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RESEARCH

Effectiveness of a pharmacist-physician collaborative program to manage influenza-like illness

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ABSTRACT

Objectives: To examine the effectiveness of collaborative physician–community pharmacist programs to treat influenza-like illness (ILI) with respect to clinical outcomes and health care utilization.
Design: Prospective multicenter cohort study.
Setting: Fifty-five pharmacies in Michigan, Minnesota, and Nebraska.
Patients: Adult patients presenting to the pharmacy with ILI during the 2013–14 influenza season (October 1, 2013 to May 30, 2014).
Intervention: Pharmacists screened adult patients presenting with ILI, completed a brief physical assessment, performed a point-of-care rapid influenza diagnostic test (RIDT), and provided appropriate referral or treatment per an established collaborative practice agreement (CPA) with a licensed prescriber. Pharmacists followed-up with patients 24 to 48 hours after the encounter to assess patient status and possible need for further intervention.
Main outcome measures: Number of patients screened, tested, and treated for influenza.
Results: Of the 121 patients screened, 45 (37%) were excluded and referred to their primary care provider or an urgent care facility for management. Of the 75 patients (62%) eligible for participation, 8 (11%) had a positive RIDT and were managed according to the CPA. Of the patients tested, 34.6% had no primary care physician and 38.7% visited the pharmacy outside of normal office hours. Only 3% of patients reported feeling worse at follow-up.
Conclusion: This study describes a physician-pharmacist collaborative model for treating ILI. Using an evidence-based CPA, pharmacists were able to provide timely treatment to patients with and without influenza.

Although influenza is largely a self-limiting infection, related complications result in at least 48,000 deaths and 226,000 hospitalizations each year in the US.[1-3] Neuraminidase inhibitors recommended for the treatment of influenza halt the spread of virus in the body by preventing the cleavage of virions from infected cells, but they do not eradicate the virus.[4] As a result of this nonlethal mechanism of action, studies have emphasized that early disease identification and treatment of individuals with the influenza virus is essential for achieving optimal outcomes.[4-9] Early and accurate diagnosis remains a challenge.[10] Many patients seek symptomatic relief through self-medication with over-the-counter (OTC) products rather than immediate medical attention. Subsequently, the 48-h treatment window, when initiation of treatment is recommended to achieve the best results, has expired by the time patients seek care.[11] Delayed as well as nonexistent antiviral administration

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Key Points

Background:

- This study examines the effectiveness of a collaborative physician–community pharmacist program to treat influenza-like illness (ILI).

Findings:

- To our knowledge this is the largest study to describe a community pharmacy–based influenza point-of-care testing program and how pharmacists, in collaboration with physicians, treat ILI.
- Better understanding of programs such as this has the potential to increase patient access to care.

can result in infected patients remaining symptomatic and contagious for longer periods of time as well as experiencing otherwise avoidable antibiotic usage for treatment of respiratory complications that may arise owing to delayed treatment.[4-9]

Patients seeking symptomatic relief from influenza in pharmacies is logically the earliest opportunity to intervene. Pharmacists are the most accessible members of the health care team.[12] In the US, 92% of the population live within 5 miles of one of approximately 60,000 community pharmacies.[13,14] In addition to proximity, patients seek care from pharmacists because of convenience. Many pharmacies are open 24 hours a day, 7 days a week, with minimal waiting time to see a pharmacist. Estimates suggest that there are more than 250 million pharmacy visits each week in the US.[15] For acute symptomatic illnesses such as influenza, patients or their caregivers often seek care in a community pharmacy before their symptoms become troublesome enough to prompt contacting their physician or visiting the emergency department.

Studies describing the management and outcomes of patients with influenza-like illness (ILI) who present to community pharmacies are scant. During the 2007–2008 and 2008–2009 influenza seasons, we piloted a project that sought to describe a collaborative physician-pharmacist influenza management program.[16] It was determined that a pharmacist-physician collaborative program resulted in rapid identification and provision of care to patients with ILI. Patients eligible to be managed in the pharmacy had taken their first dose of antiviral within 1 hour of presentation to the pharmacy. The findings from that pilot study indicated that pharmacists could safely and accurately diagnose and treat influenza in the pharmacy setting and that additional exploration of the this model was warranted.

The purpose of the present study was to examine the effectiveness of a collaborative physician-community pharmacist program to treat ILI with respect to clinical outcomes and health care utilization.

Methods

Study design

This was a prospective multicenter cohort study conducted from October 1, 2013, to May 30, 2014, and approved by the University of Nebraska Medical Center and Ferris State University Institutional Review Boards.

Study setting and personnel

A total of 55 community pharmacies, both chain and independent, in three states (Michigan, Minnesota, and Nebraska) were identified as testing centers. Pharmacies volunteered to be part of the study, and each chain decided which stores to include based on staffing, store volume, and layout. All study pharmacies were required to possess a valid Clinical Laboratory Improvement Amendments (CLIA) certificate of waiver, and all pharmacists responsible for enrolling and screening patients were required to have successfully completed the Collaborative Institutional Training Initiative (CITI) program and a 20-hour point-of-care testing certificate course.[17]

The three states were chosen, in part, because of the similar nature of the laws related to collaborative practice agreements (CPAs). In all three states, it is possible for a physician to sign a protocol that covers patients other than their own. That allowed each organization, chain or independent, to identify and collaborate with a single prescriber. A total of six physicians signed CPAs across the organizations in the three states. Differences among the laws governing collaborative practice in these three states were minor and did not functionally affect the conduct of the study or delivery of the service.

Study population

Patient screening and enrollment occurred only when influenza activity in the state was classified as “local” or higher according to weekly surveillance data published by Centers for Disease Control and Prevention (CDC).[18] All patients who self-identified to pharmacy staff with health concerns during the active enrollment period were eligible for screening. Patients aged ≥18 years (≥19 years in Nebraska, per age of majority statute) were considered for inclusion in the study if they presented with signs and symptoms consistent with ILI (fever, cough, sore throat). Patients meeting the inclusion criteria completed an intake form to determine the presence of risk factors for influenza-related complications or if symptoms were unlikely to be caused by the influenza virus (Figure 1).[11] Individuals with chronic medical conditions and pregnant women are at increased risk for influenza-related complications and were excluded from the study.[11] Also, patients were excluded automatically from study participation if symptoms were not consistent with ILI or had been present for more than 48 hours; if the patient had received live influenza vaccine or neuraminidase inhibitor within the previous 2 weeks; or if the patient was immunocompromised, was receiving home oxygen therapy, was pregnant or breastfeeding, or had known renal disease or dysfunction, asthma, chronic obstructive pulmonary disease, heart failure, or hypersensitivity to oseltamivir or any component of the product. If exclusion criteria were present, patients were referred to their primary care provider (PCP) or other appropriate care. Although excluded individuals could not participate further in the study, the number of patients screened and reasons for exclusion were captured.