American Pharmacists Association Foundation
Project IMPACT: Diabetes
IMProving America’s Communities Together

PROJECT OVERVIEW

The American Pharmacists Association (APhA) Foundation expanded implementation of The Asheville Project, a promising approach promoting diabetes self-management through local pharmacists. The Asheville Project, a collaborative effort in Asheville, North Carolina, effectively improved A1c levels among participants, reduced health care costs and sick days, and improved patient satisfaction with pharmacist’s services. APhA Foundation’s Project IMPACT (Improving America’s Communities Together) used pharmacist-centered, interdisciplinary care that included intensive patient diabetes education, medication therapy management services, and accountability for healthy lifestyle changes. APhA Foundation’s Project IMPACT: Diabetes expanded this model nationally in order to test implementation on a larger scale.

Project IMPACT: Diabetes had four main objectives:

1. Expand a proven community-based model of care throughout geographic areas experiencing disproportionate need.
2. Improve key indicators of diabetes care in selected communities including clinical outcome measures such as hemoglobin A1c, systolic and diastolic blood pressures, LDL cholesterol, weight, and body mass index.
3. Bring the existing model to scale at the national level by establishing a local peer-to-peer network of mentoring where successful communities serve as peers to others to promote expansion.
4. Establish a sustainable platform for diabetes health improvement within each implementation community.

CONTEXT AND PARTNERS

Of the 25.8 million people or 8.3% in the United States affected by diabetes, African-Americans and Hispanics suffer disproportionately from the disease. Among those diagnosed, 3 million are not treated and as many as 9 million are not treated successfully. For these patients, traditional care is not adequate to mitigate the effects of diabetes. Lack of education about the effects of diabetes, a lack of support for diabetes self-management, and noncompliance with medication regimens are factors that limit disease management.

Pharmacists are among the nation’s most accessible health care providers; more of them are available than primary care providers in rural areas and those with health care provider shortages. This high accessibility makes the pharmacist a natural point of care among patients with diabetes. In addition recent policy changes permit pharmacists to provide a variety of practice interventions and serve as points of interdisciplinary, managed patient care (e.g., immunization authority in all 50 states, Medicare compensation for medication therapy management services).

Partner communities for Project IMPACT: Diabetes were selected based on community need. County data from the 2007 CDC Behavioral Risk Factor Surveillance System (BRFSS) for adults diagnosed with diabetes was used to
identify communities with disproportionately affected populations. Twenty-five partner communities were selected to integrate pharmacists into local health care teams that would implement the Project IMPACT: Diabetes care model. Organizations within the communities identified to serve as points of implementation included community and university-affiliated pharmacies, self-insured employers, Federally Qualified Health Centers, and free clinics. The 25 partner sites from 17 states that participated were:

- Appalachian College of Pharmacy, Oakwood, VA
- Ball’s Food Stores of Kansas City, Kansas City, KS
- Central Ohio Diabetes Association, Columbus, OH
- Centro de Salud Familiar La Fe, Inc., Pharmacy, El Paso, TX
- County of Santa Barbara Public Health Department, Santa Barbara, CA
- CrossOver Ministry Clinic, Inc., Richmond, VA
- Eau Claire Cooperative Health Centers, Columbia, SC
- Eu Claire Internal Medicine—Cooperative Health Pharmacy, Columbia, SC
- Fink’s Pharmacy, Essex, MD
- Jefferson County Department of Health, Birmingham, AL
- Kroger Pharmacy Cincinnati—Dayton Division, Cincinnati, OH
- Mountain States Health Alliance, Johnson City, TN
- Paramount Farms/California Health Collaborative, Lost Hills, CA
- Pascua Yaqui Reservation of the El Rio Health Center, Tuscon, AZ
- Price Chopper Pharmacy, Schenectady, NY
- The Daily Planet, Inc., Richmond, VA
- The Ohio State University College of Pharmacy, Columbus, OH
- The University of Mississippi, Jackson, MS
- Tuscon Urban Community of the El Rio Health Center, Tuscon, AZ
- University of Kentucky Research Foundation, Lexington, KY
- Variety Care, Oklahoma City, OK
- West Virginia Health Right, Inc., Charleston, WV
- Wichita Public Schools, USD 259, Wichita, KS
- Wingate University School of Pharmacy, Wingate, NC
- Zufall Health Center, Dover, NJ

The project served 1,738 different participants from the 25 partner sites during the project period (April 2011–March 2013). Each implementation site served a unique group of underserved patients that included uninsured, under-insured, homeless, those living below the poverty line, and those with higher prevalence of diabetes. The racial characteristics across the 25 project sites included: Caucasian (41.3%), African American (24.5%), Hispanic (21.4%), Native American (4.8%), Asian (0.8%), and Pacific Islander (0.6%).

Initial outreach recruitment efforts occurred through pharmacies and health care clinics participating in the federal 340B Drug Pricing Program. These entities predominately serve community residents experiencing economic hardship; those least likely to receive necessary medications otherwise.

**ASSESSMENT AND PLANNING**

Project IMPACT: Diabetes builds upon lessons learned through a number of prior initiatives that use pharmacies as gateways to health education and interdisciplinary care, including Project IMPACT: Hyperlipidemia and Project IMPACT: Osteoporosis, both of which produced positive outcomes. The Asheville Project demonstrated long-term improvements with clinical and economic outcomes in community pharmacy-based programs with patients with diabetes. The Patient Self-Management Program for Diabetes used the APhA Foundation’s process model for collaborative care to bring similar outcome improvements demonstrated in Asheville to five different employers.
The Diabetes Ten City Challenge successfully demonstrated that diabetes care can be scaled for multi-site community pharmacy-based diabetes care programs. Taken together, this body of prior work informed the planning, development, and implementation processes of Project IMPACT: Diabetes.

Project IMPACT: Diabetes consisted of four key phases and activities:

- Phase I—Project Planning and Preparation
- Phase II—Identifying Communities at Highest Risk
- Phase III—Engage Communities in Sustainable Implementation
- Phase IV—National Expansion

During Phase I, a number of supports were developed to prepare for project implementation. These included the creation of a National Project Partner Advisory Committee, development of a web-based project tool kit, adoption of a diabetes best practices knowledge base tool, and formation of the Technical Advisory Services group. The National Project Partner Advisory Committee’s primary role was to leverage existing resources to help support the local community initiatives. Partner advisory committee members included: American Pharmacists Association’s Academy of Student Pharmacists, Center for Health Value Innovation, Food and Drug Administration Office of Women’s Health, Innovative Focus, YMCA of Central Ohio, State Pharmacy Associations, National Diabetes Education Program, HRSA Office of Pharmacy Affairs, National Business Group on Health: Institute on Innovation in Workforce Well-Being, and a number of national local pharmacies (e.g., Wallgreens, CVS, Giant Food Stores, Kerr Drug, Rite Aid, Kroger, Ralph’s Pharmacies, and Duane Reade).

Resources developed during implementation of the previous Project IMPACT initiatives, the Diabetes Ten City Challenge, the Asheville Project, and the Patient Self-Management Program for Diabetes provided the basis for the development of the Web-Based Project IMPACT: Diabetes Tool Kit. The tool kit provided role-based resources to local stakeholders, such as local pharmacists, implementing the initiative within their respective communities. Similarly, an online knowledge base of best practices—drawn from quantitative and qualitative data gathered from previous initiatives—provided project guidance to the 25 partner sites. Lastly, a Technical Advisory Services group was formed to provide technical assistance to pharmacist community site coordinators who implemented the APhA Foundation collaborative care model.

In Phase II, candidate target/partner communities were identified using: a) CDC BRFSS data; b) clinic site electronic health records; and c) information from major employers and entities in the private and public sectors within selected candidate communities. Candidate communities were contacted and encouraged to apply for consideration for project inclusion. Communities were then selected through a competitive application process that asked participants to describe the project, including project need/goals, community collaborative management structure, strategy for adapting the Asheville/Diabetes Ten City Challenge model locally, assessment of the infrastructure, delivery of services, data collection/monitoring, quality improvement activities, and budget. Applicant communities that were chosen received seed grants of $25,000 to implement Project IMPACT: Diabetes within their local context.
During Phase III, Project IMPACT: Diabetes coordinators were assigned to each partner to work directly with pharmacist community site champions to implement components of the initiative. This includes establishing a Pharmacist Care Network, developing appropriate policies and procedures, identifying patient self-management tools, advising on site-level data collection, and maintaining routine communication. Site champions were given access to the web-based tool kit, and technical assistance was managed through the APhA Call Center. Site-level evaluations were performed at 6 and 12 months. Additionally, community sites reported patient clinical outcomes including hemoglobin A1c, systolic and diastolic blood pressure, LDL cholesterol, Body Mass Index (BMI), change in tobacco status, patient satisfaction, and economic analysis.

Implementation of pharmacist-centered collaborative care to reflect context differences varied across the 25 partner sites. At employer-based sites (e.g., Paramount Farms, Wichita Public Schools), employees received access to pharmacists contracted to provide Project IMPACT: Diabetes clinical and referral services. At health care clinic sites (e.g., Variety Care, Eau Claire Cooperative Health Centers), pharmacists delivered intervention components as part of a broader diabetes management patient care team. At pharmacy sites (e.g., Price Chopper Pharmacy, Kroger Pharmacy), patients received enhanced one-on-one consultation sessions with their pharmacist. At all sites, pharmacists delivered individualized education services, care, and referrals based on results from a patient diabetes care knowledge assessment.

The Project IMPACT: Diabetes intervention featured three main components: a) Pharmacist-centered collaborative care, b) Improved quality of patient care, and c) Improved access/linkage to care:

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<tr>
<th>INTERVENTION COMPONENTS</th>
<th>SPECIFIC ELEMENTS</th>
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| Pharmacist-centered collaborative care delivered on site through enhanced pharmacist consults | Patient knowledge assessment administered at baseline to inform appropriate level of diabetes self-management education, and medication therapy management. 
Medication therapy management consisting of medication therapy reviews, pharmacotherapy consults, and medication adherence aimed at optimizing the therapeutic outcomes of diabetes patients. 
Goal setting of healthcare goals with diabetes patients provides a basis for feedback during patient-pharmacist consulting sessions and a baseline for patient improvement. 
Referral into primary care by pharmacist. Pharmacists confer with physicians to align diabetes patients with primary care. |
<p>| Diabetes self-management education | Risk and prevention of diabetes complications through patient education on the importance of controlling the disease. |</p>
<table>
<thead>
<tr>
<th>Patient Incentives and Support</th>
<th>Diabetes self-management education to teach patients healthy lifestyle behaviors, monitoring blood glucose, and problem solving to control their disease.</th>
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<tr>
<td></td>
<td>Weight management education to teach patients the importance of maintaining a healthy weight to help control complications associated with diabetes.</td>
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<td>Nutrition education aimed at teaching patients the importance of managing diabetes through proper nutrition, including consulting with on-site dieticians.</td>
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<td>Physical activity education aimed at teaching patients the importance of managing diabetes by engaging in the adequate amount of physical activity.</td>
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<td>Improved Quality of Patient Care</td>
<td>Interdisciplinary health care teams consisting of pharmacists, nurse practitioners, physicians, and other specialists to provide individualized diabetes treatment.</td>
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<td>New practice of enhancing diabetes standard of care at clinic implementation sites.</td>
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<td>Improved Access/Linkage to Care</td>
<td>Clinical services, including measurement of HbA1c, BMI, blood pressure, and lipid profile.</td>
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<td>Free clinic services available to diabetes patients at free or reduced cost.</td>
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<td>Work site clinics and wellness programs provided employees with access to on-site treatment for diabetes screening and treatment without burden of taking days off.</td>
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<td>Some worksites provided insurance coverage to include immunizations for patients with diabetes.</td>
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<tr>
<td></td>
<td>Referral into primary care by pharmacist. Pharmacists confer with physicians to align diabetes patients with primary care.</td>
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EVALUATION RESULTS AND FINDINGS

Data on Project Implementation

This section presents data on two key aspects of project implementation: a) Community/system changes and b) Services delivered brought on by Project IMPACT: Diabetes. Evaluation results focus on community and system changes, implementation of services, and pre-post differences in clinical outcomes for patients.

Figure 1 below displays the unfolding of community/system changes implemented over time from a representative sample of five communities. (Note: In a cumulative chart, each new activity is added to all prior activities.) Examples of community/system changes include: implementation of pharmacist-led, diabetes collaborative care consults; training of pharmacy residents to deliver project core services; and integrating pharmacists into employer health care teams. The data show steady implementation of community/system changes to May 2012, with two marked accelerations in implementing new programs, policies, and practices. These changes in community/system changes were associated with the implementation of pharmacist-centered point of care services (June 2011) and the integration of pharmacists into multidisciplinary care teams (January 2012).
Figure 1: Community/System Changes over Time across a Representative Sample of APhA Foundation Implementation Sites
Community/system changes led to continuous provision of services. Figure 2 displays the unfolding of Project IMPACT: Diabetes core services delivered over time across all 25 communities. While there was some variation in service delivery at each of the sites, core elements included enhanced pharmacist consults, diabetes self-management education, and improved access/linkage to care.

Figure 2. Services provided over time by Project IMPACT: Diabetes across all 25 communities.

Data on Clinical Outcomes

Statistically significant improvements were seen for hemoglobin A1c levels, BMI, systolic blood pressure, HDL and LDL cholesterol levels, total cholesterol levels, and triglyceride levels. These were associated with increased service delivery and associated changes in community/systems changes and service delivery. Clinic practice changes of using multidisciplinary care teams, pharmacist-centered patient diabetes care, and improved access/linkage to diabetes clinical services set the occasion for improved clinical outcomes. Improvements were seen in both clinical measures including HbA1c, BMI, systolic blood pressure, HDL and LDL cholesterol levels, total cholesterol levels, and triglyceride levels (see Table 1); and behavioral measures including smoking status, number of people that received foot and eye exams, and the number of those that received influenza vaccinations.
Table 1 below summarizes the results for key patient participant clinical outcomes averaged across all sites (using pre- and post-intervention assessments with participating clients):

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<th>CLINICAL OUTCOME</th>
<th>RESULTS</th>
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<tr>
<td></td>
<td>Pre-assessment mean (SD)</td>
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<tr>
<td>Average HbA1c levels (n = 1735)</td>
<td>9.0% (2.0)</td>
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<tr>
<td>Average BMI (n = 1776)</td>
<td>35.1 kg/m² (8.1)</td>
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<tr>
<td>Average systolic blood pressure (n = 1782)</td>
<td>132.0 mmHg (18.6)</td>
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<tr>
<td>Average diastolic blood pressure (n = 1782)</td>
<td>78.8 mmHg (11.2)</td>
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<tr>
<td>Average HDL cholesterol (n = 1354)</td>
<td>43.6 mg/dL (14.6)</td>
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<tr>
<td>Average LDL cholesterol (n = 1281)</td>
<td>98.0 mg/dL (42.8)</td>
</tr>
<tr>
<td>Average total cholesterol (n = 1369)</td>
<td>178.9 mg/dL (49.1)</td>
</tr>
<tr>
<td>Average triglyceride (n = 1359)</td>
<td>207.5 mg/dL (187.8)</td>
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Figure 3. Hemoglobin A1c over Time.
Changes in behavioral measures include:

- 9.5% of people who were smokers at the start of project quit by the end
- 51.4% of people who did not have eye exams at the start of the project got them by the end of the project
- 71.4% of people who did not have foot exams at the start of the project got them by the end
- 41.6% of people who did not have flu shots at the start of the project got them by the end

**WHAT WE ARE LEARNING**

Systematic reflection on the results and meaning of this project by APhA Foundation staff helped to identify key restraining and facilitating factors.

Several *facilitating factors* appear to have contributed to the program’s success:

- Using pharmacists as point of care providers was useful and effective in increasing access to personalized diabetes treatment.
- Collecting a minimum dataset in all communities provided a wealth of information that helped show the efficacy of project implementation.
- Qualitative data collection and a video montage video stories at each site helped identify challenges and assets affecting underserved populations, detect lessons learned through program implementation, and highlight stories of success.

Several key *restraining factors* or challenges that make it more difficult to implement the program and achieve improvements in clinical outcomes with this population experiencing health disparities:

- Coordinating project implementation across 25 sites was time and resource intensive.
- Qualitative data obtained through video interviews might have been better utilized throughout project implementation.
- The effectiveness of incentives varied across different populations. Patients with insurance often responded positively to financial incentives for participation. Patients without insurance or who are underinsured respond best with free transportation to the clinic or more time with a health care provider.
MOVING FORWARD AND PLANS FOR SUSTAINABILITY

Table 2 outlines components of the program that were sustained and plans for implementation of Phase IV—National Expansion:

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<th>PROGRAM COMPONENTS TO BE SUSTAINED</th>
<th>SUSTAINABILITY TACTICS IMPLEMENTED</th>
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<tr>
<td>More than 80% of community and systems changes implemented through Project IMPACT: Diabetes were retained at the conclusion of the project. A majority of the community and systems changes documented included core services that included pharmacist-led, enhanced point of care clinical testing and education. These services included medication therapy management, nutrition education, physical activity education, and weight management.</td>
<td>Project IMPACT: Diabetes implementation partners generated $120,000 of in-kind resources as a direct result of the initiative. A variety of different tactics employed included negotiation for discounted rates on testing equipment, securing Americorps Vista volunteers, and donated salary support from pharmacy training programs.</td>
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<td>Continuous improvement of multidisciplinary team approach to treating patients with diabetes.</td>
<td>The implementation of a Community-to-Community Peer Support Program and access to an augmented online Knowledge Base for health care providers consistent with strategies for implementing national expansion of the program.</td>
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PROJECT PUBLICATIONS AND MATERIALS

Key findings from this project have been communicated through a variety of different methods. These include presentations, videos highlighting stories of success, and media coverage. Selected activities include:
- The La Fe Project IMPACT: Diabetes Team presented a poster at the El Paso Diabetes Association's "Faces of Diabetes" conference on October 7, 2011.
- "University of Mississippi School of Pharmacy Update," Mississippi Pharmacists Association Mid-Winter Meeting, Oxford, Mississippi, February 24, 2013.
- "Community-Based Research Program Research Opportunities,” University of Mississippi School of Pharmacy Research Day, Oxford, Mississippi, November 8, 2012.
- More than 10 articles and press releases highlighting the work of implementation partners in their respective communities, as well as a host of webinars and video projects.
PROJECT CONTACT INFORMATION

Ben Bluml, RPh, Vice President, Research
American Pharmacists Association Foundation
Email: bbluml@aphanet.org
Phone: 816-969-7071

EVALUATION CONTACT INFORMATION

This case study was prepared by the Work Group for Community Health and Development team (Charles E. Sepers, Jr., Jenna Hunter-Skidmore, and Ithar Hassaballa) at the University of Kansas http://communityhealth.ku.edu, in collaboration with the American Pharmacists Association Foundation, and as part of the evaluation of the BMSF’s Together on Diabetes Program.

Jerry Schultz, Co-Director
Work Group for Community Health and Development, University of Kansas
Email: jschultz@ku.edu
Phone: 785-864-0533

Jenna Hunter-Skidmore, Together on Diabetes Evaluation Coordinator
Work Group for Community Health and Development, University of Kansas
Email: jmhunter@ku.edu
Phone: 785-864-0533