SciMedCentral

Journal of Family Medicine & Community Health

Editorial

Implementation of Home-Based Vaccine Administration for Patients within a Family Medicine Practice

Jenelle M. Hall*, Elizabeth L. Kyle and Lisa P. Edgerton

Department of Coastal Family Medicine, New Hanover Regional Medical Center, USA

***Corresponding author**

Jenelle M. Hall, Department of Coastal Family Medicine, New Hanover Regional Medical Center, 2131 S. 17th Street, P.O. Box: 9000, Wilmington, NC 28402-9000, USA, Tel: 310-701-9835; Email: jenellehall2@gmail.com

Submitted: 26 February 2016

Accepted: 01 March 2016

Published: 02 March 2016

ISSN: 2379-0547

BACKGROUND/PURPOSE

Administration of vaccines has been identified as an essential approach to the prevention of morbidity and mortality caused by vaccine-preventable diseases. However, vaccinations in the United States are significantly below target rates. In the 2014-2015 trend report, the Centers for Disease Control and Prevention (CDC) reported an overall influenza vaccination rate of 47.1% for people at least 6 months of age [1]. The rate of vaccination for pneumococcal was lowers than that of influenza, with a 31.2% administration rate reported in 2014 [2]. Healthcare workers such as pharmacists, nurses, physicians, and medical assistants among others have the training and capability to improve vaccine administration rates in a variety of healthcare settings.

Home visits have recently reemerged among primary care practices in conjunction with a shift in healthcare to individualized care and patient-centered medical homes. The Center for Medicare & Medicaid Services (CMS) does not require patients to be homebound to qualify for home visits however, there must be a documented medical necessity or patients must be in a medically underserved area with insufficient access to home health services [3]. Implementation of home visits within a primary care practice provides a unique opportunity to assess the patient in their home environment while including a multidisciplinary approach to patient care. In 2012, CMS launched an initiative called "Independence at Home Demonstration" to determine the clinical and financial benefits of home-based primary care. The pilot implementation and results are still ongoing, however year one results have demonstrated significant cost savings and improved quality measures [4]. The success of these initial results indicates home visits may be a potential platform for extension of further primary care activities.

Incorporation of vaccinations during home visits continues to optimize patient care through removal of access barriers, most notably transportation for homebound patients. Dalby DM, et al, demonstrated a significantly higher rate of influenza and pneumonia vaccine administration by nurses completing home visits in conjunction with the patient's primary care physicians, compared to standard care during office visits [5]. The rate of influenza and pneumonia vaccination rates were higher in the nurse home visit group, 90.1% and 81.9%, compared to standard office care, 53.0% and 0% ($p < 0.001$). The study outcomes indicated that multidisciplinary healthcare providers can have a significant impact on vaccine administration rates particularly in a home visit format. While these results are positive, the role of healthcare personnel in providing immunizations during home visits has not yet been established as a standard of care in primary care settings. The purpose of this paper is to outline a replicable process for vaccine administration during established multidisciplinary home visits to improve comprehensive patient care.

HOME VISIT IMMUNIZATION IMPLEMENTATION

Coastal Family Medicine (CFM) is a family medicine training site, which operates under New Hanover Regional Medical Center (NHRMC), an 855 licensed bed, not-for-profit, community teaching hospital. The family medicine residency program is composed of 18 medical residents, 6 physician faculty, 2 pharmacists, and a behavioral health specialist, all of whom participate in home-based care. Medical students, pharmacy students, and pharmacy residents also rotate through the family medicine center throughout the year. A component of the family medicine residency program is coordination of home visits for clinic patients meeting CMS criteria. CFM home visits were initiated in July 2015 and based upon primary care provider referral. A home visit, which lasts approximately one hour, consists of a physical exam by a physician, as well as a medication review and home inspection. An opportunity was recognized during home visits to improve care through vaccine administration for patients who only receive primary care through home-based visits.

At the time of vaccine administration implementation, CFM coordinated care through home visits for 27 patients. A standard process was created for administration of immunizations during home-based visits, which can be applied across the health care system for further home visits by qualified immunizers. This is currently a pharmacist driven process however, CFM has several potential providers who are authorized to immunize during home visits including: physicians, pharmacists, medical

assistants, nurses, and pharmacy students. The North Carolina Board of Pharmacy does not have specific guidance on home visit vaccine administration; however other state boards may have specific regulations. Because CFM is a part of a larger health system, vaccine administration requires coordination with the billing department at the hospital-level to ensure correct billing and reimbursement for vaccines. A facility fee charge is omitted; however, both vaccine and the administration are submitted for reimbursement.

Development of this standard process includes developing a list of required supplies, vaccine transportation details, and a stepwise process for the pharmacy department and additional immunizers to replicate in other home visit circumstances. At this time, home visit vaccinations are focused on influenza and pneumonia vaccines because these are the most frequently administered vaccines at CFM. Frozen vaccines such as the zoster vaccine are excluded from the CFM process because freezing transport conditions are not guaranteed.

Prior to the visit, the immunizer reviews the electronic medical record (EMR) for immunization history and to determine qualifying vaccines. The patient is then contacted to discuss vaccines and eligibility. Transportation of vaccines requires reference to the CDC's Vaccine Storage and Handling Toolkit to ensure safe storage conditions [6]. The cost to purchase materials for transport of vaccines is ~ $90, which included a cooler and digital temperature monitoring device. All other materials including needles, gloves, gauze, bandages, "conditioned" cold packs, alcohol pads, packing material (bubble wrap), a mini sharps container, and Vaccine Information Statements (VIS) were available at the CFM clinic. Following vaccine administration documentation is placed in the medication administration record (MAR) and the patient's health maintenance record is updated to reflect the updated vaccination. A chart note is placed in the medical record by the immunizer to provide additional records of the visit and for billing purposes.

DISCUSSION

The home visit immunization process has been successfully implemented at CFM with 8 out of 27 patients who were eligible for home-based vaccinations. The development of a standard process allows for replicable work flow by a variety of qualified immunizers within the practice site. CFM represents an ideal setting to improve immunization rates through home based delivery due to its established multidisciplinary home visits since July 2015. Successful implementation of this service requires collaboration between the billing and pharmacy departments to establish a health system supported process and verify correct charges and reimbursements. Practices without established home visits or a large multidisciplinary team may find cost and time barriers to implementation of home based vaccine administration. CFM has a large volume of learners including students and residents who rotate through family medicine, thereby further reducing indirect costs. If medical practices take advantage of students, residents, medical assistants, pharmacists and nurses to provide home-based immunizations, the cost associated with time required to provide home vaccinations may be offset by cost to the health system if patients develop vaccine-preventable illnesses.

Future directions include immunization-focused home visits in an effort to target home bound patients who are seen infrequently during flu season. Immunizations can be expanded to administration of a wider range of vaccines as well potentially target the pediatric patient population. Overall, this process demonstrates the feasibility of providing immunizations during multidisciplinary home visits and can be implemented in other practices.

ACKNOWLEDGEMENTS

Eduardo A. Seijo, PharmD, Regulatory Operations Manager and Ashley Paterson, CPhT, Pharmacy Revenue Analyst.

REFERENCES

1. Monthly cumulative influenza coverage estimates by State, HHS Region, and the United States, National Immunization Survey-Flu (NIS-Flu) and Behavioral Risk Factor Surveillance System (BRFSS), 2014-2015 influenza season. 2015.
2. Pneumococcal vaccination coverage among adults 18-64 years with high-risk conditions and ≥65 years by State, HHS Region, and the United States, Behavioral Risk Factor Surveillance System (BRFSS), 2008 through 2014. 2016.
3. Medicare Claims Processing Manual. 2015.
4. Independence at Home Demonstration. 2015.
5. Dalby DM, Sellors JW, Fraser FD, Fraser C, van Ineveld, Howard M. Effect of preventive home visits by a nurse on the outcomes of frail elderly people in the community: a randomized controlled trial. CMAJ. 2000; 162: 497-500.
6. Vaccine Storage and Handling Toolkit. 2015.

Cite this article

Hall JM, Kyle EL, Edgerton LP (2016) Implementation of Home-Based Vaccine Administration for Patients within a Family Medicine Practice. J Family Med Community Health 3(1): 1074.