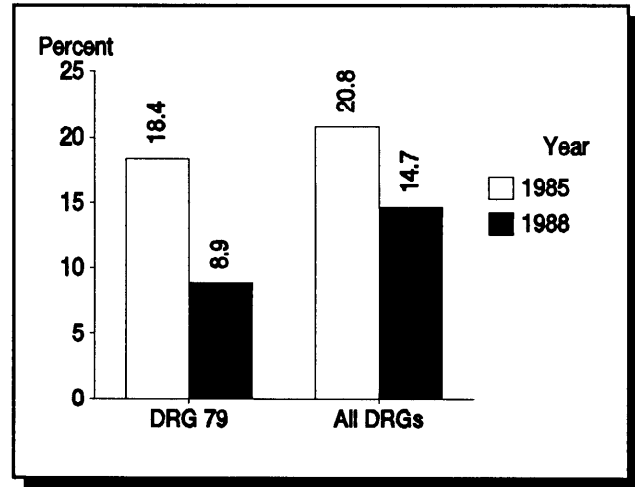


Figure 3: Proportion of DRG 79 and all coding errors, 1985 & 1988

Most errors over-reimburse the hospitals

Of the 11 billing errors, 90.9 percent over-reimbursed to the hospitals. This was not a significant improvement upon the 100.0 percent over-reimbursement reported in 1985.

Hospitals still over-reimbursed

The 123 sample discharges originally carried Relative Weights of 2.0777, equivalent to \$6,478 in metropolitan hospitals and \$5,479 in nonmetropolitan hospitals. The AMRA reabstraction, which resulted in 11 discharges reassigned to a DRG other than DRG 79, reduced the case-mix index (CMI) to 2.0057, a statistically

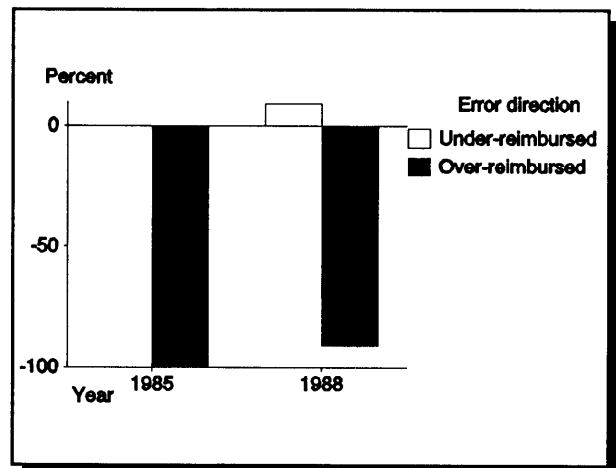


Figure 4: Direction of DRG 79 errors, 1985 & 1988

a. Because of the smaller sample size that results from DRG-specific analysis, estimates of coding for specific DRGs are less precise than OIG's national estimate. Statistical tests determined whether apparent differences were real (statistically significant) or could be attributed to random error.

significant decline of 0.0720. This reduction persisted across all hospital and demographic characteristics. The net CMI change in 1988 differed significantly from the net CMI change for DRG 79 bills in 1985. It also differed significantly from the net CMI change for all bills in 1988. [Appendix E].

Extrapolation of the 1988 CMI change to all 102,561 DRG 79 discharges projected that billing errors over-reimbursed hospitals a statistically significant \$22.7 million. This over-reimbursement did not statistically differ from the \$28.4 million the OIG previously reported for 1985. The proportion of errors decreased over time, but the increase in DRG 79's frequency completely offset the improvement in billing accuracy.

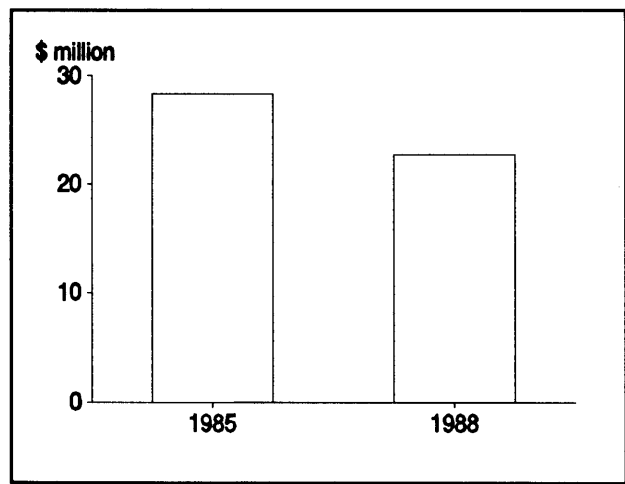


Figure 5: DRG 79 over-reimbursement from miscoding, 1988 & 1985

Reasons for errors

AMRA identified only two types of errors in the sample, misspecification and resequencing. No miscoding or other errors occurred. [Appendix F].

Misspecification The attending physician wrote down the wrong narrative diagnosis on the attestation.

Resequencing The attending physician wrote the correct, narrative, principal diagnosis on the attestation, but the hospital substituted a secondary diagnosis for the principal diagnosis.

Misspecification caused 81.8 percent of the 11 billing errors. This proportion significantly exceeded the 54.9 percent misspecification errors in 1985. It also significantly exceeded the 63.2 percent misspecifications for all DRGs in 1988.

Resequencing caused 18.2 percent of the sample's billing errors. This proportion did not significantly differ from the 20.0 percent resequencing errors in 1985.

ENDNOTES

1. Meyers M, Kleiman M, Stone D, Lee F, Schutte J, Hsia D, & Krushat M. DRG 79: respiratory infection. Washington, DC: HHS Office of Inspector General, 1989. Publication no. OAI-12-88-01190.
2. Knight J W & Hsia D C, eds. National DRG Validation Study Update: Technical Report. Washington, DC: HHS Office of Inspector General, 1992. Publication no. OEI-12-90-00191.
3. Knight J W & Hsia D C, eds. National DRG Validation Study Update: Summary Report. Washington, DC: HHS Office of Inspector General, 1992. Publication no. OEI-12-90-00190.

**Memorandum**

OCT 5 1992

Date *William Toby, Jr.*
From William Toby, Jr.
Acting Administrator

Subject Office of Inspector General (OIG) Draft Report: "DRG 79 Validation Study Update: Respiratory Infections and Inflammations," OEI-12-89-00193

To Bryan B. Mitchell
Principal Deputy Inspector General

We have reviewed the subject draft report which examined the coding accuracy of prospective payment discharges billed as diagnosis related group (DRG) 79. In a previous study, OIG sampled DRG 79 bills on a blinded basis and found upcoding that resulted in overpayment to hospitals of \$28.4 million in 1985.

In this report, OIG documented a significant improvement in coding accuracy for DRG 79, from over 81 percent in 1985 to over 91 percent in 1988. Despite this improvement, the financial impact of DRG 79 billing errors was not reduced significantly because the errors continue to result in systematic overpayment to hospitals. In addition, hospitals billed a larger number of discharges to DRG 79 in 1988.

This report contained no recommendations for further action, though OIG noted the findings of this report support the recommendation of an earlier and broader study: "National DRG Validation Study Update: Summary Report," OEI-12-89-00190. In this earlier report, OIG recommended that peer review organizations (PROs) continue their surveillance of hospital coding for DRG accuracy.

We disagree with the characterization of certain billing mistakes as coding errors in situations where medical record coders are dependent on physician narratives. However, we agree with the broad recommendation about PROs surveillance of hospital bills for accuracy.

Attached for your consideration are our detailed comments. Thank you for the opportunity to review and comment on this draft report. Please advise us whether you agree with our comments on the report at your earliest convenience.

Attachment

**Comments of the Health Care Financing Administration (HCFA)
on Office of the Inspector General (OIG) Draft Report:
"DRG 79 Validation Study Update:Respiratory Infections and
Inflammations," OEI-12-89-00193**

General Comment

The findings set forth in this report indicate that 81.8 percent (9 out of 11 cases) of DRG 79 billing errors uncovered by the audit were caused by the failure of the attending physician to indicate the principal diagnosis correctly in the narrative on the attestation. We would not characterize these as coding errors because medical record coders use a physician's attested-to narrative when coding a Medicare discharge. Rather, this study points to problems with the physician narratives.

Therefore, we agree with the broad recommendation that peer review organizations continue their surveillance of hospital bills for accuracy including both physician descriptions of diagnoses and procedures, and the subsequent coding of narratives by medical record personnel.

Technical Comments

Page 1. ICD-9-CM should be written out as follows: International Classification of Diseases, Ninth Revision, Clinical Modification.

Page 2. In October 1991, The American Medical Record Association (AMRA) formally changed its name to the American Health Information Management Association (AHIMA). Even though this audit was conducted under the auspices of AMRA, OIG may wish to make mention of this change in the introduction of this report. Suggested language is as follows:

"OIG contracted with the American Medical Records Association (AMRA) to reabstract the charts. That association has since changed its name to the American Health Information Management Association (AHIMA), but will be referred to herein as AMRA."

APPENDIX A

Project participants

OIG

Cathaleen A. Ahern, B.A.
Evan J. Buckingham, B.A.
David C. Hsia, J.D., M.D., M.P.H.
Thomas F. Komaniecki, M.P.A.
W. Mark Krushat, M.P.H.
Linda M. Moscoe, B.A.
Brian P. Ritchie, B.A.
Barry L. Steeley^b
John M. Traczyk, B.A.

HCFA

Timothy F. Greene, M.A., M.B.A.
Stephen F. Jencks, M.D.
Michael R. McMullan, M.B.A.
Harry L. Savitt, Ph.D.
Jeanette M. Smith, M.D., M.P.H.^c
Malcolm A. Sneen, B.S.

RAND Corporation

Haya P. Rubin, M.D., Ph.D.^d

Baxter-Health Data Institute^e

Patricia J. Baxter, R.N.
Patricia Cassidy-Tsnosas, R.N.
Annette M. Delaney, R.N., M.A.
Ellen B. Inghilleri, R.N.
Janet Mathews, A.R.T.
Laurie H. Moore, R.R.A.
Claire Shannon, A.R.T.
Michele A. Wiese, B.A.

AMRA

Margret K. Amatayakul, M.B.A., R.R.A.
Mary Converse, R.R.A.

b. Now at Health Audit Services, Ellicott City, MD.

c. Now at the Journal of the American Medical Association, Chicago, IL.

d. Now at Johns Hopkins Medical Institutions.

e. Ceased operations February 16, 1990.

Nicholas J. Cotsonas, M.D.^f
Linda Ertl, R.R.A.
Rita M. Finnegan, R.R.A.
Desla Mancilla, A.R.T.
Barbara Manny, R.R.A.
Sonia Martyniuk, R.R.A.
Toula Nicholas, A.R.T.
Charlotte Razor, R.R.A.
LouAnn Schraffenberger, R.R.A.
Lynn Smetko, R.R.A.
Dawn Smith, A.R.T.
Joan Zacharias, A.R.T.

BOTEC Analysis Corporation

Geraldine M. Berenholz, R.R.A.
Andrew H. Chalsma, B.A.
David P. Cavanagh, M.A., Ph.D.
Janet W. Knight, R.N., Ph.D.
Amy L. Lockwood, B.A.

Contract information

Contractor

BOTEC Analysis Corporation
1698 Massachusetts Avenue
Cambridge, MA 02138

Project Officer

David Hsia, J.D., M.D., M.P.H.
Office of Inspector General
330 Independence Avenue
Washington, D.C. 20201

Contract

HHS-100-90-0023
Firm-fixed price contract
\$203,257

f. Outside contractor.

APPENDIX B

ICD-9-CM codes in DRG 79

003.22	Salmonella pneumonia
006.4	Amebic lung abscess
010.0	Primary tuberculosis complex
010.1	Primary tuberculosis pleurisy
010.8	Primary progressive tuberculosis not elsewhere classifiable
010.9	Primary tuberculosis not otherwise specified
011.0	Tuberculosis lung infiltrative
011.1	Tuberculosis lung nodular
011.2	Tuberculosis lung with cavity
011.3	Tuberculosis of bronchus
011.4	Tuberculosis lung fibrosis
011.5	Tuberculosis bronchiectasis
011.6	Tuberculosis pneumonia
011.7	Tuberculosis pneumothorax
011.8	Pulmonary tuberculosis not elsewhere classifiable
011.9	Pulmonary tuberculosis not otherwise specified
012.0	Tuberculosis pleurisy
012.1	Tuberculosis thoracic nodes
012.2	Isolated tracheal tuberculosis
012.8	Respiratory tuberculosis not elsewhere classifiable
020.3	Primary pneumonic plague
020.4	Secondary pneumonic plague
020.5	Pneumonic plague not otherwise specified
021.2	Pulmonary tularemia
022.1	Pulmonary anthrax
031.0	Pulmonary mycobacteria
039.1	Pulmonary actinomycosis
052.1	Varicella pneumonitis
055.1	Postmeasles pneumonia
073.0	Ornithosis pneumonia
095.1	Syphilis of lung
112.4	Candidiasis of lung
114.0	Primary coccidioidomycosis
115.05	Histoplasma capsulatum pneumonia
115.15	Histoplasma duboisii pneumonia
115.95	Histoplasmosis pneumonia
121.2	Paragonimiasis
122.1	Echinococcus granulosus of the lung
130.4	Toxoplasma pneumonitis
136.3	Pneumocystosis
482.0	K. Pneumoniae pneumonia

482.1 Pseudomonas pneumonia
482.4 Staphylococcus pneumonia
484.1 Pneumonia with cytomegalic inclusion disease
484.3 Pneumonia in whoop cough
484.5 Pneumonia in anthrax
484.6 Pneumonia in aspergillosis
484.7 Pneumonia in other systemic mycoses
484.8 Pneumonia in infectious disease not elsewhere classifiable
507.0 Food/vomit pneumonitis
507.1 Oil/essence pneumonitis
507.8 Solid/liquid pneumonitis not elsewhere classifiable
510.9 Empyema without fistula
511.1 Bacterial pleurisy with effusion not tuberculosis
513.0 Abscess of lung
513.1 Abscess of mediastinum
519.2 Mediastinitis
510.0 Empyema with fistula
795.5 Tuberculin test reaction
v71.2 Observation for suspected tuberculosis

APPENDIX C

Sample representativeness

Number [percent]	Population	Sample	Chi-square
<u>Hospital demography</u>			
1-99 beds	22,539 [22.0]	37 [30.1]	5.04, 2 df, P=0.081
100-299 beds	39,061 [38.1]	48 [39.0]	
300+ beds	40,918 [39.9]	38 [30.9]	
Metropolitan	72,185 [70.4]	88 [71.5]	0.06, 1 df, P=0.195
Nonmetropolitan	30,333 [29.6]	35 [28.5]	
Teaching	37,168 [36.3]	43 [35.0]	0.07, 1 df, P=0.210
Nonteaching	65,350 [63.7]	80 [65.0]	
Profit	13,910 [13.9]	16 [13.0]	0.06, 1 df, P=0.199
Nonprofit	86,303 [86.1]	107 [87.0]	
<u>Patient demography</u>			
<65 years	8,232 [8.0]	6 [4.9]	3.32, 3 df, P=0.652
65-74 years	25,384 [24.8]	29 [23.6]	
75-84 years	38,686 [37.7]	56 [45.5]	
85+ years	30,259 [29.5]	32 [26.0]	
Male	54,795 [53.4]	62 [50.4]	0.37, 1 df, P=0.451
Female	47,766 [46.6]	61 [49.6]	
White	89,424 [87.2]	110 [89.4]	1.38, 3 df, P=0.289
Black	8,579 [8.4]	10 [8.1]	
Other	1,808 [1.8]	2 [1.6]	
Unknown	2,750 [2.7]	1 [0.8]	
Total	102,561 [100.0]	123 [100.0]	

Note: Population frequencies may not sum to total because of missing cases.

APPENDIX D

DRG 79 billing errors, 1985 and 1988

Number [proportion ± standard error]	1988	1985	t-test
<u>Hospital demography</u>			
1-99 beds	1 [2.7 ± 2.7]	24 [33.3 ± 9.8]	6.37
100-299 beds	6 [12.5 ± 4.8]	25 [20.0 ± 8.2]	1.41
300+ beds	4 [10.5 ± 5.0]	25 [8.0 ± 5.5]	0.58
Metropolitan	10 [11.4 ± 3.4]	46 [28.5 ± 6.9]	3.09
Nonmetropolitan	1 [2.9 ± 2.9]	28 [12.2 ± 6.6]	2.39
Teaching	5 [11.6 ± 4.9]	22 [9.3 ± 4.7]	0.53
Nonteaching	6 [7.5 ± 3.0]	52 [18.3 ± 5.7]	2.22
Profit	1 [6.3 ± 6.3]	7 [13.8 ± 8.0]	2.14
Nonprofit	10 [9.3 ± 2.8]	67 [18.8 ± 4.8]	1.93
<u>Patient demography</u>			
<65 years	2 [33.3 ± 21.1]	7 [0.0 ± 0.0]	6.51
65-74 years	4 [13.8 ± 6.5]	19 [26.2 ± 11.7]	2.01
75-84 years	3 [5.4 ± 3.0]	26 [50.8 ± 15.6]	6.39
85+ years	2 [6.3 ± 4.3]	22 [12.9 ± 6.4]	1.68
Male	2 [3.2 ± 3.2]	40 [13.3 ± 4.1]	3.23
Female	9 [14.8 ± 4.6]	34 [22.3 ± 9.3]	1.19
White	10 [9.1 ± 2.8]		
Black	0 [0.0 ± 0.0]		
Other	1 [50.0 ± 50.0]		
Unknown	0 [0.0 ± 0.0]		
Total	11 [8.9 ± 2.6]	74 [18.4 ± 4.4]	1.97

APPENDIX E

DRG 79 case-mix index change, 1985 and 1988

Relative weight ± standard error	1988	1985	Difference	t-test
<u>Hospital demography</u>				
1-99 beds	-0.0213 ± 0.0213	-0.2960 ± 0.0909	0.2747	6.31
100-299 beds	-0.1149 ± 0.0450	-0.2086 ± 0.0863	0.0937	1.79
300+ beds	-0.0672 ± 0.0456	-0.0861 ± 0.0606	0.0189	0.44
Metropolitan	-0.0917 ± 0.0314	-0.2623 ± 0.0669	0.1706	3.25
Nonmetropolitan	-0.0226 ± 0.0226	-0.1278 ± 0.0751	0.1052	2.53
Teaching	-0.1075 ± 0.0465	-0.0865 ± 0.0435	-0.0210	0.52
Nonteaching	-0.0529 ± 0.0260	-0.1916 ± 0.0654	0.1387	2.72
Profit	-0.0557 ± 0.0557	-0.1401 ± 0.0817	0.0844	2.60
Nonprofit	-0.0745 ± 0.0257	-0.1834 ± 0.0488	0.1089	2.29
<u>Patient demography</u>				
<65 years	-0.3657 ± 0.2313	0.0000 ± 0.0000	-0.3657	6.51
65-74 years	-0.1182 ± 0.0564	-0.2980 ± 0.1379	0.1798	2.75
75-84 years	-0.0230 ± 0.0223	-0.4640 ± 0.1486	0.4410	6.73
85+ years	-0.0608 ± 0.0430	-0.1105 ± 0.0568	0.0497	1.34
Male	-0.0271 ± 0.0190	-0.1288 ± 0.0407	0.1017	3.48
Female	-0.1177 ± 0.0426	-0.2245 ± 0.0988	0.1068	1.67
Total	-0.0720 ± 0.0235	-0.1809 ± 0.0457	0.1089	2.34

APPENDIX F

Reasons for DRG 79 errors, 1985 and 1988

Number [percent]	Total 1988		Total 1985	
Misspecification	9	[81.8]	6	[54.9]
Miscoding	0	[0.0]	2	[13.3]
Resequencing	2	[18.2]	3	[20.0]
Other	0	[0.0]	4	[26.7]
Total	11	[100.0]	15	[100.0]