

2013

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Recommended Citation

Tran E, Jennings BT. Cultivation and Implementation of Community-Engaged Pharmacy Services in a Free Clinic to Enhance Care for the Medically Underserved. *Inov Pharm*. 2013;4(3): Article 119. <http://pubs.lib.umn.edu/innovations/vol4/iss3/2>

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Cultivation and Implementation of Community-Engaged Pharmacy Services in a Free Clinic to Enhance Care for the Medically Underserved

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Acknowledgement: Jeanie Ashby, Maliheh Free Clinic Executive Director, Ayesha Khan, M.D., Maliheh Free Clinic Medical Director, Ted Schultz, M.D., the Maliheh Free Clinic staff and volunteers, and the Maliheh Free Clinic Board of Directors for their continual support in allowing the University of Utah College of Pharmacy to participate in the delivery of their clinic's services; Jenni Buu, Pharm.D. and Diane Ogborn, Pharm.D. for their assistance at the clinic and student mentorship; and the University of Utah College of Pharmacy students for their participation and willingness to get involved with the project.

Conflicts of Interest: There are no conflicts of interest.

Keywords: community-academic partnership, service-learning, underserved patient population, pharmacy services, clinic chart reviews, collaborative drug therapy management (CDTM), free clinic

Abstract

Partnerships between community free clinics and academic medical centers improve patient outcomes and enhance learning opportunities for students. A community-academic partnership between the Maliheh Free Clinic and the University of Utah College of Pharmacy was formed to fulfill a community need for pharmacy services, to promote interdisciplinary patient care, and to provide an experiential opportunity for students. The Maliheh Free Clinic based in Salt Lake City, Utah provides free primary health care to uninsured individuals who live 150% below federal poverty guidelines. Three pharmacy services were developed and implemented. These include: 1) clinic chart reviews which involve written recommendations following a comprehensive assessment of the patient's chart examining his or her disease states and the appropriateness of his or her medications; 2) medication reconciliations and discussion of pharmacy-related recommendations with patients during Diabetes Day, an inclusive interdisciplinary patient appointment that addresses important aspects of diabetes care; and 3) an insulin dose adjustment service through a collaborative practice agreement with the clinic to monitor a patient's blood glucose levels and adjust his or her medications accordingly on a weekly basis.

Introduction

Lack of insurance and inadequate access to quality health care result in negative social consequences.^{1,2} Uninsured individuals are less likely to obtain preventive care and more likely to miss work and school. This results in a less productive and less educated workforce.¹ Furthermore, individuals who are uninsured are more likely to use high-expenditure healthcare settings such as the emergency department. When individuals cannot pay for their care, cost shifts to those who can pay. This most often translates to an increase in insurance premiums which further exacerbates the current state of healthcare costs.¹

Free clinics currently provide care to a considerable portion of uninsured patients.³⁻⁷ Despite recent healthcare reform, it is estimated that 23 million individuals will remain uninsured suggesting that there will be a continuing need for free clinics.⁸ These clinics have been shown to provide cost-effective and efficient care matching or exceeding the quality of care provided to insured populations and decreases emergency department visits and hospitalizations.⁹⁻¹¹ A

promising avenue to supplement free clinics in meeting the challenges of providing care for uninsured patients is to build relationships and promote collaboration between community free clinics and academic health centers.¹²⁻¹⁷

Implementation of community-academic partnerships has improved patient outcomes in several disease states from HIV/AIDS to diabetes and hypertension.^{12, 18-21} In addition, student-led community-academic partnerships focused on providing quality primary care prevent delays in treatment, lower emergency department use, and decrease the utilization and cost of care.^{1, 22-25} The partnership also serves as a unique learning opportunity for students to enhance their view of the community as a learning resource.^{14, 26-32} As a result, students are able to more effectively contribute to the communities they serve, and better understand the social and cultural issues that impact how they approach the care of their patients in their communities.^{14, 26, 32, 33}

This descriptive narrative recounts the development and implementation of pharmacy services at a community free

clinic through a partnership with a college of pharmacy. The purpose of this partnership is to provide a needed service for the clinic and its patients, to encourage interdisciplinary collaboration, and to provide experiential opportunities for pharmacy students that allow them to interact with a diverse patient population.

Setting and Background

The Maliheh Free Clinic provides free medical services for uninsured individuals who live 150% below the federal poverty guidelines. In 2012, with six years of dedicated service in their community, the clinic provided care to approximately 5,000 different patients through 15,205 patient visits. The clinic serves a diverse patient population which includes a variety of ethnicities, the majority being Hispanics, Caucasians, and Pacific Islanders; an equal proportion of employed and unemployed individuals; and patients ranging from 0 years of age to greater than 65 years of age with most patients being in the 19 to 64 year old age group. Functioning as a primary care clinic, the clinic's principal focus is routine health maintenance and preventive care. Patients who need additional consultations are referred to specialists who often volunteer their time at the clinic. The clinic relies heavily on in-kind donations from providers and local community organizations. The clinic also serves as a training site for medical students, physician assistant students, and nurse practitioner students.

The Lowell Bennion Center at the University of Utah is home to a service-learning scholars program that supports and recognizes students in addressing community needs. This structured learning experience allows for students to better understand the importance of civic engagement in the context of their academic coursework and through reflection. Requirements of becoming a designated scholar involves an integrated service project (ISP). The project is the culmination of the program and must relate to academic coursework, meet a community need, and be sustainable. The pharmacy services at the Maliheh Free Clinic fit nicely with the objectives of the service-learning scholars program and therefore served as a complementary resource.

Since 2009, the University of Utah College of Pharmacy has hosted an annual dinner and charity silent auction to benefit the Maliheh Free Clinic. With the realization that the partnership would mutually benefit from an increased level of pharmacy involvement extending beyond the one-day fundraising event, the University of Utah College of Pharmacy students approached the clinic's executive and medical directors to discuss the integration of pharmacy services into their clinic. This meeting grew into the development of three different services to meet the clinic's needs. To complement

the expansion of pharmacy services at the clinic, a student's involvement with the college's service-learning program was incorporated.

Program Description

Patient Chart Review: Student pharmacists support care at the clinic by conducting chart reviews. Each review is completed following a multi-step method that includes 1) reviewing the patient's chart, 2) examining each disease state that the patient has, 3) ensuring that the medications taken for each disease state is adequate in terms of efficacy and safety, 4) monitoring labs, 5) presenting the patient and proposed recommendations to a pharmacy preceptor, and 6) making final written recommendations to the prescribers to optimize the patients' treatment plans. Students are often paired by pharmacy experience and knowledge to review a patient's chart together. Specifically, upperclassmen are paired with students who may not have had much experience or knowledge to be able to work up a patient.

Diabetes Day: Diabetes Day is a designated day, occurring on average twice a month, when the clinic provides a comprehensive exam and educational session for their patients with diabetes. These patients are referred by their physicians to attend Diabetes Day. This extended visit involves medication reconciliation by the pharmacy team, a foot exam by physician assistant or nurse practitioner students, primary care provider follow-up, and an educational session led by a nurse educator regarding healthy living and the importance of physical activity.

Involvement with the clinic's Diabetes Day expanded the role of the pharmacy team beyond written recommendations. Prior to a patient's appointments, the multi-step approach for reviewing a patient's chart is completed; however, instead of providing written recommendations, the student pharmacist's evaluation is presented to the medical team for approval following an in-person consultation with the patient (Figure 1).

Collaborative Practice Agreement: Insulin Dose Adjustment Service: Collaborative Drug Therapy Management (CDTM) was initiated following the development and implementation of a collaborative practice agreement between the clinic and the pharmacy volunteers to target patients who would benefit from close monitoring of their diabetes medications. In the state of Utah, CDTM allows for a pharmacist to directly manage elements of a patient's care plan as authorized by specified conditions in the collaborative practice agreement. The collaborative practice agreement signed by the clinic and the College of Pharmacy allows pharmacists to manage all aspects of patients' diabetes medication therapy in

collaboration with the clinic's medical director including initiating, discontinuing, or adjusting medications; making recommendations for therapeutic lifestyle changes (TLC); and ordering appropriate laboratory tests.

Patients are referred to pharmacy services through a collaborative practice referral from the medical director or attending physician. Upon enrollment in the service, a member of the pharmacy team meets with the patient face-to-face in order to educate the patient about his or her diabetes medications, instruct the patient on the proper use of insulin if applicable, observe glucometer technique, provide the patient with a schedule for checking his or her blood glucose, and provide basic diabetes education. Each week, a team of pharmacy students then contacts the patient over the phone or e-mail to obtain the latest blood glucose values. The pharmacy team will develop a plan, contact the preceptor for plan approval, and then contact the patient again with the approved plan. The pharmacy team then documents the phone follow-up and submits it to the preceptor to be signed and placed in the patient's chart (Figure 2).

Results

During the sixteen months since the initiation of pharmacy services at the clinic, the pharmacy team, has had approximately 200 face-to-face visits with patients and currently have ten patients enrolled in the insulin dose adjustment service. Preliminary data examining the impact of pharmacy services eight months into the College of Pharmacy's involvement with the clinic found that following the initiation of these services, the clinic saw a 34.9% increase in the ordering of the albumin/creatinine ratio level and an average 2.6% improvement in hemoglobin A1c values in the subset of patients (43 patients) being followed by the pharmacy team at that time.

A student position, the Maliheh Free Clinic Coordinator, was developed to support sustainability of pharmacy services. Duties of this position include organizing student involvement at the clinic and serving as the liaison between the clinic, the pharmacy preceptor, and students. In addition to the creation of this position, a handbook detailing the objectives of the services provided, tasks that should be completed, logistics behind completing these tasks, and resources that can be utilized was prepared.

Another key factor in the sustainability of this project is the willingness of students and faculty to continue to volunteer their time at the clinic. Therefore, the importance of emphasizing the benefits of the project for the community and for student learning must be maintained. This is achieved

through student recruitment by individuals who have had a positive experience at the clinic, monthly emails, and a luncheon focused on discussing the value that the Maliheh Free Clinic has in the community and at the College.

Discussion

Impact of Pharmacy Services on Patient-Centered Care: A patient population that is particularly vulnerable to the effects of diabetes and the lack of healthcare services is the underserved.³⁴⁻³⁷ Therefore, any resources that can be provided to this patient population is crucial to ensuring successful patient health outcomes. One strategy being used with greater frequency to improve patient outcomes is the integration of pharmacists into primary care services. The value of pharmacy services within an interprofessional team to help improve patient health outcomes cannot be understated.^{38, 39} Clinical pharmacy services have been shown to complement the activities of other healthcare professionals in managing chronic diseases, resolving drug-therapy problems, and helping educate patients regarding their disease states and medications.^{40, 41} Pharmacists have the ability to impact diabetes mellitus management and studies have shown improvements in A1c values when clinical pharmacy services are integrated into primary care.⁴²⁻⁴⁵

The implementation of a collaborative practice agreement with the Maliheh Free Clinic highlights the ability for CDTM to streamline care processes and support pharmacist integration into primary care.⁴²⁻⁴⁵ CDTM provides an opportunity for patients to work with another healthcare provider who has expertise in monitoring treatment regimens and can address patient issues or concerns in a timely manner. Pharmacists are able to focus on responsibilities and issues that physicians may not have the time to fully address with the patient. As such, a smoother transitions process is utilized to allow for continuity of care and accountability of outcomes. Patients benefit from this service because they have more one-on-one time to learn at their own pace and because they have an additional personal advocate who becomes invested in their care and outcomes. This shared responsibility between pharmacists and physicians in CDTM translates to more efficient and effective patient care that leads to better outcomes.

Team-based Approach to Health Care: Over the past five years, interprofessional education has been a large focus at the University of Utah Health Sciences Center. Students from the different health disciplines (medicine, nursing, pharmacy, and allied health professions) are placed in simulated patient care environments and taught strategies that allow them to work together to develop an appropriate plan. This interprofessional approach to patient care has translated

nicely to the Maliheh Free Clinic where student pharmacists work on a healthcare team with medicine, nursing, physician assistant, and nurse practitioner students to provide the best possible care for the clinic's patients. The students have gained an extremely valuable perspective in learning how pharmacy can actively contribute to the healthcare team. This is all accomplished while serving a medically underserved population.

Application of Pharmacy Skills: The initiation of pharmacy services at the Maliheh Free Clinic has had a tremendous impact on participating student pharmacists. Students are able to recognize the importance of pharmacy in a real life setting and they are able to obtain the necessary skills that will make them better future practitioners while enhancing their clinical practice abilities. In particular, these services provide an opportunity for experiential education emphasizing patient-centered practice and supporting student professional development. Students have the opportunity to practice at the top of what pharmacists are educated to do. Development of these services is aligned with the growing need to develop teaching health centers (THCs) and the increased financial support of these centers through recent healthcare reform. The services at the Maliheh Free Clinic can serve as a model for THCs elsewhere.

Students are also exposed to the importance of civic engagement, the impact of increasing healthcare costs, and the necessity of effective patient and provider communication. The service-learning component of these services enriches the learning experience and teaches the importance of promoting positive change through community involvement. By integrating classroom objectives with civic duty, students gain a greater appreciation for how they can utilize what they have learned to invoke change that has a lasting impact on improving patient outcomes. Students also gain a greater appreciation for healthcare affordability through the patient population served by the clinic. Although cost is not the only factor guiding therapy recommendations, it is one that has an enormous influence on patient adherence. In addition, students are exposed to the importance of both patient communication and provider communication. Students are able to practice communicating with patients and other healthcare professionals which allows them to gain different perspectives regarding treatment options and to learn how to collaborate with others.

Rotation of pharmacy residents as preceptors through the clinic's Diabetes Day serves as another example of the mentorship that is created by having student pharmacists work with one another and with other pharmacists. Students have the opportunity to interact with these residents and

gain new and different perspectives regarding needed skills to be successful in the profession of pharmacy. On the other hand, residents are exposed to what is involved in precepting and have the opportunity to develop their skills as a mentor.

Future Directions: Recognition of the value of pharmacy services within the Maliheh Free Clinic will drive future growth and continual improvement of the services provided. Expansion of clinical pharmacy services to engage more patients at this clinic site is a goal. Application of the model that has been developed at the Maliheh Free Clinic to other free clinics in the valley have the potential to impact more patients and involve more pharmacists, pharmacy residents, and pharmacy students. However, a great limitation in this area is finding pharmacy preceptors who are willing to volunteer their time to develop and maintain the service. A possible solution is to utilize clinical pharmacists outside of the college or perhaps have pharmacy residents rotate through the sites.

Conclusion

The development and implementation of clinical pharmacy services at this free health clinic models the potential for innovative pharmacy practice and student community engagement at other clinics that serve the underserved. This model highlights the mutually beneficial relationship between community free clinics and academic health centers. Services implemented at this clinic are aligned with recent consortium recommendations for advancing pharmacists' patient care services.⁴⁶ Specifically, the recommendations emphasized the necessity of "infrastructure that embeds pharmacists' patient care services and collaborative practice agreements into care" and the necessity of "relationships among the health care team that are strong, trusting, and mutually beneficial." The foundation of the pharmacy services established at the clinic provides for a representative approach to advancing pharmacy practice while promoting community outreach and engagement.

References

1. Denham AC, Hay SS, Steiner BD, Newton WP. Academic Health Centers and Community Health Centers Partnering to Build a System of Care for Vulnerable Patients: Lessons From Carolina Health Net. *Acad Med*. May 2013;88(5):638-643.
2. Chandler M. The rights of the medically uninsured: an analysis of social justice and disparate health outcomes. *J Health Soc Policy*. 2006;21(3):17-36.
3. Darnell J. What is the role of free clinics in the safety net? *Med Care*. Nov 2011;49(11):978-984.

4. Darnell JS. Free clinics in the United States: a nationwide survey. *Arch Intern Med.* Jun 14 2010;170(11):946-953.
5. Isaacs SL, Jellinek P. Is there a (volunteer) doctor in the house? Free clinics and volunteer physician referral networks in the United States. *Health Aff (Millwood).* May-Jun 2007;26(3):871-876.
6. Buettgens M, Hall M. Who will be uninsured after health insurance reform? (*Research Brief*). 2011. http://www.urban.org/health_policy/url.cfm?ID=1001520. Accessed August 10, 2013.
7. Felt-Lisk S, McHugh M, Howell E. Monitoring local safety-net providers: do they have adequate capacity? *Health Aff (Millwood).* Sep-Oct 2002;21(5):277-283.
8. Katz MH. Future of the safety net under health reform. *JAMA.* Aug 11 2010;304(6):679-680.
9. Eldakrouy A, Olivera E, Martin R, De Groot AS. Adherence to American Diabetes Association Guidelines in a Volunteer-run Free Clinic for the Uninsured: Better than Standards Achieved by Clinics for Insured Patients. *R I Med J (2013).* 2013;96(1):25-29.
10. Lynch CJ, Davis MA. The Ithaca Free Clinic: a multidisciplinary health services delivery model that includes complementary and alternative medicine practitioners. *Altern Ther Health Med.* Jan-Feb 2012;18(1):26-29.
11. Douangmala CS, Hayden SA, Young LE, Rho J, Schnepfer LL. Factors influencing healthcare utilization within a free community clinic. *J Immigr Minor Health.* Aug 2012;14(4):698-705.
12. Levine DM, Becker DM, Bone LR, Hill MN, Tuggle MB, 2nd, Zeger SL. Community-academic health center partnerships for underserved minority populations. One solution to a national crisis. *JAMA.* Jul 27 1994;272(4):309-311.
13. McCann E. Building a community-academic partnership to improve health outcomes in an underserved community. *Public Health Nurs.* Jan-Feb 2010;27(1):32-40.
14. Smego RA, Jr., Costante J. An academic health center-community partnership: the Morgantown Health Right free clinic. *Acad Med.* Jun 1996;71(6):613-621.
15. Maurana CA, Goldenberg K. A successful academic-community partnership to improve the public's health. *Acad Med.* May 1996;71(5):425-431.
16. Lesser J, Oscos-Sanchez MA. Community-academic research partnerships with vulnerable populations. *Annu Rev Nurs Res.* 2007;25:317-337.
17. Rebholz CM, Macomber MW, Althoff MD, et al. Integrated models of education and service involving community-based health care for underserved populations: Tulane student-run free clinics. *South Med J.* Mar 2013;106(3):217-223.
18. Corbie-Smith G, Adimora AA, Youmans S, et al. Project GRACE: a staged approach to development of a community-academic partnership to address HIV in rural African American communities. *Health Promot Pract.* Mar 2011;12(2):293-302.
19. Delgadillo AT, Grossman M, Santoyo-Olsson J, Gallegos-Jackson E, Kanaya AM, Stewart AL. Description of an academic community partnership lifestyle program for lower income minority adults at risk for diabetes. *Diabetes Educ.* Jul-Aug 2010;36(4):640-650.
20. Ward HJ, Morisky DE, Lees NB, Fong R. A clinic and community-based approach to hypertension control for an underserved minority population: design and methods. *Am J Hypertens.* Feb 2000;13(2):177-183.
21. Fancher TL, Keenan C, Meltvedt C, et al. An academic-community partnership to improve care for the underserved. *Acad Med.* Feb 2011;86(2):252-258.
22. Silberberg M, Yarnall KS, Johnson F, Sangvai D, Patel R, Yaggy SD. Neighborhood clinics: an academic medical center-community health center partnership. *J Health Care Poor Underserved.* Aug 2007;18(3):516-522.
23. Ryskina KL, Meah YS, Thomas DC. Quality of diabetes care at a student-run free clinic. *J Health Care Poor Underserved.* Nov 2009;20(4):969-981.
24. Liberman KM, Meah YS, Chow A, Tornheim J, Rolon O, Thomas DC. Quality of mental health care at a student-run clinic: care for the uninsured exceeds that of publicly and privately insured populations. *J Community Health.* Oct 2011;36(5):733-740.
25. Zucker J, Lee J, Khokhar M, Schroeder R, Keller S. Measuring and assessing preventive medicine services in a student-run free clinic. *J Health Care Poor Underserved.* Feb 2013;24(1):344-358.
26. Meyer D, Armstrong-Coben A, Batista M. How a community-based organization and an academic health center are creating an effective partnership for training and service. *Acad Med.* Apr 2005;80(4):327-333.
27. Rutkow L, Levin MB, Burke TA. Meeting local needs while developing public health practice skills: a model community-academic partnership. *J Public Health Manag Pract.* Sep-Oct 2009;15(5):425-431.

28. DeWitt DE, Curtis JR, Burke W. What influences career choices among graduates of a primary care training program? *J Gen Intern Med.* Apr 1998;13(4):257-261.
29. Haq C, Grosch M, Carufel-Wert D. Leadership Opportunities with Communities, the Medically Underserved, and Special Populations (LOCUS). *Acad Med.* Jul 2002;77(7):740.
30. Meah YS, Smith EL, Thomas DC. Student-run health clinic: novel arena to educate medical students on systems-based practice. *Mt Sinai J Med.* Aug 2009;76(4):344-356.
31. Berman R, Powe C, Carnevale J, et al. The crimson care collaborative: a student-faculty initiative to increase medical students' early exposure to primary care. *Acad Med.* May 2012;87(5):651-655.
32. Smith SD, Johnson ML, Rodriguez N, Moutier C, Beck E. Medical student perceptions of the educational value of a student-run free clinic. *Fam Med.* Oct 2012;44(9):646-649.
33. Albritton TA, Wagner PJ. Linking cultural competency and community service: a partnership between students, faculty, and the community. *Acad Med.* Jul 2002;77(7):738-739.
34. Ko J, Delafield R, Davis J, Mau MK. Characteristics of patients with type 2 diabetes mellitus in two rural, medically underserved communities. *Hawaii J Med Public Health.* Jun 2013;72(6):191-196.
35. Remler DK, Teresi JA, Weinstock RS, et al. Health care utilization and self-care behaviors of Medicare beneficiaries with diabetes: comparison of national and ethnically diverse underserved populations. *Popul Health Manag.* Feb 2011;14(1):11-20.
36. Philis-Tsimikas A, Walker C. Improved care for diabetes in underserved populations. *J Ambul Care Manage.* Jan 2001;24(1):39-43.
37. Baty PJ, Viviano SK, Schiller MR, Wendling AL. A systematic approach to diabetes mellitus care in underserved populations: improving care of minority and homeless persons. *Fam Med.* Oct 2010;42(9):623-627.
38. Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database Syst Rev.* 2009(3):CD000072.
39. Chisholm-Burns MA, Kim Lee J, Spivey CA, et al. US pharmacists' effect as team members on patient care: systematic review and meta-analyses. *Med Care.* Oct 2010;48(10):923-933.
40. Dent LA, Stratton TP, Cochran GA. Establishing an on-site pharmacy in a community health center to help indigent patients access medications and to improve care. *J Am Pharm Assoc (Wash).* May-Jun 2002;42(3):497-507.
41. Brahm NC, Palmer T, Williams T, Clancy G. Bedlam Community Health Clinic: a collaborative interdisciplinary health care service for the medically indigent. *J Am Pharm Assoc (2003).* May-Jun 2007;47(3):398-403.
42. Shane-McWhorter L, Oderda GM. Providing diabetes education and care to underserved patients in a collaborative practice at a utah community health center. *Pharmacotherapy.* Jan 2005;25(1):96-109.
43. Leal S, Soto M. Pharmacists disease state management through a collaborative practice model. *J Health Care Poor Underserved.* May 2005;16(2):220-224.
44. Leal S, Glover JJ, Herrier RN, Felix A. Improving quality of care in diabetes through a comprehensive pharmacist-based disease management program. *Diabetes Care.* Dec 2004;27(12):2983-2984.
45. Enfinger F, Campbell K, Taylor J. Collaboration with pharmacy services in a family practice for the medically underserved. *Pharmacy Practice.* 2009;7(4):248-253.
46. Consortium recommendations for advancing pharmacists' patient care services and collaborative practice agreements. *J Am Pharm Assoc (2003).* Mar-Apr 2013;53(2):e132-141.

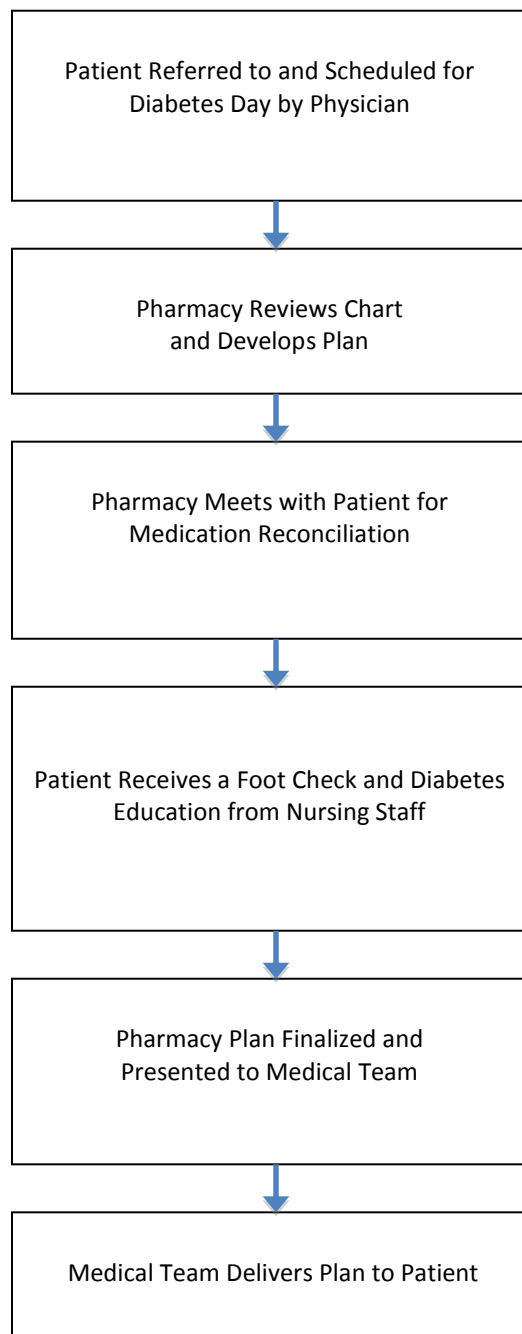
Figure 1. Diabetes Day Flow Chart

Figure 2. Diabetes Collaborative Drug Therapy Management (CDTM) Program Flow Chart