a report prepared for the
Missouri Asthma Prevention and Control Program

Proper Inhalation Technique for Patients with Asthma

An Examination of Need, Recommendations & Health Care Provider Reimbursement

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Inhaled Medication: A Cornerstone of Treatment

Inhaled prescription medications have become the cornerstone of asthma treatment and have contributed considerably to the decline in morbidity and mortality rates. The efficacy of these medications depends on optimal delivery to the lungs, a less-than-simple process since it depends on the patient's mastery of inhalation technique. The challenge of optimal delivery is compounded by the fact that devices designed to deliver inhaled medications on the market today have different inspiratory flow rate and resistance requirements. What is ideal for one device is not for another. Thus, it is imperative that patients receive instruction on how to use specific inhaled medication devices properly.

Inhalation Technique Errors are Common

Numerous studies that observed patient technique for using inhaled medications consistently have shown low levels of proficiency, with the best rates up to just 55 percent among children. Recent studies that used objective, quantitative measurement of inspiratory flow rate and inhalation time demonstrated inappropriate air stream characteristics for many adult popula-

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tions as well as children. The most common errors involved inspiration that was too fast, too slow or for too short a time. Without proper inhalation technique, optimal medication delivery to the lungs cannot be achieved.

Impact of Poor Inhalation Technique

Inspiratory flow is associated with variations in the clinical effect of the medication, such as pulmonary function parameters and relief from symptoms. The link between medication efficacy and inhalation technique is multi-factorial, involving (a) aerosol quantity (i.e., total emitted dose per inhalation), (b) aerosol quality (i.e., average particle size), (c) dose consistency (i.e., total dose emitted over life of inhaler), (d) side-effect risk (i.e., related to amount deposited in the mouth, throat and oropharynx), and (e) lung deposition (i.e., total dose delivered). Proper inhalation technique assures the right balance among these factors resulting in optimal delivery of medication to the lungs.

Recent epidemiological studies of asthma and disability have concluded that that the introduction of powerful, efficacious inhaled medications has not produced the expected population-level results – reduced disease burden or improved quality of life. Poor adherence to medication regimens is the most likely explanation for the unmet health improvement goals. While a portion of adherence is related to prescription medication access (i.e., cost, pharmacy refill rates), another aspect of adherence involves proper inhalation technique (or lack thereof). Deductive reasoning as well as empirical evidence show a clear relationship between poor inhalation technique and inadequate disease control.

New Treatment Guidelines Address Need for Proper Inhalation Technique

To help health care professionals bridge the gap between current knowledge and practice, the National Heart, Lung, and Blood Institute (NHLBI) has prepared guidelines for the diagnosis and management of asthma. In its *Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma* (EPR 2007), the NHLBI recommends "assessment of inhalation technique" at each patient visit and requires it prior to any step up in therapy. Unlike its predecessor guideline from 5 years ago, EPR 2007 provides a specific definition for optimal delivery technique. For example, a meter dose inhaler for Beta2-agonists is to be used as follows: "actuation during a slow (30 L/min or 3-5 seconds) deep inhalation, followed by a 10-second breathhold."

Objective Measurement of Inhalation Technique Now Available

It is now possible for health care providers to objectively measure inhalation technique with a low-cost, reusable tool called an inspiratory flow measurement device (IFMD). The leading IFMD brand is In-Check Dial® by Clement Clark International. The In-Check Dial simulates different "internal resistance" for many inhaled medication devices, enabling inhalation technique assessment specific for the patient's treatment regimen. The resulting objective measurement after using the In-Check Dial allows patients to modify their technique (by inhaling with more or less effort over a different period

of time). This type of objective feedback is necessary to correct inhalation technique and achieve optimum inspiratory flow. Research has shown that clinicians are unable to accurately assess optimum inspiratory flow by visual observation alone.

When and Where to Assess Inhalation Technique

The NHLBI Expert Panel recommends clinicians see patients with uncontrolled, moderate persistent, or severe persistent asthma about every 6 months; patients with severe persistent asthma should to be seen more often. Each of these visits should include an assessment of inhalation technique and instruction on how to achieve optimal inspiratory flow rate. The NHLBI Expert Panel also recommends that any patient with asthma seen in an emergency room or hospital receive an assessment of inhalation technique.

Every office visit should include an assessment of inhalation technique.

Mechanism for Health Care Provider Reimbursement

The assessment of inhalation technique and accompanying patient education is a distinct professional service that is defined by CPT code 94664. Per the American Medical Association, 94664 is "demonstration and/or evaluation of patient utilization of an aerosol generator, nebulizer, metered dose inhaler or IPPB device." Health care providers who assess and teach proper inhalation technique are able to receive reimbursement for this service when the service documented and billed correctly. Reimbursement for 94664 from health plans typically ranges from $14 to $40, depending on the type of plan: Missouri Medicaid (fee for service) $27, Commercial insurance carriers $25 - $40, and Medicare (fee for service) $14.

Billing 94664

Research conducted for this report showed that most (i.e., 9 of 10 surveyed) Missouri health plans reimburse for 94664 with normal billing procedures. A few plans capped reimbursement for 94664 at 2 times per year, but the majority of plans had no annual limit or rules related to age or gender. A typical health plan's reimbursement policy allows for charges related to 94664 under its policy for respiratory therapy services which requires a diagnosis code denoting breathing difficulties, such as asthma ICD-9 code 493, to be listed on the bill/claim. In addition to the diagnosis code requirement, some plans require the use of modifier -25 to be appended to an evaluation and management (E&M) service code (e.g., 99213). Charges for 94664 may also be billed on the same visit that spirometry services are provided by adding modifier -59 to the appropriate spirometry code (e.g., 94010, 94060 or 94375). Regardless of the billing procedure, clear documentation in the patient record that inhalation technique assessment was provided as a separate, distinct

Commercial and government-sponsored health plans cover inhalation technique assessment and instruction; Reimbursement ranges from $14 to $40.

service is required. Documentation can be as simple as a standard form or chart note that records results of the IFMD (e.g., In-Check Dial) before and/or after patient education services.

Recommendations Summary for Health Care Providers

1. Provide inhalation technique assessment and education at each office visit of a patient with asthma; office visit frequency should be based on patient-specific needs as per the EPR 2007 guidelines.
2. Any patient with asthma receiving services in an emergency room or hospital should be provided inhalation technique assessment and education.
3. A reasonable charge based on the amount of time and complexity for services billed under CPT code 94664 is approximately $55.
4. In the typical outpatient medical office setting, it is probably most reasonable and efficient to provide inhalation assessment and instruction services before or after a typical office visit. In this case, the bill/claim should include modifier -25 to the appropriate E&M code (e.g., 99213-25) plus 94664 to show inhalation assessment and instruction services were provided.
5. If spirometry is performed on the same visit, the bill/claim should include modifier -59 to the appropriate spirometry code (e.g., 94010, 94060 or 94375).
6. In the case where a patient receives only inhalation assessment and instruction service during a visit, the bill/claim would be submitted with 94664 as a stand-alone service.

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