Pulmonary Function Testing: Coding and Billing Issues

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Clinicians who conduct pulmonary function tests should understand the principles and rules of the coding and billing system for pulmonary function testing. Certain billing codes will not be paid by most insurance payers. To ensure that your pulmonary function tests are appropriately coded, billed, and paid: (1) obtain a Current Procedural Terminology (CPT) coding book and an International Classification of Diseases 9th Revision (ICD-9) diagnosis book, and understand how they are used in setting coding and billing strategies, (2) know the people in your facility who do the billing and work with them to produce an appropriate coding and billing strategy, (3) make sure the physicians are involved in developing and implementing your coding and billing strategy, and (4) assure that your laboratory is set up properly to follows the Medicare rules for participation, that you have the appropriate testing supervision, that the appropriate administrative structure is in place to assure compliance with all regulations, and that you meet American Thoracic Society testing standards. *Key words: forms and record control, health insurance, current procedural terminology, international classification of diseases, Medicare.* [Respir Care 2003;48(8):786–790.

Introduction

Pulmonary function testing (PFT) includes procedures that are among the oldest in clinical medicine. Spirometry was first described in the mid-19th century, and the techniques for lung volume determinations and measurements of carbon monoxide uptake were developed in the early 20th century.[1] Initially these tests were done to help physicians better understand disease pathophysiology, and the costs were simply part of the overall physician fee. By the mid-20th century, however, growing testing complexity and costs prompted the development of specific billing for these procedures. Though they were initially simple and straightforward, billing procedures have gotten more confusing for 2 reasons. First, the classical testing procedures have evolved over the years to provide more and better information. Examples include the plotting of a flow-volume loop from the forced vital capacity maneuver, plotting of the gas dilution pattern during nitrogen washout, and adding exhaled gas analysis to exercise assessments. Bill-

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ing codes developed for the original procedures do not necessarily reflect the complexities of these additions. Second, pressure from third-party payers to assure that only necessary testing is done, and only with appropriate patients, has placed considerable barriers (usually in the form of billing rules and consequent denials) to getting tests performed and reimbursed. This is made even more complicated because the thousands of payers in the United States often have different and conflicting rules. A successful pulmonary function laboratory must therefore not only understand the technical aspects of testing[2–4] but must also understand the nuances of proper coding and billing.[5,6]

It is beyond the scope of this report to comprehensively review all of the billing rules in place throughout the United States. Instead, this article provides a framework in which to build a coding and billing strategy and provides some examples of how to code and bill these procedures. We begin by discussing some of the terminology used in pulmonary function testing and follow this with discussion of some of the common billing rules. We will use Medicare as a prototype payer system, but it is important to realize that there are several thousand other insurance companies in the United States, and each has its own ways of doing things.

Terminology

To optimize coding and billing it is important first to understand the vocabulary. A few important terms to understand are:

Billing and *payment*. Billing is the submission of a charge to a payer. Payment is what is actually received. You can bill the payer in a sensible, ethical manner, but it is the payer's rulebook that determines ultimate reimbursement.

Diagnostic codes. Disease diagnoses are commonly coded using the International Classification of Diseases 9th Revision (ICD-9) codebook.[7] For a payer to provide payment the patient must have an appropriate cardiorespiratory diagnosis and be assigned the appropriate ICD-9 code(s).

Co-pay. Payment usually does not come from just the third-party payer. Most insurance companies, Medicare in particular, require that the patient pay up to 20% of the allowable charge out of his or her pocket at the time of testing (the "co-pay"). This generally cannot be waived. Indeed, waiving (or discounting) the co-pay can be considered fraud in that it implies that the procedure could be performed for less than the billed amount.

Procedure code. Procedure codes are alpha-numeric codes used by billers and payers to describe procedures. Many institutions have their own internal set of codes for procedures, whereas payers generally require billing per the 5-digit Current Procedural Terminology (CPT) codes,[8] a universal coding system designed and updated by the American Medical Association. CPT codes can also have modifiers applied to clarify a bill. Commonly used modifiers for PFT include "-25" (testing not considered part of a physician evaluation); "-26" (testing and interpretation billed separately); "-51" (multiple procedures); and "-59" (separate procedures). In recent years Medicare has grouped the payment rate for the various CPT codes into a few broad Ambulatory Patient Classification (APC) categories (Table 1). The 3 common APC groupings used for PFT are 0367, 0368, and 0369. The assigned relative value units (used to calculate reimbursement) in 2003 for these 3 codes are 0.83, 1.056, and 2.34 respectively.

Table 1. Common Pulmonary Function Tests*

Ambulatory Payment Classification	Current Procedural Terminology Code	Test Description
0367	94010	Spirometry
	94200	Maximum voluntary ventilation (MVV)
	94375	Flow-volume loop
	94720	Diffusing capacity of the lung for carbon monoxide (D_{LCO})
0368	93721	Body plethysmography
	94060	Spirometry (before and after bronchodilator)†
	94260	Thoracic gas volume
	94350	Maldistribution of ventilation
	94360	Airway resistance
	94370	Closing volume
	94620	Simple exercise test
	94725	Membrane D_{LCO}
	94750	Pulmonary compliance
0369	94070	Multiple spirometries after airway challenge†
	94621	Complex exercise test†
	95070	Administration of bronchoprovocation agent‡

*All tests require general physician supervision
†Requires direct physician supervision
‡Requires personal physician supervision

CPT codes for PFT can be confusing because many codes no longer accurately reflect the procedure being done and redundant codes have been added in attempts to reflect advancements in technology (eg, the development of flow sensors and graphics led to a new code for "flow-volume loop" [CPT 94375], even though it is the same test procedure as "spirometry" [CPT 94010]).

Bundling and edits. Bundling refers to the payers' policy of considering payment for one code to be inclusive of other codes. An example is that the flow-volume loop is generally considered bundled with spirometry (ie, you can bill for both, but payment will be bundled into 1 code,

usually the least expensive). Bundling is automatically done by payers using "edits" in their computerized billing processing systems. It is important to note that edits and bundling rules often differ among payers.

Accreditation

Most payers require that PFT have some form of accreditation to assure that good clinical and laboratory practices are followed. For example, Medicare has rules of participation and must be assured that the hospital or facility is abiding by these rules. In general, if the laboratory is associated with a facility that is accredited by the Joint Commission on Accreditation of Health Care Organizations, it meets the Medicare requirement. Physician supervision (medical direction) is also required by the payers, but the level of supervision required depends on the test (see Table 1). Specifically, Medicare requires only "general" supervision for most tests (physician need not be present for testing but must oversee laboratory policy and procedures). However, for some potentially risky testing (eg, methacholine challenge) Medicare requires "direct" supervision (physician must be in the facility and immediately available) and sometimes "personal" supervision (physician in the testing room).

The American Thoracic Society (ATS) has established a pulmonary function laboratory registry,[9] one of the purposes of which is to affirm that high-quality testing is provided in member laboratories, in accordance with ATS standards.[2–4] Although not required by payers at present, documentation of adherence to such standards may become important.

Developing Coding/Billing Strategies

In setting up a coding/billing strategy for a laboratory, input is required from the testing team, the administrative and medical directors, and the facility's billing and collection office. Each procedure should be reviewed and the appropriate CPT code(s) that could be used should be determined. A careful review of the local Medicare and other payers' payment rules (especially code edits) is critical. Structuring the strategy requires considering the existing edits, the modifiers that are required, and the exact dollar payments for each code or combination of codes. It is important to note that sometimes a perfectly reasonable code that is not bundled with anything may have a $0 payment attached by payers such as Medicare. Having said this, it doesn't mean that a bill should not be submitted for such a code, because there are insurance companies that pay even when Medicare does not. Tracking productivity within the institution for FTE (full-time-equivalent) and budgetary validation would be other reasons to enter a bill even though there is a $0 Medicare reimbursement rate.

Spirometry

The spirogram requires a patient taking a maximal inhalation and then exhaling into the measurement device as hard and fast as possible. The data are plotted as both a volume-time curve and a flow-volume curve. There are several coding options. The 94010 code describes "spirometry" and is grouped in APC 0367. The flow-volume CPT code 94375 could also be used, but it is in the same Medicare APC 0367 and thus pays the same technical fee (professional fees may be different in some regions). An argument could be made that the flow-volume curve gives information that the traditional volume-time curve does not. However, Medicare still considers the 2 procedures bundled, and one code edits out the other. The passive vital capacity CPT code 94150 should not be used for spirometry, because Medicare has assigned a $0 payment for that code.

More problematic is the maximum voluntary ventilation. This is a separate procedure, but it is often performed along with the spirogram. Although it is clearly a separate test that provides separate information, Medicare and many other payers often bundle the maximum voluntary ventilation CPT code 94200 (APC 0367) with the codes for spirometry. Nevertheless, we generally bill for it separately in the hope that some payers will recognize it as a legitimately separate procedure.

If 2 spirograms are performed before and after bronchodilator, a separate CPT code exists for this (94060), which is grouped under Medicare APC 0368. This code will also edit out if billed with either spirometry or flow-volume loop; in fact, if these codes are billed together, Medicare will pay only the *lower* code rate.

Lung Volume Testing

Lung volume testing really involves 2 procedures. First, functional residual capacity (FRC) is determined via either gas dilution/washout methods or plethysmography. Second, a subsequent vital capacity is performed to determine the total lung capacity and lung volume subdivisions.

Gas dilution measurements of FRC can be coded as 94240 (APC 0368). Newer technology allows the gas washout profile to be plotted and analyzed, which can give additional information about gas distribution in the lung. A separate CPT code 94350 (APC 0368) addresses this as "assessment of maldistribution," but Medicare often bundles this with the FRC. Nevertheless, we still code and bill for it because some payers recognize the validity of this practice. When FRC is determined ple-

thysmographically, it is generally coded as "thoracic gas volume," CPT code 94260 (APC 038). There is also a "total body plethysmography" code (CPT code 93720), but it usually refers to vascular assessments and is not commonly used to bill for FRC determinations. The maldistribution assessment code is obviously irrelevant when the plethysmograph is used.

In determining lung volumes a separate vital capacity is required (CPT code 94150). However, because this slow vital capacity code has a $0 Medicare payment attached, no Medicare reimbursement is available. However, again, billing is still reasonable, as other payers recognize the validity of this practice.

Diffusing Capacity for Carbon Monoxide

Billing for the test for the lung's diffusing capacity for carbon monoxide (D_{LCO}) is relatively straightforward with CPT code 94720 (APC 0367). There is also a "membrane diffusion capacity" CPT code 94725 (APC 0368) for doing multiple diffusing capacities at different oxygen levels. Different oxygen levels alter hemoglobin binding for carbon monoxide, and by measuring the slope of that change, the 2 components of D_{LCO} (membrane diffusing capacity and pulmonary capillary blood volume) can be separated.

Airway Challenge

The usual method for airway challenge testing is to do multiple spirometry measurements with increasing concentrations of aerosolized methacholine. The multiple spirometry code (CPT code 94070, APC 0368) is appropriate here. Simultaneous single spirometry or flow-volume loop bills will be edited out. Methacholine challenge testing can also have CPT code 95070 used to reflect the aerosol procedure. A positive methacholine challenge may require subsequent administration of an aerosolized bronchodilator. This could be billed as a separate respiratory care procedure (CPT code 94640), although the post-bronchodilator spirogram could not.

Exercise Testing

Pulmonary exercise testing has 2 CPT codes available: simple (CPT code 94620, APC 0368) and complex (CPT code 94621, APC 0369). In general, both procedures should quantify exercise tolerance and measure cardiorespiratory responses to the exercise. The difference between the two is that the latter involves analysis of exhaled gas (oxygen consumption and carbon dioxide production). If arterial blood gas analysis is performed, the blood-draw and analysis can be billed separately (CPT code 36600 for arterial sampling, 82803 for analysis with calculated arterial oxygen saturation, 82805 for analysis with measured arterial oxygen saturation). In contrast, multiple pulse oximetry assessments (CPT code 94761) during exercise can be billed but have a $0 Medicare payment. Separate billing for electrocardiograph rhythm strips (CPT 93040) can also be done, but a full 12-lead electrocardiograph response to exercise has a separate exercise testing CPT code (CPT codes 93017 or 93015). Of note is that there are many other CPT codes for specific exhaled gas analyses. These, however, generally edit out with the complex exercise test code.

The 6-minute walk test has been a subject of controversy as to how it should be billed. Physical therapists have been billing for it for a number of years (CPT code 97750), but doing so requires the services of a licensed physical therapist, and they are generally unavailable in pulmonary function laboratories. A common pulmonary function laboratory practice is to use the CPT code 94620 (simple exercise test) for the 6-minute walk test. To use this CPT code, however, it would probably be prudent to measure 1 or 2 cardiorespiratory variables (eg, heart rate, pulse oximetry) in addition to noting the exercise tolerance.

Miscellaneous Tests

Airway resistance. Determination of resistance to air flow with oscillatory or plethysmographic methods can be billed with CPT code 94360 (APC 0368). This code is not covered by many insurance carriers, however.

Closing volume. This is an uncommonly performed test that analyzes exhaled nitrogen following a single inhalation of 100% oxygen, to assess peripheral airway function. It is reimbursed by some third-party payers using CPT code 94370 (APC 0368).

Muscle forces. Muscles forces can be assessed by maximum inspiratory and expiratory pressures against a closed shutter. These tests are distinctly different and separate from all other PFTs, but there is not yet a recognized CPT code for these maneuvers.

Respiratory Compliance. Respiratory system compliance can be determined via analysis of pressure-volume relationships, though most institutions do not have the equipment or personnel trained to perform this. If done, it can be billed with CPT code 94750 (APC 0368).

Summary Recommendations

Recommendation #1. Obtain a CPT coding book and an ICD-9 diagnosis book. Understand how they are used in setting coding and billing strategies.

Recommendation #2. Find the people in your facility who are doing the billing. Get to know them. They know

the Medicare and other insurance company rules and can advise on edits and other rules as well as make sure that coding and billing are in compliance with various regulations. Where these people have problems, however, is where we can help—matching codes to what is actually done. Working together can produce effective coding and billing strategies.

Recommendation #3. Make sure the physicians are involved. Not only can they help develop strategies for technical reimbursement, they can also help the facility maximize professional interpretation reimbursement.

Recommendation #4. Assure that the laboratory is set up properly. Make sure it follows the Medicare rules for participation, has the appropriate testing supervision, and has the appropriate administrative structure in place to assure compliance with all regulations. In addition, adherence to testing standards such as those established by the ATS is both clinically appropriate and may have reimbursement implications in the future.

Recommendation #5. Get involved. Coding and reimbursement rules are often determined by bureaucrats who often have little understanding of how medicine is practiced and how PFT is done. Organizations such as the American Association for Respiratory Care, ATS, American College of Chest Physicians, and the National Association for Medical Direction of Respiratory Care have committees and lobbyists who are charged with addressing these issues and making the rules more appropriate. These organizations can use help from those in the front lines.

REFERENCES

1. Hess D. History of pulmonary function testing. Respir Care 1989; 34(6):427–442; discussion 442–445.
2. Standardization of spirometry, 1994 update. American Thoracic Society. Am J Respir Crit Care Med 1995;152(3):1107–1136. (PDF version available at www.thoracic.org/statements)
3. American Thoracic Society. Single-breath carbon monoxide diffusing capacity (transfer factor): recommendations for a standard technique—1995 update. Am J Respir Crit Care Med 1995;152(6 Pt 1):2185–2198. (PDF version available at www.thoracic.org/statements)
4. Crapo RO, Casaburi R, Coates AL, Enright PL, Hankinson JL, Irvin CG, et al. Guidelines for methacholine and exercise challenge testing-1999. This official statement of the American Thoracic Society was adopted by the ATS Board of Directors, July 1999. Am J Respir Crit Care Med 2000;161(1):309–329. (PDF version available at www.thoracic.org/statements)
5. American Association for Respiratory Care. Uniform reporting manual for diagnostic services. Dallas: AARC; 1999.
6. Coding essentials for respiratory therapy/pulmonary function. St Paul MN: Medical Learning Inc; 2003. Available at http://www.medlearn-.com/new.html#monitor (accessed 6/12/03).
7. ICD-9 expert for hospitals, Vol 1,2,3 International Classification of Diseases 9th Revision Clinical Modifications, 6th ed. Effective 10–1-02 to 9–30-03. Ingenex, St Anthony Publishing/Medicode 2003.
8. Current procedural terminology, professional edition. American Medical Association; 2003. Available at http://www.ama-assn.org/ama/pub/category/3113.html. A monthly newsletter "CPT Assistant" is available https://webstore.ama-assn.org/index.jhtml. An annual book of updates "CPT changes: an insider's view" is available http://www.ama-assn.org/ama/pub/category/7350.html
9. MacIntyre NR III, MacIntyre NR, Crapo RC for the American Thoracic Society Pulmonary Function Lab Registry. Characteristics of pulmonary function laboratories in North America (abstract). Am J Respir Crit Care Med 2002;165:A345. Additional information at www.thoracic.org.