Research Report

Testing New Codes to Capture Post-Operative Care

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Preface

The Centers for Medicare & Medicaid Services (CMS) uses the resource-based relative value system to determine payment for physicians and nonphysician practitioners for their professional services. For many surgeries and other types of procedures, Medicare payment also includes a bundle of pre- and post-operative visits delivered during a global period of 10 days or 90 days anchored on the surgery date. As part of the Medicare Access and CHIP Reauthorization Act of 2015, Congress mandated that CMS collect data on the "number and level" of visits in the global period from a representative sample of physicians beginning January 1, 2017. In order to support CMS in collecting data on the number and level of visits performed in the global period, the RAND Corporation had developed a set of nonpayment G-codes to capture setting, complexity, and time associated with post-operative visits in the global period (Mehrotra et al., 2016). In the 2017 Medicare physician fee schedule proposed rule, CMS proposed collection of data on post-operative visits using G-codes similar to those developed by RAND.

Because these G-codes had never been tested or used by practitioners, CMS asked RAND to pilot test the modified G-codes included in the proposed rule (CMS, 2016a).[1] The goal of testing was to assess whether practitioners understood the codes and could accurately apply them. Our overall approach in the pilot testing was to test the codes from the proposed rule via a survey of physicians who perform procedures, using a set of newly developed vignettes. In this report, we summarize the results of our pilot testing.

This report should be of interest to health policymakers, representatives of physician and nonphysician practitioner professional associations, and health services researchers.

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[1] Subsequent to the testing phase of this project, CMS finalized a policy to collect data using existing nonpayment Current Procedural Terminology (CPT)® code 92204, rather than the modified G-codes included in the proposed rule (CMS, 2016b).

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Summary

The Centers for Medicare & Medicaid Services (CMS) uses the resource-based relative value system to determine payment for physicians and nonphysician practitioners for their professional services. For many surgeries and other types of procedures, Medicare payment also covers a bundle of pre- and post-operative visits delivered during a global period of 10 days or 90 days anchored on a surgery date. In the final rule for the 2015 physician fee schedule, CMS announced that all surgeries with a 10- or 90-day global period would transition to a 0-day global period in 2017 and 2018, respectively. CMS's rationale for scaling back global surgical packages was driven by concerns over the accuracy of the payment for post-operative care. In Section 523 of the Medicare Access and CHIP Reauthorization Act of 2015, Congress directed CMS *not* to transition all 10-day and 90-day global surgery packages to 0-day global periods (Public Law 114–10, 2015). Instead, Congress mandated that CMS collect data on the "number and level" of visits in the global period from a representative sample of physicians beginning January 1, 2017.

CMS previously asked the RAND Corporation to provide recommendations on how to best collect the number and level of post-operative visits through the use of nonpayment claims. Based on the input of an expert panel, we proposed a new set of codes to CMS that combined scope of services with time, for both inpatient and office-based services. The rationale and description of these codes (nonpayment codes referred to as G-codes in this report) were summarized in a prior RAND report (Mehrotra et al., 2016). In July 2016, CMS issued a proposed rule that included a slightly modified version of the post-operative visit G-codes that RAND had developed for CMS (CMS, 2016a) and proposed to require their use by practitioners for certain services. The G-codes from the proposed rule had never been tested or used by practitioners.

Therefore, CMS asked the RAND Corporation to pilot the G-codes from the proposed rule with the goal of testing whether practitioners (and coding/billing experts if applicable) understood and could accurately apply the codes. After this testing was completed, CMS issued a final rule for calendar year 2017 that requires practitioners to use Current Procedural Terminology (CPT®) code 99024 instead of the proposed G-codes to report post-operative services in the global period (CMS, 2016b). Therefore, the G-codes tested in this report will not be used by practitioners to report services to Medicare. We provide this report, however, to document our findings in case they may help to inform any future discussions about similar nonpayment codes.

Our overall approach was to create a series of vignettes and to test the use of these vignettes using semi-structured interviews with a small set of physicians who perform procedures. We then conducted more-extensive testing through surveys with a larger group of physicians. First, we identified five specialties to test the proposed G-codes: cardiology, dermatology, general

surgery, neurosurgery, and ophthalmology. For each of the five specialties, we created three clinical vignettes that described patient visits that were varying combinations of either inpatient or outpatient, and typical or complex. We then conducted interviews with one physician from each of the specialties. The goals of these interviews were three-fold: (1) to assess how physicians understood the codes and would apply them to recent visits; (2) to refine our vignettes for the survey; and (3) to pilot test use of the proposed G-codes on the newly created vignettes.

Based on input from the interviews described above, we developed an online survey to test the proposed G-codes among a larger sample of physicians from the same five specialties. In the interviews, respondents could generally accurately apply the codes to vignettes, and to recent actual visits. In the survey, accuracy of coding was 71 percent for choosing the correct code on the basis of setting and complexity, and 61 percent for choosing the correct time increment.

Comments from both interviews and the survey coalesced around several concerns with the proposed G-codes: the burden of reporting nonpayment codes, keeping track of time spent, the definitions of "typical" and "complex," and how the codes capture work done by multiple practitioners. Our testing uncovered valuable insights that could be useful if CMS considers similar new codes in the future.

Acknowledgments

We thank our interviewees and survey respondents for sharing their time, valuable insights, and critical feedback. We would like to thank the following specialty societies for assisting with recruitment of interviewees and survey respondents: the American Academy of Dermatology, the American Academy of Ophthalmology, the American Association of Neurological Surgeons, the American College of Cardiology, and the American College of Surgeons.

Our acknowledgment of their contributions does not imply that these organizations endorse the contents of this report.

Abbreviations

CMS	Centers for Medicare & Medicaid Services
CPT®	Current Procedural Terminology
DVT	deep vein thrombosis
ECG	electrocardiogram
E&M	evaluation and management
HCPCS	Healthcare Common Procedure Coding System
ICU	intensive care unit
OR	operating room
RBRVS	resource-based relative value system

Glossary

Word	Definition
Clinical staff	Defined as registered nurses, licensed practical nurses, medical technical assistants, and other health professionals who are not separately payable but whose services may be covered "incident to" a physician or nonphysician practitioner's service.
Code/procedure/services	These terms are generally interchangeable in this report. A service is described by a procedure code (Current Procedural Terminology [CPT®] or Healthcare Common Procedure Coding System [HCPCS]).
G-codes	In the HCPCS system, there are a series of both numeric (Level 1, CPT) and alphanumeric codes (Level 2). One set of codes begins with the letter "G." While only some of these G-codes are nonpayment codes, in this report the term G-codes refers to the nonpayment codes that the Centers for Medicare & Medicaid Services proposed practitioners use to report for post-operative visits. The G-codes referred to in this report have yet to be finalized.
Global period	Surgical procedures may have a 10- or 90-day global period during which follow-up post-operative visits and other services are bundled into the payment for the procedure. A 90-day global period also includes services provided on the day before the procedure. Some surgical procedures have a 0-day period, meaning that physicians/nonphysician practitioners would bill separately for any post-operative visits after the day of surgery.
Nonphysician practitioner	Refers to practitioners other than physicians, such as physician assistants, nurse practitioners, certified nurse midwives, and clinical nurse specialists, who can bill Medicare for services performed within their scope of practice as defined by their state and in certain circumstances.

Physician	Defined as doctors of medicine, doctors of osteopathy, doctors of dental surgery or of dental medicine, doctors of podiatric medicine, and doctors of optometry.
Post-operative work	Work related to the surgical procedure after a patient's discharge from the recovery room through the end of the global period.
Resource-based relative value system (RBRVS)	A system for determining physician payments for treating Medicare patients that takes into account work done by the physicians, malpractice insurance, and practice expenses including staff salaries, overhead, supplies, and equipment.

Chapter One. Introduction

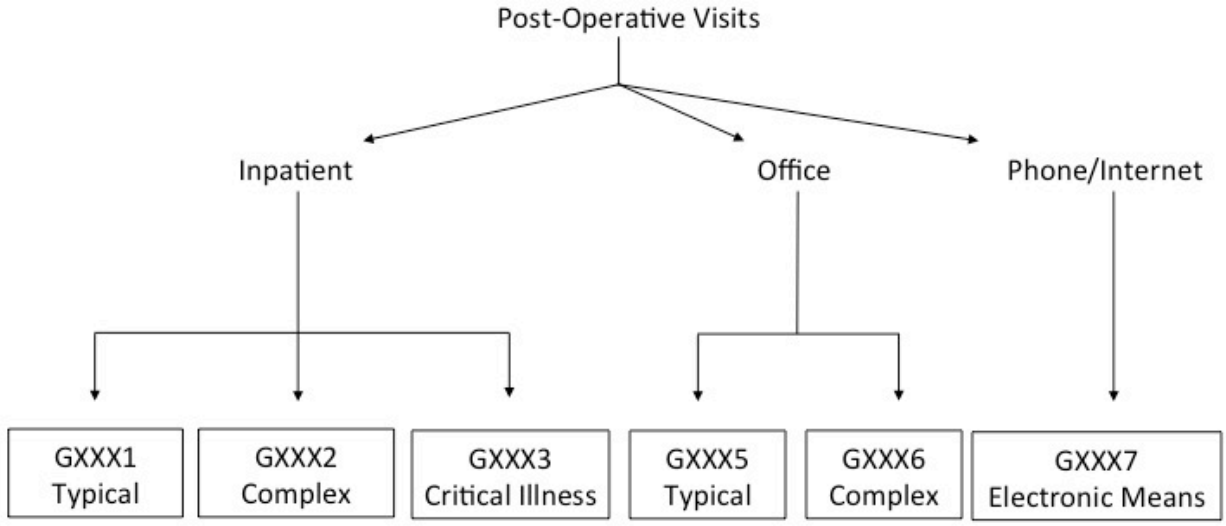
Background

The Centers for Medicare & Medicaid Services (CMS) uses the resource-based relative value system (RBRVS) to determine payment for physicians and nonphysician practitioners for their professional services. The relative values for physician work measure the relative levels of professional time, effort, skill, and stress associated with providing services. For many surgeries and other types of procedures, Medicare payment also covers a bundle of post-operative visits delivered during a global period of 10 days or 90 days anchored on a surgery date. In the final rule for the 2015 physician fee schedule, CMS announced that all surgeries with a 10- or 90-day global period would transition to a 0-day global period in 2017 and 2018, respectively. Under this policy, physicians would bill separately for any post-operative visits after the day of surgery. CMS's rationale for scaling back global surgical packages was driven by concerns over the accuracy of the payment for post-operative care. In Section 523 of the Medicare Access and CHIP Reauthorization Act of 2015, Congress directed CMS *not* to transition all 10-day and 90-day global surgery packages to 0-day global periods (Public Law 114–10, 2015). Instead, Congress mandated that CMS develop and implement a process to gather the necessary data to appropriately value post-operative care. Congress has required CMS to collect data on the "number and level" of visits in the global period from a representative sample of physicians beginning January 1, 2017. The statute refers to collecting data through claims, but does not require CMS to collect the data in this way.

In the first phase of this work (Mehrotra et al., 2016), CMS had asked the RAND Corporation to provide recommendations on how to best collect the number and level of post-operative visits through the use of nonpayment claims (i.e., G-codes, or nonpayment codes). To do so, RAND gathered input from individual practitioners and later an expert panel to describe the range of post-operative care provided during the global period. Based on their input, RAND proposed a new set of codes to CMS that combines scope of services with time for both inpatient and office-based services. The recommended codes attempted to balance the need for a simple and straightforward system with the demand for a set of codes to capture the granularity and heterogeneity associated with post-operative care delivery.

In July 2016, CMS put forth a proposed rule that proposed a slightly modified version of the G-codes we had presented to CMS (CMS, 2016a). The G-codes from the proposed rule are detailed in Figure 1.1.

Figure 1.1. G-Codes Described by CMS in Post-Operative Rule



NOTE: The code for patient interactions via electronic means was not included in the survey described in this report.
SOURCE: Figure adapted by authors from CMS, 2016a.

Typical visits—whether inpatient or outpatient—are those in which typical post-operative care is provided. The expectation was that the vast majority of post-operative visits would be either a typical inpatient or typical outpatient visit. "Typical" care would consist of the following activities:

- Review vitals, laboratory or pathology results, imaging, and progress notes
- Take interim patient history and evaluate post-operative progress
- Assess bowel function
- Conduct patient examination with a specific focus on incisions and wounds, post-surgical pain, complications, and fluid and diet intake
- Manage medications (e.g., wean pain medications)
- Remove stitches, sutures, and staples
- Change dressings
- Counsel patient and family in person or via phone
- Write progress notes, post-operative orders, prescriptions, and discharge summary
- Contact and coordinate care with referring physician or other clinical staff
- Complete forms or other paperwork.

For outpatient visits, the complex code should be used for those visits that are not typical. For inpatient visits, the complex code should be used for those visits that are neither typical nor critical illness–associated (see below for the definition of *critical illness*). Examples of activities performed during a complex visit might include:

- primary management of a particularly complex patient (e.g., a patient with numerous comorbidities or high likelihood of significant decline or death)

- secondary management of a critically ill patient
- management of a complication (e.g., a wound infection)
- complex procedures outside of an operating room (OR) (e.g., significant debridement at the bedside or in the office).

Critical illness visits are those that are associated with acute impairment of one or more vital organ systems in a patient with an associated high probability of imminent or life-threatening deterioration in their condition. Use of a critical illness visit code implies the physician was performing primary management of a critically ill patient, most often in an intensive care unit.

Electronic means visits are those in which care is provided via phone, the Internet, or other electronic means outside the context of a face-to-face visit. However, it cannot be used the day before, the day of, or the day after an in-person visit.

Visits should be billed in 10-minute increments, with each billed G-code representing a 10-minute increment. Time increments are reported using the same general guidance used for time-based Current Procedural Terminology (CPT®) codes, and are rounded to the nearest 10-minute increment (whether up or down). For example, a typical office visit that lasts 22 minutes would be rounded down to two 10-minute increments, and would be billed as two GXXX5 codes.

For inpatient visits, time should be billed in 10-minute increments based on aggregate time spent on that calendar day in the patient's room, at the nursing station, or on the inpatient ward/intensive care unit (ICU) for activities. For office or other outpatient visits, time should be billed in 10-minute increments based *only* on time spent on face-to-face care at the visit.

Although the above codes were created as described above with input from practitioners, they had not been tested with practitioners. Such testing is important to ensure that the codes are understood as intended, and are applied accurately.

Project Objectives

CMS asked RAND to pilot the proposed G-codes from CMS's proposed rule (CMS, 2016a) with the goal of testing whether practitioners understood and could accurately apply the codes.

Our overall approach—described in further detail in Chapter Two—was to create a series of vignettes and to test the use of these vignettes using a survey of physicians who perform procedures. Before implementing the survey, we conducted semi-structured interviews with physicians to (1) assess how physicians understood the codes and would apply them to recent visits; (2) refine our vignettes for the survey; and (3) pilot test use of the proposed G-codes on the newly created vignettes. We then surveyed a larger group of physicians who perform procedures to understand their use of the G-codes as applied to the vignettes. In some cases, the physicians asked their coding/billing colleagues to respond to the survey, as the physicians did not submit bills independently. We report here the results of the semi-structured interviews, the survey results, and provide a synthesis of free-text comments from the survey.

Additional Note About the G-Codes from the Proposed Rule

Subsequent to the testing phase of this project (which primarily took place between the issuance of the proposed rule on July 8, 2016, and the final rule on November 1, 2016), CMS finalized a policy to collect data using an existing CPT code rather than the G-codes proposed in the proposed rule (CMS, 2016b). This decision was based on comments submitted on the proposed G-codes, which included: lack of alignment with clinical workflow; failure to adequately account for variation in complexity and medical decisionmaking; and use of the term "typical" to define visits in a different way than the term is generally used in valuations.

Instead, CMS has asked select practitioners to use the CPT code 99024 (which captures post-operative visits, but not setting, time, or complexity) to report when they perform a post-operative visit for certain procedures.[1] Although our testing of the proposed G-codes will not now directly inform any implementation, the results are reported here as they may be useful to policymakers and others as they consider future new codes and how practitioners may implement them.

Organization of This Report

The rest of the report is organized as follows:

- Chapter Two describes our approach to testing the proposed nonpayment G-codes through interviews and a survey
- Chapter Three describes the findings from our interviews that assessed how physicians understood the codes as applied to recent visits and informed our vignette development for the survey described in Chapter Four
- Chapter Four summarizes our findings from the survey pilot testing the G-codes using the vignettes described in Chapter Three
- Chapter Five provides a summary of RAND's findings and recommendations.

[1] The description of this existing nonpayment CPT code 99024 is "Postoperative follow-up visit, normally included in the surgical package, to indicate that an evaluation and management service was performed during a postoperative period for a reason(s) related to the original procedure." (American Medical Association, "Coding and Billing Resources: Find Coding Resources," web page, 2016.)

Chapter Two. Approach to Testing the Proposed Nonpayment G-Codes

Interviews

We conducted interviews to assess how physicians understood the codes as applied to recent visits and to inform our vignette development for the survey to test the proposed G-codes. This also helped us to revise the instructions for practitioners on use of the proposed G-codes.

We identified five specialties on which to test the proposed G-codes: cardiology, dermatology, general surgery, neurosurgery, and ophthalmology. These specialties were purposively sampled in order to test the proposed G-codes among a heterogeneous population of physicians who provide post-operative services of varying complexity and frequency in both inpatient and outpatient settings.

For each of the five specialties, we created three clinical vignettes that described patient visits that were varying combinations of either inpatient or outpatient, and typical or complex. The balance of vignettes in terms of setting and complexity depended on specialty. The vignettes were developed by members of the research team with clinical expertise and modeled after the type of vignettes used by the American Medical Association/Specialty Society Relative Value Scale Update Committee. Initial vignette development was informed by interviews performed during earlier work by the same research team (Mehrotra et al., 2016). The vignettes were all structured analogously, and described the reason for the patient visit, what was done during the visit, and how long it took to complete the various tasks and procedures performed (for vignette text, see Appendix A). Each vignette included the necessary information to choose both the correct code and correct time increment. We created vignettes for all G-codes except GXXX7 (electronic means), as we did not expect practitioners to have difficulty distinguishing visits conducted exclusively by phone or Internet with those conducted at least in part face-to-face.

We conducted interviews by phone during late July and early August 2016 with a convenience sample of five physicians (one from each of the specialties) who had been interviewed for prior related work and had agreed to be contacted again as needed (Mehrotra et al., 2016).

Prior to the interview, interviewees were sent a brief overview describing how to use the proposed G-codes and three vignettes specific to their specialty. Interviewees were asked to review the materials prior to the call (for materials provided to the interviewees, see Appendix B). If interviewees were unable to review the documents prior to the call, interviewers reviewed the instructions and vignettes during the phone call. An interview guide was used, which prompted the interviewees to apply the G-codes to both actual patient visits and the draft vignettes, using the following types of questions:

- Why did you pick this particular G-code? [If typical was selected] Why did you pick the typical and not complex code for this visit? How do you think of "typical?"
- How did you think through the time increments for this visit? Whose time did you include in your estimate? Did the way we explained how to code for time make sense to you?

Comments from the interviewees about the proposed G-codes were recorded using written notes by the interviewers, and later synthesized. The comments were organized by theme and are reported in Chapter Three.

Survey

Based on input from the interviews described above, we developed an online survey to test the use of the proposed G-codes with individuals from the same five specialties. Respondents were first asked about their background (physician, coding/billing staff, specialty society representative, or other) and asked to confirm their specialty. Respondents were then presented with the three vignettes that corresponded to their specialty, and for each one, they were asked which code they would choose, how many time increments they would bill, and how confident they were in their choice of code. For each vignette, there was a free-text comment box in which respondents could choose to share any additional feedback. Following the vignettes, physicians and coding/billing staff were asked several questions about their practice: whether the practice was academically affiliated, the number of clinicians that work in the practice, whether it was in a rural setting, the state in which the respondent practiced, and what percentage of the respondents' patients were covered by Medicare. Respondents were also given the opportunity to leave any additional comments or questions at the end of the survey.

We asked specialty society representatives from the five specialties to each nominate 15 physicians to complete the survey: the American College of Cardiology, the American Academy of Dermatology, the American College of Surgeons, the American Association of Neurological Surgeons, and the American Academy of Ophthalmology. This sample size was not chosen based on a power analysis for a particular comparison, but rather chosen due to project timeline and feasibility.

A link to the survey was sent via e-mail to the nominees along with a three-page set of instructions containing a brief explanation of the purpose of the project and how to use the proposed G-codes. In the e-mail, we asked that any physicians that do not do their own billing/coding share the link with their billing/coding staff. We also noted that physicians should feel free to share the survey with interested colleagues. Of note, we did not track whether respondents had received the original survey invitation, as opposed to having been forwarded the survey invitation. Thus, we are not able to report response rates. The survey was open for three weeks from August 18, 2016 through September 7, 2016. Weekly e-mail reminders were sent. Results of the survey are reported in Chapter Four.

RAND's institutional review board reviewed the survey and determined the work to be exempt.

Chapter Three. Findings from Interviews on Nonpayment Codes

We conducted interviews with five physicians during late July and early August 2016 in order to refine our vignettes for the survey and pilot test use of the proposed G-codes on the vignettes. In this chapter, we describe the interview sample and findings from the interviews.

Summary of Interview Findings

Interviews were conducted with physicians in each of the five following specialties: cardiology, dermatology, general surgery, neurology, and ophthalmology. Each interview lasted approximately 30 minutes. Interviewees included both male [N = 4] and female [N = 1] physicians who worked in the following settings: teaching hospital, solo private practice, single specialty group, and multispecialty group.

All interviewees performed their own coding for procedures and visits, although some indicated that their codes were subsequently vetted by coding professionals. Major themes that emerged from the interviews included the need to further clarify how to use the codes and general concerns about the codes.

Despite the questions and concerns captured below under the two major themes, we found that interviewees generally demonstrated understanding of how to accurately apply the proposed codes to both their recent post-operative visits and to the draft vignettes with little or no prompting.

Need for Clarification on How to Use Codes

All interviewees had some clarifying questions and confusion about how to use the proposed G-codes. Most interviewees had questions about the definition of a "typical" visit. For example, interviewees raised questions about whether the "typical" codes refer to care that is "typical" across all procedures, versus "typical" for what would be expected of a particular patient for a particular procedure, versus "typical" for all patients who receive a particular procedure. There were also questions about how to code multiple visits made to the same patient on the same day. This was a particular issue in the inpatient setting, where a surgeon might see a patient multiple times in one day, particularly in the immediate post-operative period. Interviewees questioned how to use these proposed codes when multiple practitioners were providing complementary post-operative care to the same patient on the same day. For example, this situation may arise when a cardiologist provides primary patient management and an electrophysiologist performs a device interrogation for a patient with a newly placed automatic implantable cardioverter-defibrillator.

Among some interviewees, there was confusion about how these newly proposed G-codes differ from codes used for evaluation and management (E&M) visits, such as whether or not to include staff time when reporting and the difference in levels between codes for E&M visits and the proposed G-codes. Finally, two interviewees had questions about whether to round at 5- or 10-minute increments. This was clarified during interviewing by reviewing RAND's coding instructions, which were subsequently revised for the survey.

General Concerns About the Codes

Most interviewees had concerns about CMS's plan to have practitioners report post-operative services using these proposed G-codes as reported in the proposed rule. Interviewees' concerns were two-fold: First, they perceived that CMS does not believe they are providing post-operative services, and second, there were concerns about the work burden associated with submitting these codes.

In particular, interviewees were concerned about the burden and stress that recording these codes would place on practitioners and staff members who already often feel overwhelmed. Beyond the added stress for these individuals, there was concern about the time and cost of obtaining additional software and building these proposed codes into existing electronic health record systems. Several interviewees expressed concern about the timekeeping needed to report these codes, as keeping track of the time that visits take is not something that these physicians currently think about. One interviewee suggested that a scribe might be needed to capture this information. Interviewees provided some suggestions on potential changes to codes, including reporting the 99024 code with a modifier for complexity, and using codes that already exist for E&M visits.

Chapter Four. Findings from the Survey Piloting Nonpayment Codes

Quantitative Survey Findings

Our total number of respondents was 80, ranging across the five specialties, including nine respondents from cardiology to 28 respondents from dermatology. All but five respondents were physicians (the remaining were coding/billing staff). We do not report response rates here, because we allowed respondents to forward the survey to colleagues and coding staff and for some specialties the response rate would exceed 100 percent. The 80 respondents provided 240 vignette responses.

Aggregate results by type of respondent can be found in Table 4.1. Overall, across all 240 vignette responses, the majority of respondents chose the correct code (71 percent) and number of time increments (61 percent). Physicians were more accurate than coding/billing staff, though it should be emphasized only five coding/billing staff completed the survey.

Correct response rates varied across specialties and whether it was selection of correct code or time increment. For example, while ophthalmologists performed best in terms of choosing the correct code (100 percent chose the correct code for two vignettes and 93 percent chose the correct code for the third vignette), the percentage of ophthalmologists choosing the correct time increment was lower than that for other specialties, ranging from 43 percent to 57 percent. For dermatologists, correct response rates for codes ranged from as low as 36 percent on one vignette to 100 percent on another. Results stratified by specialty can be found in Appendix C.

Table 4.1. Correct Responses by Type of Respondent

Type of Respondent	Total Number of Vignette Responses	Percentage Choosing Correct Code	Percentage Choosing Correct Time
Overall	240	71	61
Physician	225	72	62
Coding/Billing Staff	15	53	53

Respondents were most accurate in choosing the correct code for vignettes that described outpatient, typical visits (96 percent of respondents chose the correct code) and the least accurate for inpatient, critical vignettes (23 percent chose the correct code). In terms of choosing the correct number of time increments, respondents were most accurate for inpatient, typical

vignettes (88 percent were correct) and least accurate for inpatient, critical vignettes (46 percent were correct) (see Table 4.2).

Table 4.2. Correct Response by Type of Vignette

Vignette	Total Number of Vignette Responses	Percentage Choosing Correct Code	Percentage Choosing Correct Time
Inpatient, complex	52	65	48
Inpatient, typical	16	44	88
Inpatient, critical	13	23	46
Outpatient, complex	108	70	63
Outpatient, typical	51	96	67

There was no relationship between level of confidence and correctness of response. The majority of respondents were confident in their response, regardless of whether their response was correct (88 percent were confident) or incorrect (78 percent were confident). See Table 4.3.

Input from Respondents in Open-Ended Responses

Tracking Time

In the open-ended responses, many respondents questioned how physicians would keep track of the amount of time they spend on a particular patient, which is required to submit time increments along with the codes. They commented that there is currently no mechanism in place to track time, and that it would be unrealistic to expect physicians, or other office staff, to use stop watches, clocks, or other tools to do so. Many respondents stated that they would default to choosing one time increment, since they would not have information about time and it would not affect how they are paid (the proposed G-codes are nonpayment codes). Respondents also expressed concern that if they were required to keep track of time, looking frequently at their watches or the clock would significantly hinder the doctor-patient relationship.

Table 4.3. Relationship Between Level of Confidence and Correctness of Response

Category	Percentage of Responses
Correct	
Confident	88
Not Confident	12
Incorrect	
Confident	78
Not Confident	22

NOTE: Respondents were categorized "correct" if they chose the correct code and time increment, "incorrect" if they chose the wrong code and/or time increment, "confident" if they answered "very confident" or "somewhat confident," and "not confident" if they answered "not so confident" or "not at all confident."

Work Covered by the Codes

Cardiologists, general surgeons, and ophthalmologists questioned the exact work covered by the codes. They noted that a patient visit might include multiple processes and procedures, from preparing supplies to writing prescriptions to performing a procedure. Such work may also require multiple physicians, nurses, and staff. It was unclear to many respondents how the codes would capture all of the work being done, and how the work could be attributed to multiple people. One cardiologist also expressed concern that the time it takes to provide treatment does not necessarily reflect the complexity of the treatment provided. Thus, physicians may not receive adequate credit for work performed.

Time Increments

Multiple dermatologists and one ophthalmologist did not agree with the instructions for rounding time spent on a visit to determine time increments. They suggested that time should always be rounded up, and never down. For example, if a physician spent 12 minutes on a patient visit, they argued that should count as two time increments (rounding to 20 minutes), not one (rounding to 10 minutes). Multiple general surgeons also commented that the instructions for how to choose time increments were unclear.

Definition of Complexity

Some dermatologists questioned how visits are defined as typical or complex. For example, while a certain life-threatening diagnosis (e.g., melanoma) may be typical in the sense that it occurs frequently, one respondent argued that there is nothing "typical" about disclosing and explaining a life-threatening diagnosis to a patient and his or her family. Similarly, a procedure may be performed frequently, but may require a complex conversation to explain its risks and

benefits. In addition, one general surgeon and one neurosurgeon were unclear about whether a visit with a patient who is in an intensive care unit is automatically coded as "complex."

Burden of Reporting

Dermatologists, general surgeons, and neurosurgeons expressed concerns about the burden associated with reporting these codes. Respondents posited that reporting the codes would take a significant amount of time, that this time would not be reimbursed, and that it would take away from time that could be spent with patients.

Chapter Five. Lessons Learned from Piloting Nonpayment Codes for Capturing Post-Operative Care

We tested a set of proposed nonpayment G-codes with physicians in five specialties through both interviews and a survey. When we interviewed individual practitioners and asked them to apply the proposed G-codes to recent actual patient visits and draft vignettes, we found that they were able to apply the proposed G-codes with reasonable accuracy. However, when we surveyed a larger group of practitioners and asked them to apply the proposed G-codes to vignettes, there was a roughly 30–40 percent error rate.

This differential in accuracy between the interviews and the survey may be because interviewees could probe certain aspects of the instructions with the interviewer, whereas survey respondents relied only on a brief document with instructions. In addition, the interviewees had participated in a prior phase of the work that helped to inform the development of the G-codes (Mehrotra et al., 2016), and thus may have been primed to answer the vignettes more accurately. Accuracy varied widely by specialty in the survey, and the reasons for this are unclear. Each specialty was given a unique and distinct set of vignettes that were tailored to their specialty. Some vignettes may have been easier to code than others, which may explain some of this variation.

Implications

Although the codes we tested were not finalized and are not being used by Medicare, we believe our findings have larger implications for the codes currently in use in the physician fee schedule. The methodology we developed of using vignettes to test new codes may be useful prior to implementing similar codes in the fee schedule. We uncovered a number of common questions and errors in both the interviews and the survey. Such input could be used to help refine instructions for practitioners and billing/coding experts as well as to potentially refine the codes themselves. This may help improve the overall accuracy of practitioner coding.

One key concern of respondents was how they would keep track of time spent. This is important given that numerous codes in Medicare's fee schedule are dependent upon time. For example, 99291 and 99292 (critical care codes) are based on time (albeit in larger increments than 10 minutes) (American Medical Association, 2016). It may be useful in future work to explore how practitioners who use time-based codes track time, and whether they also have difficulty accurately tracking time given that their care may extend over numerous encounters in a day. One point of confusion from practitioners in our study was how to round when using time increments (for example, if a visit required 15 minutes, would they use one or two 10-minute increments). The rounding used for the proposed G-codes mimicked what is used for other time-

based codes, such as the critical care codes 99291 and 99292 described above. Therefore, it is possible that practitioners are also confused by other time-based codes if their practice includes reporting of those codes.

Another common concern among respondents was distinguishing between "typical" and "complex" visits. Although codes for E&M visits use quite different definitions of complexity, the concept of typical versus complex should be familiar to many physicians. Given our findings, it may be useful in future work to test whether practitioners are also struggling in deciding on the correct level in terms of complexity of decisionmaking in E&M visits.

Lastly, another concern from practitioners focused on how to distinguish what work should be included when multiple practitioners are providing care. As the larger health care system moves to more team-based care, this will be an issue of increasing importance. In settings such as the ICU, where multiple practitioners are providing care in a given day, it may be useful to test existing codes to see whether practitioners are confused on how to code accurately.

Conclusions

CMS asked RAND to pilot test the then-proposed G-codes to collect the number and level of post-operative visits through the use of nonpayment claims. The goals of the pilot test were to assess whether practitioners and coding/billing experts understood and could accurately apply the codes. Based on input from interviews with physicians, we developed an online survey to test the proposed G-codes among a larger sample of physicians from the same five specialties.

We found that in the interviews, respondents could generally accurately apply the codes to vignettes, and to recent visits. Accuracy of coding in the survey was 71 percent for choosing the correct code and 61 percent for choosing the correct time increment. Comments from both interviews and the survey coalesced around several concerns with the proposed G-codes: the burden of reporting nonpayment codes, keeping track of time spent, the definitions of "typical" and "complex," and how the codes capture work done by multiple practitioners. Our testing uncovered valuable insights that could be useful if CMS considers similar new codes in the future.

Appendix A. Clinical Vignettes Used to Test Nonpayment Codes

Cardiology

Inpatient, Complex

You are seeing a 70-year-old male in the hospital for follow-up one day after pacemaker placement. He was admitted with symptomatic bradycardia. He has multiple comorbidities including a history of deep vein thrombosis (DVT)/pulmonary embolism (PE) for which he was being anticoagulated. You are called to see the patient that morning because his wound dressing is saturated with blood, and the nurse is concerned that it is not being well controlled even with a pressure dressing. You undress his wound, examine the bleeding, and debate whether he requires cautery in the OR. You check a complete blood count (CBC) test with diff and anticoagulation parameters, and decide to continue with a pressure dressing. You also ask him about any pain and other symptoms, and review his electrocardiogram (ECG) with the electrophysiologist. You spend 19 minutes with him, including in his room and on the floor reviewing his labs, orders, and ECG.

Outpatient, Typical

You are seeing an 83-year-old male for a follow-up in your outpatient clinic ten days after an elective pacemaker placement. He has been doing well overall since his last visit with no complaints. His wound is healing well and he is symptom-free. You perform a targeted history-taking and physical examination, including a wound check. You review his current medication list as well. He is also seen by an electrophysiologist in your practice who performs an ECG and interprets it. His visit lasts 22 minutes, of which you spend 14 minutes with him face-to-face.

Outpatient, Complex

You are seeing a 79-year-old female in your outpatient clinic who had an automatic implantable cardioverter-defibrillator (AICD) placed two days ago. Her family reports that she has not been herself and incontinent of urine many times. You perform a history and exam and her wound site is clean and dry. But she is not oriented to time and seems dehydrated on exam with dry mucous membranes. You ask your nurse to perform a glucose check and she has a glucose of 420. Her family reports that she did not restart her insulin after returning home. You send her to the emergency department and the total visit lasts 42 minutes, of which you spend 25 minutes with her face-to-face and 17 minutes coordinating with your nurse and calling the emergency department.

Dermatology

Outpatient, Complex

You are seeing an 81-year-old female in follow-up for a skin flap procedure, which occurred six days ago. The patient is seeing you for suture removal. You perform a targeted review of the patient's history since the procedure, and she reports that the flap site is red, tender, and "doesn't look right." On your exam, as you prepare to remove the suture, you note that the site is purulent and erythematous. You explain to the patient that you believe her wound is infected. You remove the sutures, send bacterial cultures from the wound, and review the patient's allergy history. Since she has a history of MRSA, you start her on Bactrim and instruct her to return the next day as you want to follow her closely. You review her pain—which is well-controlled—and answer her other questions. You spend 24 minutes with her face-to-face, including the time for suture removal and culturing of her wound.

Outpatient, Typical

You are seeing a 66-year-old male for a follow-up of a skin lesion removal that occurred two days prior via cryosurgery. He has no new complaints, but is somewhat worried that the area where the procedure was performed is "red." You spend some extra time reassuring him that this erythema is expected at this point in his course, and answer his other questions around the risk of infection. You spend 12 minutes face-to-face with the patient, which includes your targeted history-taking, examination of the surgical site, and answering all of his questions.

Outpatient, Complex

You are seeing a 72-year-old male in follow-up who underwent excision of a clinical suspicious mole of the scalp in your office eight days ago. You personally remove the sutures. You also want to discuss the preliminary pathology results with him, which indicate that the lesion is melanoma. You discuss the results of the biopsy with both the patient and his wife, who are distressed and worried about next steps, and discuss needed labwork and referral to oncology. You spend 19 minutes with the patient face-to-face, which includes the time for suture removal, wound care instructions, and answering of his questions about melanoma and expected course.

General Surgery

Inpatient, Complex

You are seeing a 72-year-old woman who was admitted through the emergency room (ER) for acute cholecystitis and you performed a cholecystectomy. She did well immediately post-operatively. At about 24 hours after her surgery, she develops fever and hypotension, and is admitted to the ICU for presumed sepsis. She is being primarily managed there by the medical

ICU team, but you follow her closely, which includes rounding with the ICU team, reviewing her labs, and talking with her family. You spend 22 minutes in the ICU (this includes time with the patient's family in her room and at the nursing station).

Inpatient, Typical

You are seeing a 75-year-old man who was admitted for a Whipple procedure four days ago. He was in the ICU for one day, and then was transferred to the floor and has been stable. On post-operative day four, an amylase level from his Jackson-Pratt (JP) drain output returns as normal, so you supervise the resident in person as she pulls the drain. You order nasogastric (NG) tube removal, review the remainder of his labs, and discuss his pain, which is currently well-controlled. You spend 27 minutes in total caring for the patient, all of which is in the patient's room or on the inpatient ward.

Outpatient, Complex

You are seeing a 67-year-old woman in outpatient follow-up who underwent an appendectomy three days prior. She had called earlier that morning to say that the incision was tender and seemed to be draining some fluid, so your front desk asked her to come in to be seen. When you see her, she tells you that she has been having low-grade fevers, in addition to pain around her incision. On your exam, you discover that her wound is erythematous, draining purulent fluid, and tender to touch. You swab the wound for bacterial cultures, and review the patient's antibiotic history and allergies. You are reminded that she has anaphylaxis to penicillin and cephalosporins, and thinks she may have had hives with Bactrim. You step out of the room to briefly discuss her care with an infectious disease colleague, and decide to treat her with clindamycin. You explain the new antibiotic to her, as well as the potential adverse events she should watch for and when she should follow up. You spend 7 minutes discussing her care with your infectious disease colleague outside of the room, and 21 minutes face-to-face with the patient.

Neurosurgery

Inpatient, Critical

You are seeing a 66-year-old male in the ICU who underwent lumbar laminectomy with fusion the day prior. You are the attending physician for the patient in the ICU, and round with the team, which includes a neurosurgery resident, nurse practitioner, and ICU pharmacist. During rounds, which occur outside of the patient's room, you review the labs, current medications, and any events from overnight. You perform a full examination and history, check the patient's urine output, dressings, and vital signs. You answer the patient's and family's questions. After leaving the room, you review the note from the pain management service and complete your own note,

which was started by your resident. You spend 21 minutes rounding outside the patient's room, 12 minutes in the patient's room, and 16 minutes reviewing and completing your own documentation in the ICU.

Inpatient, Complex

You are seeing a 77-year-old male who underwent lumbar laminectomy and decompression three days ago. You review the patient's labs, input and output, and events from the past 24 hours. The patient notes that his left leg looks a lot more swollen than it did yesterday. You examine his wound, perform a neurologic exam, and then examine his leg, which is swollen and somewhat tender to palpation. You order a Doppler ultrasound of this leg and discover a DVT. Your patient's wife is very worried about his leg and the possibility of anticoagulation as the patient has had recurrent gastrointestinal bleeds from diverticulosis. You spend 37 minutes providing care for the patient, which includes both the face-to-face time as well as the time to coordinate his imaging study, discussing the case with your gastroenterology colleague, and the decision on whether to start anticoagulation.

Outpatient, Complex

You are seeing a 68-year-old female who underwent lumbar laminectomy and decompression nine days ago. This is her second outpatient visit. She did well post-operatively with the exception of a surgical site infection with MRSA that was diagnosed shortly after discharge from the hospital at her first post-operative visit. She has been on Bactrim and presents with an urticarial rash. You explain that you think she is likely having a type 1 hypersensitivity reaction to the antibiotic, and that it must be discontinued. You review her chart and note she recently had *C. difficile* while on clindamycin, and thus decide to complete her course with linezolid. You explain the new antibiotic to her, as well as the potential adverse events she should watch for. The visit lasts for approximately 22 minutes, including the time it took to review her chart and decide on a different antibiotic.

Ophthalmology

Outpatient, Complex

You are seeing a 68-year-old woman in follow-up for a cataract removal with intraocular lens (IOL) implant of the right eye that occurred yesterday. She did well immediately after her surgery. Today, the patient was seen by your technician for 15 minutes. You then come in to see her, check her refractive error, and dilate her eye. Her intraocular pressure is elevated, which you presume is due to steroids. You think about bringing her back to the operating room versus doing the procedure in the office, and discuss this with the patient. Ultimately you decide to use the tip of a sterile needle to release some pressure in the exam room. The patient does well, and after

discussing signs and symptoms for which she should return, she leaves your office. You spend 26 minutes face-to-face with the patient, including the time it takes to decrease her intraocular pressure.

Outpatient, Typical

You are seeing a 74-year-old man in follow-up for iridotomy by laser surgery for glaucoma. The procedure occurred nine days prior. During the visit, you ask the patient how he is doing and about his pain level. You personally check his intraocular pressure and it is normal. You answer a question on when he should follow up, and advise him to come back 2–3 months later. He has no further questions and leaves your office. You spend 12 minutes face-to-face with him.

Inpatient, Complex

You are seeing a 71-year-old woman who was admitted for repair of an orbital fracture following an assault. Her fracture was repaired two days prior. You round on her in the inpatient ward. The patient is very concerned about both her level of pain, and has a new pruritic rash most consistent with urticaria. You decide to consult the pain management team after extensive discussion with the patient. You review her medications and decide that Unasyn is the most likely cause of her rash, so you switch her antibiotics to ceftriaxone and clindamycin. Your patient is also concerned about where she will be able to go after discharge, as she no longer feels safe in her home. After gathering some more social history, you consult both social work and case management. You spend 22 minutes face-to-face with the patient. You spend 9 minutes talking to the nursing staff and making calls to the consultants.

Appendix B. Materials Provided to Interviewees

Introduction

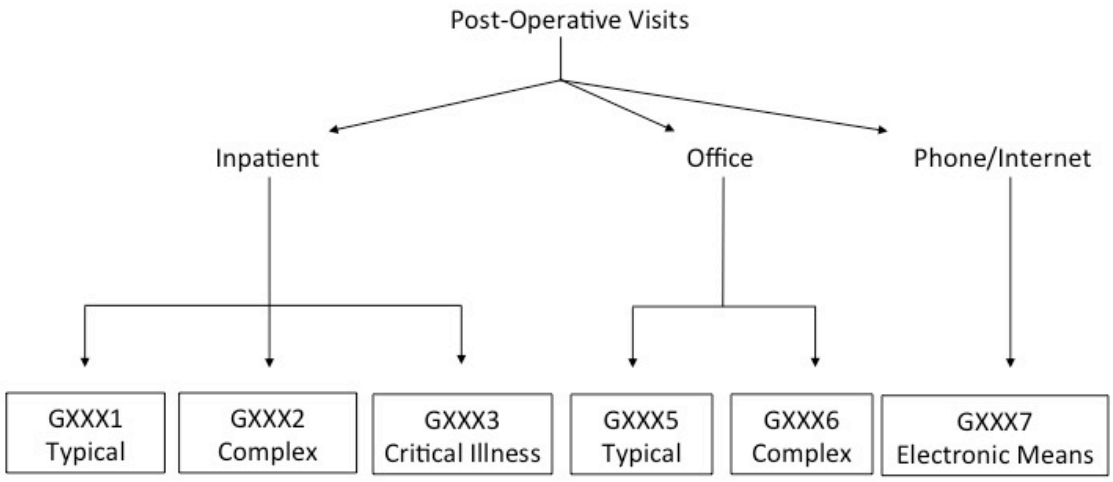
For many surgeries, Medicare payment covers a bundle of post-operative visits delivered during a global period of 90 days or 10 days after surgery. Congress has mandated that CMS collect data from physicians on the number and types of visits that occur during the global post-operative period.

CMS recently proposed having physicians use nonpayment billing codes (also known as G-codes) to collect information on services during global periods. The goal of this work is to understand how physicians may use these proposed G-codes.

This memo contains instructions for using the new proposed post-operative G-codes for physicians. Please note that the proposed G-codes also include two codes for clinical staff time (GXXX4 and GXXX8), which are not included as part of this survey (see Figure B.1).

The codes vary by setting, complexity, and how the time increments should be determined.

Figure B.1. G-Codes Described by CMS in Post-Operative Rule



NOTE: The code for patient interactions via electronic means was not included in the survey described in this report.
SOURCE: Figure adapted by authors from CMS, 2016a.

Coding Instructions

Each code represents a 10-minute increment of time. Table B.1 below provides an explanation of each code and guidance on choosing the correct time increment. Time increments are reported using the same general guidance used for time-based CPT codes, and should be rounded as follows in the table.

Table B.1. Guidance for Choosing the Correct CPT Code and Time Increment

Time	Number of Increments Billed	Number of Codes Billed
≤ 15 minutes	One 10-minute increment	Code (e.g., GXXX1) X 1
16–25 minutes	Two 10-minute increments	Code X 2
26–35 minutes	Three 10-minute increments	Code X 3
36 minutes or longer	Four or more 10-minute increments	Code X the appropriate number for the length of the visit

For inpatient visits included in the surgical package, time should be billed in 10-minute increments based on aggregate time spent on that calendar day. This includes time spent at the immediate bedside or elsewhere on the floor or unit, such as time spent with the patient and family members, reviewing test results or imaging studies, discussing care with other staff, and documenting care.

For office or other outpatient visits included in the surgical package, time should be billed in 10-minute increments based *only* on time spent on face-to-face care at the visit, which reflects the current rules for time-based outpatient codes.

For visits via phone or Internet included in the surgical package, time should be billed in 10-minute increments based on time spent interacting with the patient or composing a message to the patient (see Table B.2).

Table B.2. Coding Examples for Inpatient Visits, Outpatient Visits, and Visits via Phone or Internet

Code	Type of Visit	Care Provided	Examples of Services Provided
Inpatient Visits			
GXXX1	Typical	Typical post-operative inpatient care that involves the services listed in the next column. The vast majority of inpatient visits are expected to fall in this category.	• Review vitals, laboratory or pathology results, imaging, and progress notes • Take interim patient history and evaluate post-operative progress • Assess bowel function • Conduct patient examination with a specific focus on incisions and wounds, post-surgical pain, complications, and fluid and diet intake • Manage medications (e.g., wean pain medications) • Remove stitches, sutures, and staples • Change dressings • Counsel patient and family in person or via phone • Write progress notes, post-operative

Code	Type of Visit	Care Provided	Examples of Services Provided
			orders, prescriptions, and discharge summary • Contact and coordinate care with referring physician or other clinical staff • Complete forms or other paperwork
GXXX3	Critical illness	Would be reported when the practitioner is providing primary management of the patient at a level of care that would be reported using critical care codes if it occurred outside of the global period. Critical care refers to acute impairment of one or more vital organ systems in a patient with an associated high probability of imminent or life-threatening deterioration in the patient's condition	• Primary management of a critically ill patient
GXXX2	Complex	Post-operative care that the physician judges to be more complex than a typical visit, but not critical care; it is expected that the physician document what services were judged to be outside of a typical visit.	• Primary management of a particularly complex patient such as a patient with numerous comorbidities or high likelihood of significant decline or death • Management of a significant complication • Complex procedures outside of the OR (e.g., significant debridement at the bedside) • Secondary management of a critically ill patient where another provider, such as an intensivist, is providing the primary management but the physician who performed the procedure remains actively involved
Office or Other Outpatient Visits			
GXXX5	Typical	Typical post-operative office-based care; the vast majority of office or other outpatient visits are expected to fall in this category.	• Review vitals, laboratory or pathology results, imaging, and progress notes • Take interim patient history and evaluate post-operative progress • Assess bowel function • Conduct patient examination with a specific focus on incisions and wounds, post-surgical pain, complications, and fluid and diet intake • Manage medications (e.g., wean pain medications) • Remove stitches, sutures, and staples

Code	Type of Visit	Care Provided	Examples of Services Provided
			• Change dressings • Counsel patient and family in person or via phone • Write progress notes, post-operative orders, prescriptions, and discharge summary • Contact and coordinate care with referring physician or other clinical staff • Complete forms or other paperwork
GXXX6	Complex	Post-operative care that the physician judges to be more complex than a typical visit; it is expected that the physician document what services were judged to be outside of a typical visit.	• Management of a complication (e.g., infection) • Additional procedures that do not require a return to the OR and are not expected as part of the typical course
Via Phone or Internet			
GXXX7	Patient interactions via electronic means	Care that is provided via phone, the internet, or other electronic means outside the context of a face-to-face visit; it cannot be used the day before, the day of, or the day after an in-person visit.	• Care provided through a patient portal • Care provided by telephone

Appendix C. Survey Results by Specialty

Table C.1. Cardiology

Vignette	Number of Respondents	Percentage Choosing Correct Code	Percentage Choosing Correct Time Increment
Inpatient, complex			
Overall	9	56	33
Physician	9	56	33
Coding/billing staff	0	NA	NA
Outpatient, typical			
Overall	9	78	44
Physician	9	78	44
Coding/billing staff	0	NA	NA
Outpatient, complex			
Overall	9	89	22
Physician	9	89	22
Coding/billing staff	0	NA	NA

NOTE: NA = not applicable.

Table C.2. Dermatology

Vignette	Number of Respondents	Percentage Choosing Correct Code	Percentage Choosing Correct Time Increment
Outpatient, complex			
Overall	28	79	79
Physician	27	81	78
Coding/billing staff	1	0	100
Outpatient, typical			
Overall	28	100	86
Physician	27	100	89
Coding/billing staff	1	100	0
Outpatient, complex			
Overall	28	36	79
Physician	27	33	81
Coding/billing staff	1	100	0

Table C.3. General Surgery

Vignette	Number of Respondents	Percentage Choosing Correct Code	Percentage Choosing Correct Time Increment
Inpatient, complex			
Overall	16	44	63
Physician	16	44	63
Coding/billing staff	0	NA	NA
Inpatient, typical			
Overall	16	44	88
Physician	16	50	88
Coding/billing staff	0	NA	NA
Outpatient, complex			
Overall	16	75	31
Physician	16	75	31
Coding/billing staff	0	NA	NA

NOTE: NA = not applicable.

Table C.4. Neurosurgery

Vignette	Number of Respondents	Percentage Choosing Correct Code	Percentage Choosing Correct Time Increment
Inpatient, critical			
Overall	13	23	46
Physician	10	30	50
Coding/billing staff	3	0	33
Inpatient, complex			
Overall	13	69	46
Physician	10	80	50
Coding/billing staff	3	33	33
Outpatient, complex			
Overall	13	77	69
Physician	10	80	60
Coding/billing staff	3	67	100

Table C.5. Ophthalmology

Vignette	Number of Respondents	Percentage Choosing Correct Code	Percentage Choosing Correct Time Increment
Outpatient, complex			
Overall	14	100	57
Physician	13	100	54
Coding/billing staff	1	100	100
Outpatient, typical			
Overall	14	100	43
Physician	13	100	46
Coding/billing staff	1	100	0
Inpatient, compex			
Overall	14	93	43
Physician	13	92	38
Coding/billing staff	1	100	100

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