Using an Electronic Medication Refill System to Improve Provider Productivity in an Accountable Care Setting

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ABSTRACT

BACKGROUND: Even within fully integrated health care systems, primary care providers (PCPs) often lack support for medication management. Because challenges with conducting medication reconciliation, improving adherence, and achieving optimal patient outcomes continue to be prevalent nationally, it is critical that PCPs are provided the resources and support they need to provide high-quality, patient-centered care in an accountable care environment.

PROGRAM DESCRIPTION: Sharp Rees-Stealy Medical Group uses a fully electronic medication refill system that allows for a centralized team to manage all incoming requests. Over time, 16 disease-specific protocols were created that allowed the pharmacy team to absorb approximately 80% of incoming refill requests for all enrolled PCPs. The refill clinic assessed all clinic information that a PCP would normally review in order to approve a refill. Tasks performed by the clinical pharmacists included medication reconciliation, dosage adjustment, and coordination of distribution from external mail order and retail pharmacies.

OBSERVATIONS: In 2014, the number of tasks related to refill management reviewed by the refill/medication therapy management service totaled 302,592, resulting in 140,350 refill authorizations and multiple interventions related to medication use. Physicians have estimated that the service provides between 20 and 30 minutes of time savings per day. Assuming an annual PCP salary of around \$200,000, 20 to 30 minutes per day would amount to \$33 to \$50 saved per day per physician. The savings is even higher when time savings from other clinical staff is included.

IMPLICATIONS: The development of this electronic medication refill service has provided the following important lessons: (a) organizations rely on a leader or champion to push through process reforms—this program started with reluctant physicians first to determine best practices; (b) the lack of clinical pharmacist profiles within electronic health records (EHR) is a serious concern, since the creation of these profiles may not be easy or timely; and (c) PCPs working within an EHR environment will quickly embrace the idea of a service that can save them up to 30 minutes per day. With PCPs continuing to take on additional population health management tasks in accountable care organizations, pharmacists can provide workload offsets by meaningfully contributing to medication-related care.

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What this study adds

- The program described in this article highlights the critical components and successes of the Sharp Rees-Stealy Medical Group's electronic medication refill system.
- Creating a customized electronic health record profile for clinical pharmacists allows them to work to the full scope of their license and provide services that would traditionally be unavailable in stock software.
- Using a pharmacist-led electronic refill clinic can improve primary care provider productivity, communication between primary care and pharmacy team members, and patient care via medication therapy management services.

Even within fully integrated health care systems, primary care providers (PCPs) often lack support for medication management. Because challenges with conducting medication reconciliation, improving adherence, and achieving optimal patient outcomes continue to be prevalent nationally, it is critical that PCPs employ the appropriate resources and support they need to provide high-quality, patient-centered care.¹⁻⁵ With PCPs now dedicating more of their time to population health management tasks as part of patient-centered medical homes—a cornerstone of many accountable care organizations (ACOs)—delegating certain tasks to others is critical so that providers have the time to focus on meeting important quality metrics.^{6,7}

To improve and redesign PCP practice, some health care systems have introduced a pharmacy refill service to offset provider time and workload. Typically, disease protocols are used to allow pharmacists to approve refills under collaborative practice agreements. These cost-effective models have been proven to save physicians time and improve quality of care.⁸⁻¹⁰ Unfortunately, existing models often involve antiquated communication, including fax and phone refill requests from external pharmacies into a medical group. This best practices article highlights Sharp Rees-Stealy Medical Group's (SRSMG) fully electronic medication refill system, which has improved provider productivity and efficiency and streamlined communication between primary care and pharmacy team members.

What is already known about this subject

- Medication compliance, adherence, and persistence greatly contribute to the health and well-being of patients.
- Various strategies are used in health systems nationwide to monitor, process, and evaluate medication refills.
- Incorporating health information technologies into clinical care can improve provider workflow and team-based communication.

Program Description

SRSMG is a staff model medical group with 28 employed specialties located in southern California with more than 450 physicians. It is part of the larger Sharp Healthcare system, which is the largest integrated delivery network in San Diego. The system comprises 7 hospitals, 2 medical groups, a health plan, and several other entities within the continuity of care.

Rather than replicate existing models, SRSMG pursued a novel electronic approach that allowed for a centralized team to manage incoming requests from multiple sources. SRSMG has used Allscripts Touchworks electronic health record (EHR) for 9 years and is e-prescribing to all community pharmacies.¹¹ This allows electronic refill submissions to be managed “live” in a central queue. The same queue also receives requests via the patient portal, which allows patients to request refills directly. Phone calls are routed through a refill call center, and faxes are received via an electronic fax queue. In this way, a central team can manage the entire refill request spectrum and remove the burden from office staff and physicians.

This collaboration between an integrated health system and EHR vendor created a model that allowed pharmacists to work to their full scope of practice in California, including medication order entry and order submission to external pharmacies. Unfortunately, EHR vendors do not always include specific user profiles that are inclusive of clinical pharmacist privileges. Physicians and nurses had their own distinct profiles, but these were not ideal for clinical pharmacist tasks. The pharmacist profiles needed to include the ability to independently manage chronic medication use through prescription order change, to order relevant laboratory tests, and to integrate documentation into specified progress notes. In California, pharmacists are also now able to furnish some medications directly without physician prescriptions and to receive referrals to see a patient directly.¹²

The refill service was championed by clinical pharmacy services but was part of a larger effort to redesign the primary care workflow. Physician leadership in family/internal medicine and in quality improvement were instrumental in supporting the operational changes and in piloting efforts to build refill management protocols through a series of internal pilots. Over time, 16 disease-specific protocols were created that allowed the pharmacy team to absorb approximately 80% of incoming refill requests for all enrolled PCPs. The refill clinic assessed all clinic information that a PCP would normally review in order to approve a refill. For example, previous visit history, laboratory results, and patient's vital signs might all be assessed before authorizing a prescription refill. This collaborative practice evolved into a best practice protocol for refills, as the pharmacy service attempted to do what physicians did not have time to do. This included clinical tasks such as medication reconciliation, dosage adjustment, and coordination of distribution from

external mail order and retail pharmacies. This practice had an immediate positive impact on chronic medication use, which is often included in pay-for-performance metrics.

Observations

The design, implementation, and rollout of the SRSMG refill/medication therapy management (MTM) service occurred over the time period of 2011-2014. Initial challenges mainly involved information technology, since creation of an electronic platform that would allow a centralized solution was essential to the service's success. Development of pharmacist protocols by disease state was also daunting, with feedback required from PCPs and specialists. Medical group governance for the protocols was primarily overseen by the multidisciplinary Pharmacy and Therapeutics Committee, who also had further editing rights over everything that was created. Ultimately, the end product was a collection of refill protocols that would enable the pharmacy team to deliver the highest level of quality.

The pilot phase began in February 2012 at 1 site with 14 providers. After the first year, the service rolled out to 5 sites and 43 providers. The rollout was completed in March 2014, expanding to over 14 sites. The service is now available to 130 providers. As the refill/MTM service rolled out to more clinics, it became clear that the refill protocols would need to evolve with the various prescribing cultures of each new clinic. It was surprising to see how much refill management varied from one provider setting to the next. For example, some physicians were much more meticulous with checking clinical history and making sure the patient had been seen recently. This quickly validated that a best practice protocol for refill management was not just efficient, it was necessary to optimize and standardize pharmaceutical care across the medical group. In fact, providers commonly agreed that the comprehensive refill/MTM service was doing more than what they had been doing to ensure appropriate medication use. For example, the protocols were written to include monitoring of laboratory values for certain medications that some providers may not routinely check in their practices.

Despite the comprehensive nature of the refill service workflow, it proved to be more time efficient than the previous PCP process because the focus was only on medication issues rather than all of disease management. In 2013, the number of tasks related to refill management reviewed by the refill/MTM service totaled 138,472. These tasks were electronic messages, similar to emails, that must be completed by the physician or physician's delegate. This task management resulted in 61,887 refill authorizations sent to pharmacies on behalf of providers and multiple interventions related to medication use. The refill/MTM service now includes medication protocols for multiple chronic disease states, including hypertension, dyslipidemia, diabetes, depression, hypothyroidism, gastroesophageal reflux

disease, asthma, chronic obstructive pulmonary disease, contraception, allergies, gout, migraines, herpes simplex virus, osteoporosis, erectile dysfunction, and benign prostatic hyperplasia. The protocols also cover some over-the-counter medications. In March 2014, enrollment was completed for all PCPs. By the end of April 2014, the number of tasks handled by the service increased dramatically, nearly matching all that was done in 2013. For 2014, the task count increased to 302,592, resulting in 140,350 refills authorized.

An informal survey of SRSMB physicians found that the service provides between 20 and 30 minutes of times savings per day. This calculation is based on various factors, such as actual chart review time, time on the phone with a pharmacy, and reduction in duplicate refill requests from both patient and pharmacies. Assuming an annual PCP salary of around \$200,000, 20 to 30 minutes per day would amount to \$33 to \$50 saved per day per physician (PDPP). This would bring an approximate savings PDPP to \$42-\$64. In addition, clinical staff (e.g., nurses and medical assistants) have reported similar time savings because of reduced refill tasks and paper faxes they had to review on behalf of the provider:

"The refill clinic has helped us to have more time to focus on direct patient care rather than reviewing and entering refill requests."

—Lead RN, Primary Care Practice

"The actual and noticeable feeling of a reduction in work load was quickly evident."

—Manager, Patient Care, Quality Resource Management

"I truly believe the refill clinic has been one of the best implementations in Sharp Rees-Stealy. Staff and physicians know it and have found it extremely helpful."

—LD, RN, Primary/Specialty, Family Practice

Implications

Important lessons were learned from the SRSMB experience that may be helpful to other ACOs as they develop or refine their own medication refill services. To validate these lessons, the authors sought feedback from participants of The Working Group on Optimizing Medication Therapy in Value-Based Healthcare. This working group is composed of pharmacy and health policy leaders from various ACOs, health care performance improvement alliances, and medical group and industry trade organizations who come together to discuss key policy issues important for stakeholders involved in accountable care. The following sections provide insight on how similar programs (Marshfield Clinic in Wisconsin, Baystate Health in Massachusetts, and Fairview Health in Minnesota) operate in their respective ACOs and highlight key implications.

Communicating a Vision

Unfortunately, it was common early on to hear feedback that the SRSMB project could never work across the entire group. What sounded like a win-win scenario of reducing physician workload quickly became an intensive political effort to change the way care teams addressed medication management. Many physicians, for example, were initially uncomfortable relinquishing control over antidepressant refills, since there were varying practices on how many refills to approve before reassessing the patient. These concerns, however, lead to greater provider engagement and success because even the most meticulous physicians soon became advocates of a standardized approach.

Rather than trying to push through process reforms, SRSMB began by intentionally focusing its efforts on the reluctant providers upfront. These providers were often top physicians who paid great attention to how they managed their refills. It was their feedback, in fact, that helped create the best practice pharmacy protocols. Some of the initial clinics enrolled also had much higher volume of refill requests, despite a smaller number of providers. These sites often included patients with more severe ailments and required greater dedicated pharmacy resources. In order to convince these stakeholders of the program's benefits, the clinic had to be diligent about not wavering from the protocols and be flexible with how the protocols could evolve based on feedback. The reluctant providers ultimately helped to champion the program and grow enrollment significantly.

The vision, therefore, for what *could* be accomplished was essential to reinforce with all stakeholders, not just those supporting the refill service. By the end of the enrollment process, 99% of PCPs were participating. With standardized care across the care continuum being a foundation for delivering care in an accountable care setting, the importance of convincing all internal stakeholders of the service's importance was critical to its success. Other ACO working group members had similar experiences. Fairview Health has been developing similar protocols for over 10 years, and it found that in the early years, buy-in was a lengthy process. However, now the medication refill service has become a streamlined process as PCPs gained trust. Baystate Health has identified champions at the medical and administrative level to build support for formalizing protocols among its members.

Selecting the Right Software Platform

The absence of clinical pharmacist profiles within EHRs is a serious concern, since the creation of these profiles may not be easy or timely. Electronic profiles specifically designed for clinical pharmacists enables them to access inpatient and outpatient data, review progress notes and laboratory values, send electronic prescriptions on behalf of the providers and

modify prescriptions as needed, and communicate directly with patients' care teams. Without proper electronic privileges, pharmacists cannot be rapidly deployed to care teams that need their help. It may also prevent pharmacists from practicing to the full extent of their license, which is the most likely way they will be able to save physicians time. While all of the working group environments have pharmacist profiles in their respective EHRs, modifications were needed to fully engage the pharmacists and enable them to take ownership of medication management processes. As ACOs consider modifying their current EHRs or adopting new software platforms, it will be vital to consider the software's flexibility in creating or modifying distinct clinical profiles.

The usefulness and accessibility of the patient portal is also an important contributor to patient satisfaction and ensuring timely and accurate medication lists and refills.^{13,14} At SRSMG, the patients are encouraged to enroll in the patient portal by various marketing techniques (e.g., via phone and email) to help them become engaged in their own health care experience. Enrolled patients can order medication refills, check their lab results, and email their provider with questions. Marshfield Clinic has made significant efforts to educate patients on the use of the patient portal, since it not only allows for patients to be better engaged in their own health care, but it also improves patient communication with providers.

Importance of Reduced Burden for PCPs

Although it is often reported that pharmacists are the most cost-effective and successful providers of chronic pharmaceutical care, the model for how to optimize pharmacist resources in integrated, fully electronic care systems is still being explored.^{7,8,10} To ensure that PCPs are willing to cede certain pharmaceutical care tasks to clinical pharmacists, the benefits of doing so must be clearly communicated. PCPs working within EHR environments will quickly embrace the idea of a service that can save them 30 minutes per day. SRSMG is just beginning to realize the potential clinical improvement offered by an integrated refill/MTM service. Pharmacists routinely intervene when unsafe doses, duration problems, or duplication of therapy is found. With PCPs continuing to take on additional population health management tasks in ACOs, pharmacists can provide workload offsets by meaningfully contributing to medication-related care.

This article has explored SRSMG's best practices in using a centralized electronic medication refill system, one of many mechanisms that support the optimal use of pharmaceuticals in an ACO environment. The authors hope that this and the previously published best practices articles provide guidance and spur conversation for ACOs interested in improving medication management-related services.^{17,18}

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Schoenhaus, Lustig, Westrich, and Dubois contributed to the design and concept of this article. Schoenhaus, Rivas, and Monrreal collected the data, while Schoenhaus took the lead in data interpretation, with assistance from the other authors. The manuscript was written and revised primarily by Lustig and Schoenhaus, with input from the other authors.

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REFERENCES

1. Pronovost P, Weast B, Schwarz M, et al. Medication reconciliation: a practical tool to reduce the risk of medication errors. *J Crit Care*. 2003;18(4):201-05.
2. Boockvar KS, Carlson LaCorte H, Giambanco V, Fridman B, Siu A. Medication reconciliation for reducing drug-discrepancy adverse events. *Am J Geriatr Pharmacother*. 2006;4(3):236-43.
3. Poole DL, Chainakul JN, Pearson M, Graham L. Medication reconciliation: a necessity in promoting a safe hospital discharge. *J Healthc Qual*. 2006;28(3):12-19.
4. Bates DW, Cullen D, Laird N, et al. Incidence of adverse drug events and potential adverse drug events. ADE Prevention Study Group. *JAMA*. 1995;274(1):29-34.
5. Classen DC, Pestotnik SL, Evans RS, Lloyd JF, Burke JP. Adverse drug events in hospitalized patients: excess length of stay, extra costs, and attributable mortality. *JAMA*. 1997;277(4):301-06.
6. Longworth DL. Accountable care organizations, the patient-centered medical home, and health care reform: what does it all mean? *Cleve Clin J Med*. 2011;78(9):571-82.

7. Rittenhouse DR, Shortell SM, Fisher ES. Primary care and accountable care—two essential elements of delivery-system reform. *N Engl J Med*. 2009;361(24):2301-03.
8. Riege, Valerie J. A patient safety program and research evaluation of U.S. Navy pharmacy refill clinics. In Henriksen K, Battles JB, Marks ES, Lewin DI, eds. *Advances in Patient Safety: From Research to Implementation*. Vol. 1. Rockville, MD: Agency for Healthcare Research and Quality; 2005.
9. McKinnon A, Jorgenson D. Pharmacist and physician collaborative prescribing: for medication renewals within a primary health centre. *Can Fam Physician*. 2009;55(12):e86-91.
10. Cassidy IB, Keith MR, Coffey EL, Noyes MA. Impact of pharmacist-operated general medicine chronic care refill clinics on practitioner time and quality of care. *Ann Pharmacother*. 1996;30(7-8):745-51.
11. Allscripts. Allscripts TouchWorks EHR. Available at: <http://www.allscripts.com/en/solutions/ambulatory-solutions/ehr/Show/ProductSelect/AllscriptsEnterpriseEHR/Overview.html>. Accessed January 14, 2016.
12. California State Legislature. Pharmacy Practice (SB No. 493). 2013. Available at: http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201320140SB493. Accessed January 14, 2016.
13. Osborn CY, Mayberry LS, Wallston KA, Johnson KB, Elasy TA. Understanding patient portal use: implications for medication management. *J Med Internet Res*. 2013;15(7):e133.
14. Schnipper JL, Gandhi TK, Wald JS, et al. Design and implementation of a web-based patient portal linked to an electronic health record designed to improve medication safety: the Patient Gateway medications module. *Inform Prim Care*. 2008;16(2):147-55.
15. Billups SJ, Delate T, Newlon C, Schwiesow S, Jahnke R, Nadrash A. Outcomes of a pharmacist-managed medication refill program. *J Am Pharm Assoc*. 2003;53(5):505-12.
16. Centers for Medicare & Medicaid Services. Revisions to Payment Policies Under the Physician Fee Schedule, Clinical Laboratory Fee Schedule, Access to Identifiable Data for the Center for Medicare and Medicaid Innovation Models & Other Revisions to Part B for CY 2015. 42 CFR 412 Fed Reg 219 (Nov 13, 2014). Available at: <https://www.gpo.gov/fdsys/pkg/FR-2014-11-13/pdf/2014-26183.pdf>. Accessed February 2, 2016.
17. Brummal A, Lustig A, Westrich K, et al. Best practices: improving patient outcomes and costs in an aco through comprehensive medication therapy management. *J Manag Care Spec Pharm*. 2014;20(12):1152-58. Available at: <http://www.amcp.org/WorkArea/DownloadAsset.aspx?id=18838>.
18. Griesbach S, Lustig A, Malsin L, Carley B, Westrich KD, Dubois RW. Best practices: an electronic drug alert program to improve safety in an accountable care environment. *J Manag Care Spec Pharm*. 2015;21(4):330-36. Available at: <http://www.jmcp.org/doi/abs/10.18553/jmcp.2015.21.4.330>.