Keywords

epistaxis, nosebleed, nasal packing, nasal cautery, hereditary hemorrhagic telangiectasia (HHT)

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Introduction

Nosebleed, also known as *epistaxis*, is a common problem that occurs at some point in at least 60% of people in the United States.[1] While the majority of nosebleeds are limited in severity and duration, about 6% of people who experience nosebleeds will seek medical attention.[2] For the purposes of this guideline, we define the target patient with a nosebleed as *a patient with bleeding from the nostril, nasal cavity, or nasopharynx that is sufficient to warrant medical advice or care. This includes bleeding that is severe, persistent, and/or recurrent, as well as bleeding that impacts a patient's quality of life (QOL)*.

Interventions for nosebleeds range from self-treatment and home remedies to more intensive procedural interventions in medical offices, emergency departments, hospitals, and operating rooms. Epistaxis has been estimated to account for 0.5% of all emergency department visits and up to one-third of all otolaryngology-related emergency department encounters.[1,3,4] Inpatient hospitalization for aggressive treatment of severe nosebleeds has been reported in 6% of patients treated for nosebleeds in emergency departments.[4]

The comprehensive management of nosebleeds was recently addressed in 2 sets of publications: a series of guidelines on aspects of epistaxis management in France and an ''audit'' of epistaxis management from the United Kingdom. These 2 sets of publications addressed the initial evaluation of patients with nosebleeds, the use of packing and cautery as initial treatments, the care of nosebleeds in patients who are taking medication that impair clotting, the use of surgical and endovascular procedures for refractory epistaxis, and the management of nosebleeds in patients with comorbid conditions, such as hypertension or hereditary hemorrhagic telangiectasia (HHT) syndrome.[5-12] This multidisciplinary clinical practice guideline has been developed with the guideline development process of the American Academy of Otolaryngology–Head and Neck Surgery Foundation (AAO-HNSF) to create evidence-based recommendations to improve quality and reduce variations in the care of patients with nosebleeds.[13]

Guideline Scope and Purpose

The purpose of this multidisciplinary guideline is to identify quality improvement opportunities in the management of nosebleeds and to create clear and actionable recommendations to implement these opportunities in clinical practice. Expert consensus to fill evidence gaps, when used, is explicitly stated and supported with a detailed evidence profile for transparency. Specific goals of this guideline are to promote best practices, reduce unjustified variations in the care of patients with nosebleeds, improve health outcomes, and minimize the potential harms of nosebleeds and/or interventions to treat nosebleeds.

The target patient for the guideline is any individual aged $\geq$3 years with a nosebleed or history of nosebleed. Children aged <3 years are excluded, as the guideline development group (GDG) felt that very young, otherwise healthy children rarely required evaluation for nosebleeds. The group also recognized that literature informing treatment of nosebleeds in infants and toddlers was scant. Additionally, while bleeding from the nose may occur secondary to a variety of systemic diseases and head and neck disorders, this guideline does not apply to patients who have a diagnosed bleeding disorder, tumors of the nose or nasopharynx, vascular malformations of the head and neck, a history of recent facial trauma, or who have undergone nasal and/or sinus surgery in the past 30 days. The management of nosebleeds in such excluded patients centers on the treatment of these causative factors, and the recommendations within this guideline may not consistently apply in such cases. Patients with intranasal telangiectasias associated with HHT are not excluded, as the GDG noted opportunity for improved care of these patients with specific recommendations based on studies of patients with HHT and epistaxis.

The target audience of this guideline is clinicians who evaluate and treat patients with nosebleed. This includes primary care providers, such as family medicine physicians, internists, pediatricians, physician assistants, and nurse practitioners. It also includes specialists, such as emergency medicine providers, otolaryngologists, interventional radiologists/neuroradiologists and neurointerventionalists, hematologists, and cardiologists. A plain language summary accompanies this clinical practice guideline for the use of patients and nonclinicians. The setting for this guideline includes any site of evaluation and treatment for a patient with nosebleed, including ambulatory medical sites, the emergency department, the inpatient hospital, and even outpatient remote encounters with phone calls and telemedicine (**Table 1**). Outcomes to be considered for patients with epistaxis include control of acute bleeding, prevention of recurrent episodes of nasal bleeding, complications of treatment modalities, and accuracy of diagnostic measures. Other considerations are cost, time, and efficiency of diagnostic and treatment measures in patients with nosebleed.

This guideline addresses the diagnosis, treatment, and prevention of nosebleed. It focuses on nosebleeds that commonly present to clinicians through phone calls, office visits, and emergency room encounters. This guideline discusses first-line treatments, such as nasal compression, application of vasoconstrictors, nasal packing, and nasal cautery. It also addresses more complex epistaxis management, which includes the use of endoscopic arterial ligation and interventional radiology procedures. Management options for 2 special groups of patients, patients with HHT and patients taking medications that inhibit coagulation and/or platelet function, are included in this guideline.