



Increasing Physician Screening,  
Testing, and Referral of Patients with  
Prediabetes to the National DPP Lifestyle  
Change Program -

## A CASE STUDY ON CLINICAL IMPLEMENTATION



American College of Preventive Medicine  
physicians dedicated to prevention

The views expressed in this presentation are the authors' and do not reflect the official policy or position of the Centers for Disease Control and Prevention or the U.S. government.

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# Acknowledgements

## About the Centers for Disease Control and Prevention (CDC), Division of Diabetes Translation

The [CDC Division of Diabetes Translation](#) (DDT) works to reduce the preventable burden of diabetes through public health leadership, partnership, research, programs, and policies that translate science into practice.

Strategic goals focus on:

- Preventing type 2 diabetes;
- Preventing complications, disabilities, and burden associated with diabetes; and
- Eliminating diabetes-related health disparities.

## About the American College of Preventive Medicine

The [American College of Preventive Medicine \(ACPM\)](#) is a professional medical society of more than 2,700 preventive medicine and public health physicians who manage, research, and influence population health. Preventive medicine physicians are employed in a wide range of sectors and settings, and ACPM Fellows are sought after leaders in local, national, and international health sectors. To these specialists, ACPM provides a dynamic forum for the exchange of knowledge and offers high-quality [educational programs](#) as well as [professional development](#) resources and networking opportunities.

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# Executive Summary

Prediabetes and Type 2 diabetes are serious health concerns that affect a large portion of the United States population. The American College of Preventive Medicine (ACPM) in 2016 undertook a two- year project to raise awareness of these conditions and develop protocols for screening, testing, and referring patients with prediabetes to CDC-recognized organizations offering the National Diabetes Prevention Program (National DPP) lifestyle change program.

In the two-year project, ACPM oversaw nine demonstration projects to help clinics and health care organizations interested in developing and implementing prediabetes screening, testing, and referral models.

This case study reviews the approaches, barriers, scalability plans, and related lessons learned of three of these health care organizations:

- Northeast Missouri Health Center – Kirksville, Missouri (FQHC)
- Accent on Health – Washington, DC (IPA)
- Griffin Faculty Associates – Derby, Connecticut (IPA)

The focus of the project was to increase physicians'/health care professionals' awareness of prediabetes as a serious health condition; develop and implement protocols for screening, testing, and referring patients with prediabetes to a CDC-recognized organization offering the National DPP lifestyle change program; and increase the number of physicians/health care professionals taking action to screen, test, and refer patients with prediabetes to CDC-recognized organizations (organizations with pending, preliminary, or full recognition).

Promising practices identified in the case study speak to the similarities in health care delivery despite variations in geographic location, patient populations, or insurance coverage.

This case study is a resource that will help clinics and health care organizations interested in improving or developing and implementing prediabetes screening, testing, and referral models.







Key areas for lessons learned were organized by:

- Provider Concerns
- Delays
- Communication / Awareness
- Technology
- Processes / Workflow

Key takeaways:

- Type 2 diabetes risk assessments should be incorporated into standard, easily repeatable workflow procedures for providers and staff. Once that workflow is established and implemented, it should become routine, much like taking a patient's weight or blood pressure.
- Adding another step to an established practice workflow can take physicians/providers time to revise the workflow.
- Communication and education for patients and providers alike is critical to success. Systems, processes, and technology can be put to coordinated use to overcome some of these challenges. Education can come in the form of automated technology, email and/or other digital platforms, and training.
- Using technology to conduct quality assurance reviews of data, and minimizing delays by using bulk messaging functions within an EHR, are additional ways to improve the process for providers and patients.

This case study shows clear benefits of a coordinated approach to developing and implementing prediabetes screening, testing, and referral models. Identifying key points of contact for patients and providers helps facilitate buy-in across the full spectrum of patient care.

# The National Diabetes Prevention Program:

The CDC-led [National Diabetes Prevention Program](#) (National DPP) is a partnership of public and private organizations working together to build a nationwide delivery system for a lifestyle change program proven to prevent or delay onset of type 2 diabetes in adults with prediabetes.

The National DPP provides a framework for type 2 diabetes prevention efforts in the U.S. founded on four key pillars: 1) a trained workforce of lifestyle coaches; 2) national quality standards supported by the CDC Diabetes Prevention Recognition Program; 3) a network of program delivery organizations sustained through coverage; and 4) participant uptake and referral.<sup>1</sup> These pillars link closely to the CDC's strategic goals for the National DPP: increase the supply of quality programs; increase demand for the program among people at risk; increase referrals from health care providers; and increase coverage among public and private payers.<sup>1</sup>

A key component of the National DPP is a structured, evidence-based, year-long lifestyle change program to prevent or delay onset of type 2 diabetes in adults with prediabetes or at risk of developing type 2 diabetes.<sup>1</sup>

[The National DPP lifestyle change program](#) is founded on the science of the [Diabetes Prevention Program research study](#), and subsequent translation studies, which showed that making realistic behavior changes helped people with prediabetes lose 5% to 7% of their body weight and reduce their risk of developing type 2 diabetes by 58% (71% for people over 60 years old).<sup>1</sup> The groundbreaking DPP study enrolled 3,324 overweight participants with elevated fasting and post-load plasma glucose concentrations. Participants were randomly assigned to three groups in the study: lifestyle, metformin, and placebo. The primary outcome measure was development of type 2 diabetes, diagnosed on the basis of an annual oral glucose-tolerance test or a semiannual fasting plasma glucose test.<sup>1</sup> Results showed that both lifestyle change and treatment with metformin reduced the incidence of type 2 diabetes in persons at high risk compared with a placebo, but the lifestyle intervention proved more effective than metformin

in preventing the onset of type 2 diabetes (Diagram 1).<sup>1</sup> The DPP's results also indicated that millions of high-risk adults can prevent or delay onset of type 2 diabetes by losing weight through a structured lifestyle intervention emphasizing regular physical activity and a diet low in fat and calories. After 15 years of study, participants in the lifestyle intervention group continue to have a 27% reduced risk of developing type 2 diabetes compared to an 18% reduced risk in the metformin group.<sup>2</sup>

<sup>1</sup> National Institutes of Health. Diabetes Prevention Program Fact Sheet. Retrieved from: <https://www.niddk.nih.gov/about-niddk/research-areas/diabetes/diabetes-prevention-program-dpp>

<sup>2</sup> Long-term effects of lifestyle intervention or metformin on diabetes development and microvascular complications over 15-year follow-up: the Diabetes Prevention Program Outcomes Study. Retrieved from: [https://www.thelancet.com/journals/landia/article/PIIS2213-8587\(15\)00291-0/fulltext](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(15)00291-0/fulltext)

# The National Diabetes Prevention Program:

The program is group-based, facilitated by a trained lifestyle coach, and uses a CDC-approved curriculum. The curriculum supports regular interaction between the lifestyle coach and participants; builds peer support; and focuses on behavior modification through healthy eating, increasing physical activity, and managing stress. The program may be delivered in-person, online, via distance learning, or through a combination of these delivery modes and consists of:

- An initial six-month phase offering a minimum of 16 sessions over 16 to 24 weeks.
- A second six-month phase offering a minimum of one session a month (at least six sessions).
- Facilitation by a trained lifestyle coach.
- A CDC-approved curriculum.
- Regular opportunities for direct interaction between the lifestyle coach and participants.
- A focus on behavior modification through healthy eating, increasing physical activity, managing stress, and peer support.







[CDC's Diabetes Prevention Recognition Program \(DPRP\)](#) is the quality assurance arm of the National DPP. Through the DPRP, CDC awards recognition to program delivery organizations that meet national standards and achieve the outcomes proven to prevent or delay onset of type 2 diabetes.

As of July 2018, there were more than 1,700 in-person and virtual organizations in the DPRP registry that had enrolled more than 230,000 participants. Coverage for the National DPP lifestyle change program as a health benefit is expanding.<sup>3</sup> As of July 2018, over 3.4 million public employees and dependents in 19 states had the National DPP lifestyle change program as a covered benefit, and more than 100 employers and insurers were covering the program in various markets.<sup>4</sup>

On November 2, 2017, the [Centers for Medicare & Medicaid Services \(CMS\)](#) issued the 2018 [Physician Fee Schedule \(PFS\)](#) final rule, which finalized policies to implement the [Medicare Diabetes Prevention Program \(MDPP\) expanded model](#), which took effect on April 1, 2018.<sup>4</sup> The MDPP expanded model allows Medicare beneficiaries with prediabetes to access the National DPP lifestyle change program as a covered service. An MDPP supplier is an organization that is enrolled in Medicare and can bill for MDPP services provided to eligible beneficiaries.<sup>5</sup> In order to apply to become an MDPP supplier, an organization must have preliminary or full recognition from CDC's DPRP.

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<sup>3</sup>Increasing Coverage for the National DPP through Public and Private Employers, Commercial Health Plans, and Medicaid. Retrieved from: <https://www.cdc.gov/diabetes/programs/stateandlocal/resources/increasing-coverage.html>

<sup>4</sup>Centers for Medicare & Medicaid Services. Fact Sheet: Final Policies for the Medicare Diabetes Prevention Program Expanded Model in the Calendar Year 2018 Physician Fee Schedule Final Rule. Retrieved from: <https://innovation.cms.gov/Files/fact-sheet/mdpp-cy2018fr-fs.pdf>

<sup>5</sup>Medicare Diabetes Prevention Program (MDPP): MDPP Supplier Road Map. Retrieved from: [https://innovation.cms.gov/Files/x/mdpp-orientation\\_roadmap.pdf](https://innovation.cms.gov/Files/x/mdpp-orientation_roadmap.pdf)

*Diagram 2. Requirements to Start MDPP Services*

**To start MDPP services, beneficiaries must have:**

- Medicare Part B coverage through Medicare Fee-for-Service or a Medicare Advantage (MA) Plan.
- Results from one of three **blood tests** conducted within one year before the first core session:
  - Hemoglobin A1C: 5.7--6.4% or
  - Fasting plasma glucose: 110--125 mg/dL or
  - Oral glucose tolerance test with a value of 140--199 mg/dl
- Body Mass Index (BMI) of at least 25, or at least 23 if self-identified as Asian
- No history of type 1 or 2 diabetes, with the exception of gestational diabetes
- No End Stage Renal Disease (ESRD)
- Not received MDPP services previously

Source: <https://innovation.cms.gov/initiatives/medicare-diabetes-prevention-program/>) and the MDPP overview factsheet ([https://innovation.cms.gov/Files/x/MDPP\\_Overview\\_Fact\\_Sheet.pdf](https://innovation.cms.gov/Files/x/MDPP_Overview_Fact_Sheet.pdf))

## The American College of Preventive Medicine Demonstration Projects

In fall 2016, The American College of Preventive Medicine (ACPM) was funded by the CDC Division of Diabetes Translation to increase screening, testing, and referral of people with prediabetes to organizations offering the National DPP lifestyle change program and participating in the CDC Diabetes Prevention Recognition Program (CDC-recognized organizations).

For two years, ACPM oversaw nine demonstration projects for health care organizations/practices with the goals of:

1. Increasing physicians'/health care professionals' awareness of prediabetes as a serious health condition.
2. Developing and implementing protocols for screening, testing, and referring patients with prediabetes to a CDC-recognized organization, either through the EHR or by using another non- electronic approach.
3. Increasing the number of physicians/health care professionals taking action to screen, test, and refer patients with prediabetes to CDC-recognized organizations (organizations with pending, preliminary, or full recognition).

## Criteria for Screening and Testing:

- Be at least 18 years old and
- Be overweight (body mass index  $\geq 25$ ;  $\geq 23$  if Asian) and
- Have no previous diagnosis of type 1 or type 2 diabetes and
- Have a blood test result in the prediabetes range within the past year:
  - Hemoglobin A1C: 5.7--6.4% or
  - Fasting plasma glucose: 100--125 mg/dL or
  - Two-hour plasma glucose (after a 75 gm glucose load): 140--199 mg/dL or
- Be previously diagnosed with gestational diabetes

Prediabetes can be diagnosed via a fasting plasma glucose, an oral glucose tolerance test, or an A1C test. Blood-based testing is the most accurate way to determine if a patient has prediabetes.

Source: [National Diabetes Prevention Program, CDC](#)



Via a competitive Request for Proposal (RFP) process, ACPM elected to fund organizations that represented a variety of clinical practice settings, as each setting was likely to be unique in the types of strategies and resources needed to establish a scalable referral model. Provider groups were selected from each of the three categories listed below, and each provider group received \$15,000 to develop scalable models for screening, testing, and referral. Award recipients worked with ACPM to document their experiences and lessons learned as case studies to inform and teach others. The grantees were selected from the following health care settings:

**Community Health Centers or Federally Qualified Health Centers (FQHC); FQHC Look-Alikes; Rural Health Clinics; Free and Charitable Clinics:**

- **FQHC:** Any provider working in a Federally Qualified Health Center, as designated by the Health Resources and Services Administration (HRSA), was eligible to apply for the grant. This included health centers that serve homeless patients, farm worker patients, public housing patients, and veteran patients.
- **FQHC Look-Alike:** Any provider working in a FQHC Look-Alike, as designated by HRSA, was eligible to apply for the grant.
- **Rural Health Clinic:** Any provider working in a Rural Health Clinic (RHC), as designated HRSA, was eligible to apply for the grant.
- **Free and Charitable Clinics:** These are health clinics located across the country that do not receive any federal funds that are given to FQHCs and RHCs. They also receive little to no state funds. Any provider who volunteered a significant portion of his/her time (at least two days a week) at a free or charitable clinic was eligible to apply.
- **Independent Physician Associations (IPA) and Medical Groups:** Any provider in an IPA pursuing opportunities such as contracts with employers, accountablecare organizations (ACO), or managed care organizations (MCO) was encouraged to apply. Physicians in medical groups also engaged in patient-centered medical homes (PCMH) were encouraged to apply.
- **Integrated Delivery System (IDS):** Any provider working in an integrated delivery system (IDS) that is vertically and horizontally aligned to provide a continuum of care to a specific geographic area in need was eligible to apply. Any provider within an IDS that functions as an ACO was also eligible to apply.



**During the initial year of the demonstration project, ACPM selected three organizations\*:**

- Emory Healthcare System – Atlanta, GA (IDS)
- Wheat Ridge Internal Medicine – Wheat Ridge, CO (IPA)
- AltaMed Health Services – Los Angeles, CA (FQHC)

\*For more information on these organizations, see ACPM’s Year 1 National DPP demonstration project case study [“Increasing Physician Screening, Testing, and Referral of Patients with Prediabetes to the National Diabetes Prevention Program Lifestyle Change Program.”](#)

**During the second year of the demonstration project, ACPM selected six organizations:**

- Northeast Missouri Health Center – Kirksville, Missouri (FQHC)
- Christopher Rural Health Corporation – Christopher, Illinois (FQHC)
- MaineHealth – Portland, Maine (IDS)
- South Nassau Community Hospital – Oceanside, New York (IDS)
- Griffin Faculty Associates – Derby, Connecticut (IPA)
- Accent on Health – Washington, DC (IPA)

**This case study reviews the approaches, barriers, and scalability plans of three of these health care organizations:**

- Northeast Missouri Health Center – Kirksville, Missouri (FQHC)
- Accent on Health – Washington, DC (IPA)
- Griffin Faculty Associates – Derby, Connecticut (IPA)



## CASE STUDY 1

# Federally Qualified Health Center: Northeast Missouri Health Council

Northeast Missouri Health Council (NMHC) is a Federally Qualified Health Center that has been providing services since 1968. In 2016, NMHC provided services to 19,499 residents through four family health clinics, an OB/GYN clinic, a pediatric clinic, a Veterans Administration community-based outpatient clinic, and three dental clinics. NMHC provides a sliding fee scale for the uninsured/underinsured and accepts traditional Medicaid, Medicaid Managed Care, Medicare, and private insurance. NMHC's service area includes 11 counties in northeast Missouri, all of which are Health Professional Shortage Areas. According to the U.S. Census, over 40% of the population in the service area is living in households with incomes below the federal poverty level. In addition, the percentage of adults in the service area who are obese (Body Mass Index greater than 30) is 32.4%, compared to 30.3% in Missouri and 27.1% in the United States. Residents in the 11-county area were diagnosed with diabetes at a rate of 11.6 per 100,000, also exceeding the national benchmark of 8 per 100,000.<sup>6</sup>

## Pre-Demonstration Project Approach

Prior to the demonstration project, NMHC applied to the CDC Diabetes Prevention Recognition Program and received pending recognition for its National DPP lifestyle change program. NMHC developed staff workflows for both clinic visits and phone calls to support and educate patients with prediabetes about type 2 diabetes prevention and the lifestyle change program.

NMHC Health Information Systems staff completed retroactive screening using the EHR to identify 631 patients who were at risk of developing type 2 diabetes and eligible for the program. Based on this data, NMHC then extracted patients who were seen by providers at the Northeast Family Health Clinic located in Kirksville, Missouri, to create a prediabetes registry specifically for this clinic.

<sup>6</sup> NMHC Demonstration Project 2018 Midterm Report.



## Demonstration

- Utilizing existing National DPP marketing, patient awareness, and screening and referral resources from the CDC and organizations such as the American Medical Association ([Prevent Diabetes STAT Toolkit](#)).
- Organizing and implementing a communication/marketing strategy to increase awareness of the program, including education and screening of patients and other community members and education for providers and clinic staff.
- Developing a standard model for identification of a target population via retroactive screening of the clinic population every six months.

Each of these approaches is described below.

## Developing Awareness: Education and Screening of Patients and Community Members

**NMHC utilized a variety of resources to promote the availability of screening and referral to the program including:**

- Electronic billboard with a prediabetes awareness message.
- Promotion of the program at local festivals and other community events. The “Community Roots Festival” yielded approximately 1,500 paper-based screening forms completed by Northeast Missouri residents who were then provided information on the National DPP lifestyle change program.
- Meetings held at the clinic in partnership with the Adair County YMCA to provide blood pressure and weight screenings for approximately 40-50 people each month. Information such as the [CDC Prediabetes Risk Test](#) was distributed to participants.
- Meetings held monthly at the clinic for patients and community members wanting to learn more about the program (Session Zero Information Overview).
- Posters hung in clinic exam rooms (Promoting Prediabetes Awareness to your Patients -provided by the Missouri Department of Health).

- A one-page flyer for the 65 years of age and older population that focused on the 71% type 2 diabetes risk reduction seen in those who completed the original DPP research trial, and the costs associated with type 2 diabetes (Prediabetes Is a Big Deal).
- Information mailed to patients to assist with self-referrals (CDC Prediabetes Risk Test and program/referral information).
- Paper screening incorporated into the workflow at the clinic to assist with referrals (*CDC Prediabetes Risk Test* and program/referral information).

## Developing Awareness: Education for Providers and Clinic Staff

**NMHC used the following activities to increase provider and clinic staff screening and program referrals:**

- The NMHC Diabetes Education Quality Coordinator provided an overview of the National DPP lifestyle change program, outcomes of the DPP research trial, and prevalence of prediabetes in Missouri and the NMHC service area at monthly NMHC provider and staff meetings and at the Northeast Missouri Health Council Bi-Annual Quality Improvement meeting.
- During monthly provider and staff meetings, NMHC staff (the Diabetes Education Quality Coordinator and the Referral Coordinator) reviewed instructions for use of the paper-based risk assessment, laboratory values for the diagnosis of prediabetes, updates on the number of program referrals and enrollees, and aggregate data on participant outcomes.
- NMHC providers took part in monthly and then bimonthly meetings to assist in developing the workflow for identifying and referring patients.
- NMHC staff (the Diabetes Education Quality Coordinator and the Referral Coordinator) provided feedback to providers on their individual patients via the EHR regarding referrals, enrollment, and progress in the lifestyle change program.





## Patient Identification

NMHC used the [Prevent Diabetes STAT Toolkit algorithm](#) to retroactively screen their patient population for patients eligible to participate in the National DPP lifestyle change program. Health Information Systems staff completed an EHR report based on the following inclusion criteria:

- Patients age  $\geq 18$  years.
- BMI  $\geq 25$  kg/m<sup>2</sup>; AND positive result for any of the following: HbA1c 5.7 – 6.4% (LOINC code 1558-6) or FPG 100-125 mg/dL or history of gestational diabetes (ICD – 10: Z86.32).
- Exclusion criteria: Current diagnosis of diabetes or current use of insulin.

NMHC mailed letters and supporting information to all patients who qualified based on the retroactive algorithm. Due to the high volume of referral letters being sent, the clinic did not create the letters as part of the EHR. NMHC personalized the letters using Microsoft software and an Excel report. The letter addressed the patient's risk of developing type 2 diabetes and the provider's recommendation to enroll in the National DPP lifestyle change program. A copy of the CDC Prediabetes Screening Test was mailed with the letter.

NMHC sorted the report of all qualifying patients by provider, giving each provider a list of his/her patients who were determined to be at risk. Subsequently, each provider identified those patients at highest risk of developing type 2 diabetes who had exhibited readiness to commit to the program. These patients received a phone call to follow up on the letter that had been previously mailed. Three weeks after mailing the letter, if the NMHC Diabetes Prevention Program had not heard from the patient, the coordinating nurse working with the program followed up one time via phone. The nurse entered the prediabetes risk screener score into the EHR and created an EHR referral if the patient agreed to participate in the program.

NMHC also identified additional qualifying community members among women who were already participating in other health education programs, including the [Show Me Healthy Woman](#) and the [WISEWOMAN](#) program. The Missouri Department of Health and Human Services WISEWOMAN program directors agreed to reimburse NMHC for the cost of WISEWOMAN participants who qualified for participation in the National DPP lifestyle change program. The WISEWOMAN program requires that the participant have a BMI of 25 or greater and not have a diagnosis of type 1 or type 2 diabetes. A letter was sent to all WISEWOMEN participants who qualified, and nursing staff also referred WISEWOMEN participants with a BMI  $\geq 25$  to the program.



Altogether, 1,076 patients were identified for outreach utilizing the retrospective query process (1,033) and from the WISEWOMAN program (43). Information was mailed to all identified individuals, including the CDC Prediabetes Risk Test, Session Zero Information Overview, and “Prediabetes is a Big Deal” handout and program/referral information. The 1,076 patients were broken down into lists separated by primary care provider, dietitian, or OB/GYN. Providers then selected 93 patients to receive follow up by phone. As a result of the mailer or telephonic follow up, 60 patients completed the CDC Prediabetes Risk Test and indicated interest in attending a Session Zero class or receiving additional information about the program (Table 1).

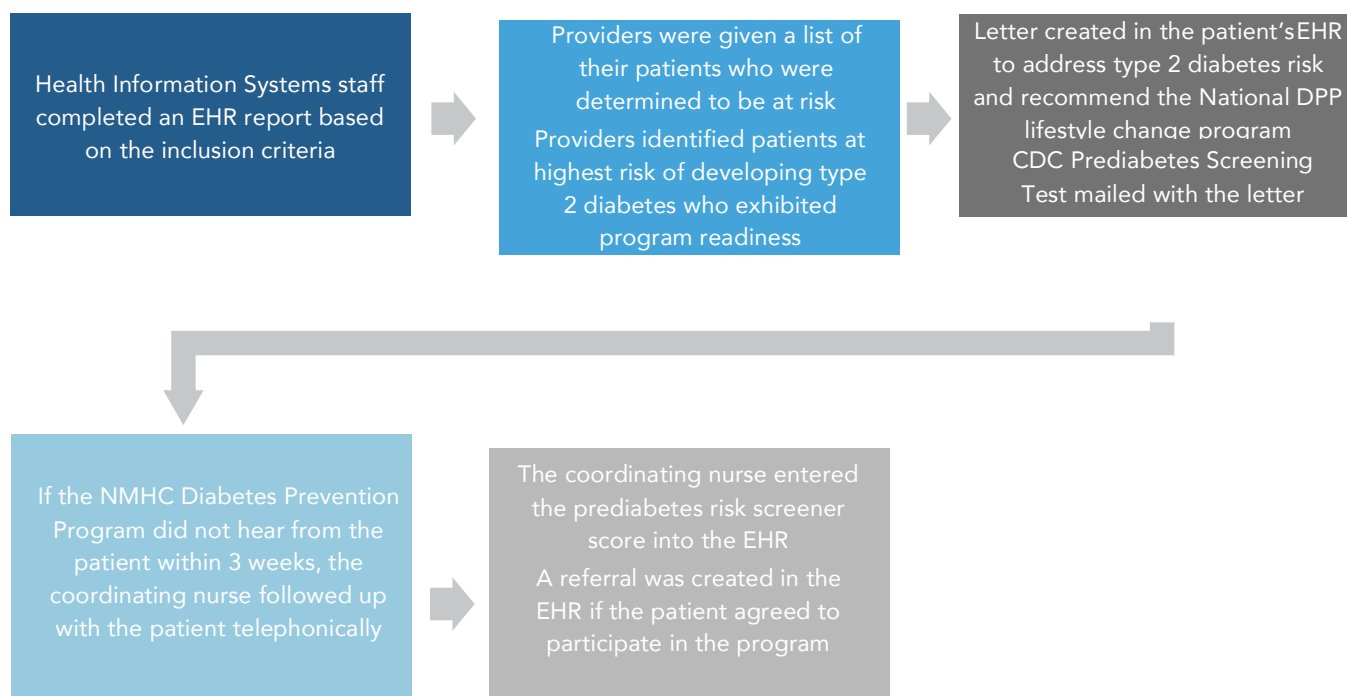
*Table 1. Patient Referrals and Enrollment*

Referral Primary Category	Number Referred	Number Enrolled
EHR Query: Patient contacted by phone to enroll	93	14
Point of care screening: Referred by provider; NMHC Diabetes Prevention Program employees completed final enrollment	52	20
Point of care screening: Patient received a warm hand-off to the NMHC Diabetes Prevention Program	21 of the 52 total electronic referrals	13/20 enrolled patients
Patients referred friends/family	5	TBD

## Point of Care Model

Referrals were also initialized at the point of care. The workflow was developed by the steering committee through monthly or bimonthly face-to-face and teleconference meetings, and through email follow-up. The point of care STAT-Toolkit guidelines and [the American Association of Clinical Endocrinologist /American College of Endocrinology Comprehensive Type 2 Diabetes Management Algorithm](#) were used as original sources to educate the steering committee and develop the workflow for identifying, screening, and referring patients. A workflow was developed to determine which patients would receive the CDC Prediabetes Screening Test as seen in Diagram 4.

Diagram 4. NMHC Screening and Referral Workflow



## Successes, Challenges, and Lessons Learned

The demonstration project provided the opportunity to increase prediabetes awareness across NMHC locations by providing training for health care providers and staff. The trainings provided opportunities for nurses and staff to ask questions about the risk factors contributing to the development of type 2 diabetes and increased their ability to identify and refer patients to the NMHC Diabetes Prevention Program. NMHC hoped to increase the number of patients who enrolled in the program by warm hand-off referral by 50%. Of the 52 electronic referrals completed, 21 received a warm hand off, thereby meeting the goal.

### There were challenges encountered with providers during the project including:

- Primary care providers in an FQHC setting monitor and address many items at the patient appointment. Thus, type 2 diabetes risk assessment may not be the highest concern for the patient or provider.
- It takes the provider time to add a new screening or program information to their workflow in the already limited time of a typical clinic appointment. To address this barrier, workflows were developed to allow other staff members to assist in identifying patients for referral and communicating this information to the providers.

## Scalability and Next Steps

At the end of the project, the piloted workflow will be integrated into the practice of all primary care providers' at all four family health clinics and the OB/GYN specialty clinic. Bimonthly meetings will continue to address the barriers to prediabetes screening, testing, and referral at each clinic site or with individual providers.





## CASE STUDY 2

# Independent Practice Association: Accent on Health

Accent on Health (Accent) is a small independent practice in Washington, D.C., comprised of one physician, one physician assistant, one office manager, and three medical assistants. Its patient population is 94% African American adults over the age of 20. The majority of patients are women (61%), and a large majority of patients are overweight with more than one health condition (80%). Approximately 35% of patients seen at the clinic have a diagnosis of diabetes. In addition, it is estimated that an additional 50% have prediabetes.

## Pre-Demonstration Project Approach

Prior to the demonstration project, Accent screened for prediabetes at annual wellness visits, with hemoglobin HbA1c testing completed at the providers' discretion. Providers also counseled patients within the practice setting.

## Demonstration Project

**Accent designed its demonstration project to focus on:**

- Developing a robust in-clinic awareness and promotion model (for providers and patients) by customizing forms and materials to meet the needs of the clinic and patient population.
- Conducting a retroactive review of EHR data every six months to identify patients with prediabetes and refer them to a CDC-recognized organization, the Flexcare Pharmacy Diabetes Prevention Program, which was fully funded by the local department of health.
- Developing a workflow for patient counseling and referral.
- Working within existing EHR systems (Fox Meadows EHR) to streamline a referral model.



## Developing Awareness

Accent implemented the following steps to increase awareness of prediabetes and the importance of screening within the practice setting:

- Patient posters were placed in the waiting area, exam rooms, breakroom, and provider offices.
- The [ADA Type 2 Diabetes Risk Test](#) was placed in the waiting area.
- Patients and caregivers were encouraged daily to participate in the screening process as part of the check-in and check-out process.

Efforts to keep providers engaged included monthly lunch meetings to:

- Evaluate program success and challenges.
- Discuss long-term sustainability of the effort.
- Discuss benefits of the program relevant to improving patient health outcomes and meeting MACRA goals.

## Patient Identification

Patients at risk were identified through a retrospective EHR query utilizing the algorithm in the Prevent Diabetes STAT Toolkit and EHR alerts in the system and at the point of care (see Diagrams 5 and 6).

## Retrospective Query

All patients identified through the retrospective EHR query as having prediabetes were notified via regular mail. The letters contained general information about the National DPP lifestyle change program, its benefits, and a number to contact for class information.

## Point of Care

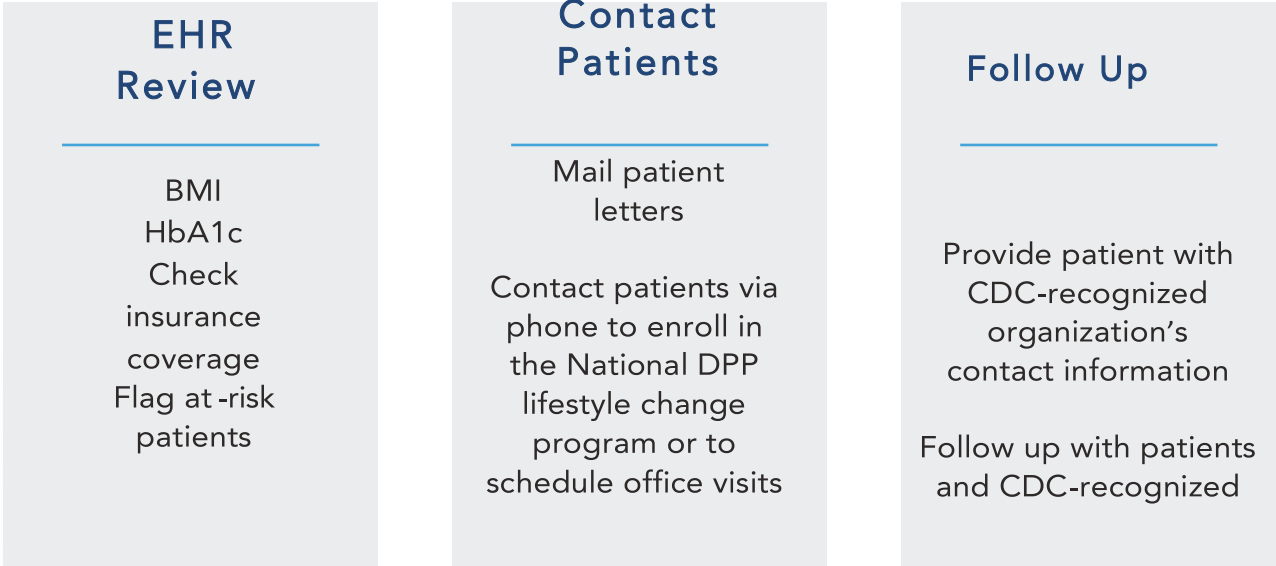
Patients were given the ADA Type 2 Diabetes Risk Test when they checked in for their appointments. The staff at registration made sure that each patient did not have a diagnosis of diabetes and was not previously identified as having prediabetes. If the patient's risk score was 5 or higher, a chart review was performed for further evaluation focusing on recent BMI and HbA1c values.

Each patient with a BMI and HbA1c within the criteria set forth in the STAT toolkit was automatically flagged in the system as a candidate for additional education and referral to the National DPP lifestyle change program. The providers reviewed this information before going into the exam rooms, discussed the benefits of the program with the patient, and signed a referral form for the patient to participate in the program (Table 2).

Table 2. Accent Patient Referrals and Enrollment

Referral Primary Category	Number Referred	Number Enrolled
Point of care: Patient was provided information to self-enroll (EHR Retrospective Query)	89	n/a
Point of care: Patient enrolled by provider/clinic staff	39	38
Patient letter (total)	128	
Other	n/a	

Diagram 5. Accent Retrospective EHR Review



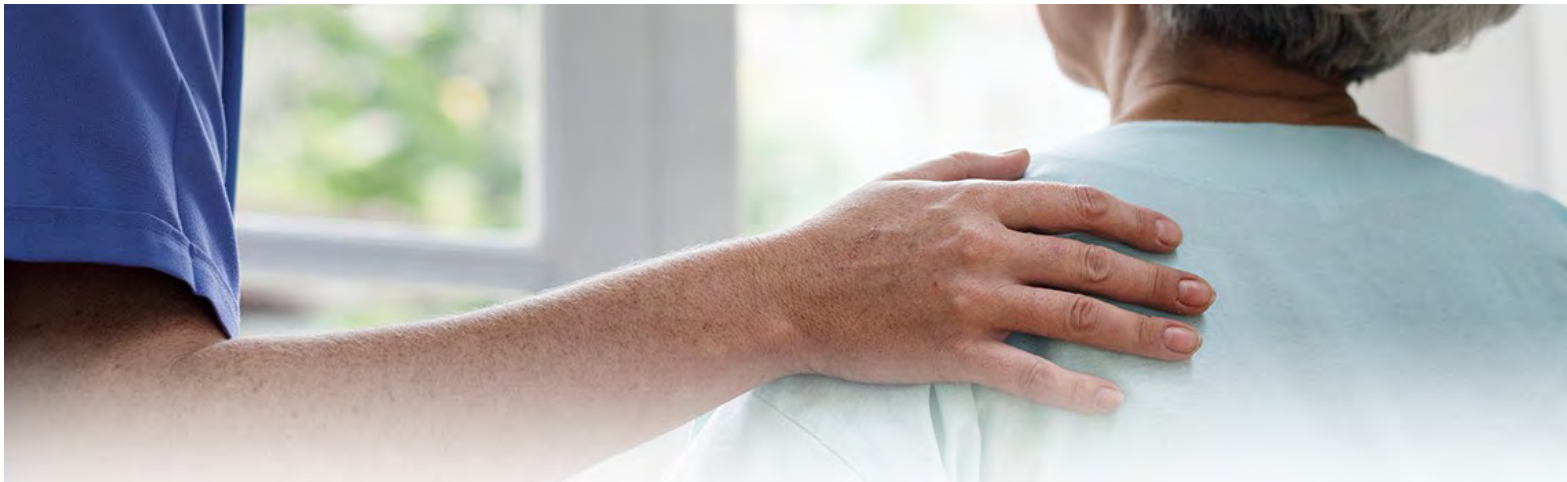
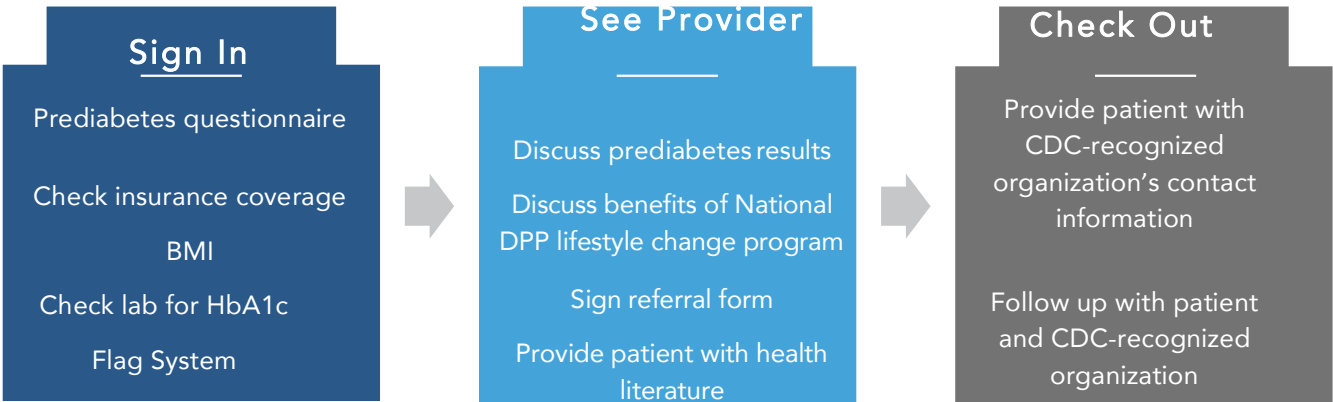


Diagram 6. Accent Point of Care Workflow



Successes, Challenges, and Lessons Learned

Through a retrospective review of EHR data and regular office visits, 806 patient electronic records were reviewed, and 128 patients were diagnosed with prediabetes. Of those diagnosed with prediabetes, 38 enrolled in the Flexcare Pharmacy Diabetes Prevention Program which was fully funded by the local department of health. The STAT toolkit was effective in screening for prediabetes in a primary care setting, and there was little or no effect on daily office workflow during the implementation of the project.

There were challenges during the implementation of the demonstration project that potentially limited the referral and enrollment process. The EHR software provider at the time of the case study was Fox Meadows. The software provider was not familiar with prediabetes screening, and the software was not designed to incorporate prediabetes screening in the EHR. Thus, there was no easy access to the information by providers and other staff. There was also no dedicated section in the EHR to track screening and document follow up efforts. There were also challenges with reimbursement for blood glucose testing. The suggested CPT codes (i.e. CPT code: 99401) were not very helpful in billing for prediabetes testing /abnormal blood glucose, and only two claims were reimbursed by insurance companies using the codes provided.

**Lessons Learned:**

- Establish a relationship with these organizations early on and obtain information on their class schedules.
- A new software program and a more experienced team handling all billing questions and concerns are crucial for success.
- Local departments of health can assist in promoting the program if involved early in the process.
- Peer leaders and diabetes educators can also help in promoting the program.
- It is important to verify that there are CDC-recognized organizations in the community, and that these programs are able to meet the needs of patients referred within a reasonable time frame.
- The practice must continue to make this program a priority to ensure its success.

## Scalability and Next Steps

**Accent is considering the following next steps:**

- Changing to new EHR software with better capabilities to handle preventive efforts. Accent's existing system was not designed to handle such an initiative in an effective manner. Upgrades required were cost prohibitive.
- Revisiting reimbursement concerns for blood glucose testing.
- Assigning a dedicated staff member to follow up with enrolled patients and with the CDC- recognized organization on a quarterly basis.
- Staying involved with the local department of health to take advantage of any assistance offered.
- Learning more about the Medicare Diabetes Prevention Program.





# Independent Practice Association: Griffin Faculty Physicians

Griffin Faculty Physicians (GFP) has seven primary care offices with a total patient panel of 20,978. All offices are recognized as Patient Centered Medical Homes. Primary care providers are attending physicians, resident physicians, physician assistants, and nurse practitioners specializing in internal medicine or family medicine. GFP primary care offices accept most major insurance plans. Approximately 63% of patients have private insurance, 22% are Medicaid-Connecticut beneficiaries, 14% have Medicare, and 2% are self-pay. Each primary care office provides general medical care, routine health exams, immunizations, lab testing (including in-office HbA1c testing), and referrals to specialists and Griffin Hospital prevention programs and support groups.<sup>7</sup>

Griffin Hospital serves the lower Naugatuck Valley Region (“the Valley”) of Connecticut, comprised of the towns of Ansonia, Beacon Falls, Derby, Naugatuck, Oxford, Seymour, and Shelton. The Valley towns represent the diversity of the 169 towns in Connecticut, with some considered urban periphery towns (Ansonia, Derby, and Naugatuck), rural-like towns (Beacon Falls and Seymour), and higher-income suburban towns (Oxford and Shelton).

## Pre-Demonstration Project Approach

Prior to the demonstration project, there was no practice-wide systematic screening for prediabetes at GFP offices. Screening and referrals were dependent upon each provider’s clinical judgment. Griffin is a CDC-recognized organization and offered the National DPP lifestyle change program prior to the demonstration project. Referrals to this and other Center for Prevention and Lifestyle Management (CPLM) programs offered through the outpatient clinic were handled through the EHR. In addition to the diabetes prevention program, patients with prediabetes were referred to a registered dietitian for medical nutrition therapy/nutrition assessment and management as needed.

<sup>7</sup> Griffin Faculty Physicians Demonstration Project 2018 Midterm Report



## Demonstration Project

**GFP designed the demonstration model to focus on:**

- Developing practice-wide systematic screening for prediabetes at GFP offices.
- Modifying existing public domain resources to support the prediabetes screening, testing, and referral model.

## Provider Engagement

Before applying for the demonstration project, the Director of the Center for Prevention and Lifestyle Management at Griffin Hospital (Center Director) met with several key members of organization leadership to obtain their buy-in for the project, particularly the Director of Primary Care for Griffin Faculty Physicians and the Vice President for Accountable Care. The Center Director discussed the proposed program with the GFP data lead and RN/MA Quality lead who trains the medical assistants and helps ensure that quality measures are met. The idea of using a new pre-visit planning form emerged from these meetings. When demonstration project funding was received, the Center Director met with the primary care providers to explain the project, elicited their feedback and concerns, and discussed how to address them.

A reference sheet for providers and staff was developed that included information on the National DPP, the demonstration project, as well as patient insurance co-pay information that the providers could discuss with the patient. Throughout the process, the Center Director met with the Director of Primary Care and capitalized on strategic opportunities to speak with primary care providers and staff.

## Developing Awareness

**GFP utilized the following materials to develop awareness of the program within the hospital system and the community (Appendix A):**

- CDC National DPP patient brochures/handouts
- CDC National DPP posters and infographics in clinic rooms
- CDC National DPP overview information for providers

The materials promoted awareness of prediabetes and the National DPP among providers/staff and patients. Additionally, presentations were conducted at provider and staff meetings to promote awareness of prediabetes and the National DPP, and to orient them to the new clinic workflow.



## Patient Identification

The GFP screening approach was a modified combination of the “retrospective prediabetes identification” and the “point-of-care prediabetes identification”<sup>8</sup> models noted in the Prevent Diabetes Stat Toolkit. Specifically, GFP utilized the planning platform developed by its EHR consultant, SymphonyRM. For this project, SymphonyRM created a “prediabetes module” for the pre-visit planning (PVP) tool. Instead of generating a list of patients needing prediabetes screening (“retrospective EHR query”), the PVP form alerted providers of the need for prediabetes testing (done by the medical assistant; “point-of-care prediabetes identification”), or the need to discuss referral to the National DPP lifestyle change program with patients who met the criteria for prediabetes.

The workflow for identifying patients with prediabetes began with screening all patients  $\geq 45$  years of age or with a BMI  $\geq 25$  kg/m<sup>2</sup> ( $> 23$  kg/m<sup>2</sup> in Asian Americans). The age of  $\geq 45$  was based on the American Diabetes Association’s 2017 Standards of Medical Care in Diabetes criteria for diabetes screening.

**Screen <sup>9</sup> (1) all patients age  $\geq 45$  OR (2) with BMI  $\geq 25$  kg/m<sup>2</sup> ( $\geq 23$  kg/m<sup>2</sup> in Asian Americans) AND one or more of the following risk factors:**

1. First degree relative with diabetes
2. High-risk ethnicity (African American, Latino/Hispanic, American Indian, Alaskan Native, Asian American, Pacific Islander)
3. Women with history of gestational diabetes or delivering a baby  $> 9$  pounds
4. History of cardiovascular disease
5. Hypertension diagnosis
6. HDL cholesterol less than 35 mg/dL and/or triglyceride level  $> 250$  mg/dL
7. Women with polycystic ovarian syndrome

## Retrospective Query

In the retrospective identification (Diagram 7), the EHR/patient database was queried to screen for prediabetes among patients who met the criteria. In the point-of-care identification, if a patient was age 18 or older and did not have diabetes, a screening test was administered, and blood glucose testing was ordered dependent upon the patient’s risk.

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<sup>8</sup>Centers for Disease Control and Prevention and American Medical Association. Preventing type 2 Diabetes: A guide to refer your patients with prediabetes to an evidence-based prevention program (Prevent Diabetes STAT toolkit). Retrieved from [https://www.cdc.gov/diabetes/prevention/pdf/stat\\_toolkit.pdf](https://www.cdc.gov/diabetes/prevention/pdf/stat_toolkit.pdf)

<sup>9</sup>American Diabetes Association. Classification and diagnosis of diabetes. Sec. 2. In Standards of Medical Care in Diabetes 2017. Diabetes Care 2017; 40(Suppl. 1):S11–S24





## Pre-Visit Planning

When designing the screening protocol, GFP added elements that were already in place in their clinic workflow at each GFP office. As part of Patient Centered Medical Home certification, each office utilized a pre-visit planning tool/form that flags for the office staff what needs to be done for each patient at his/her upcoming visit. Prior to the demonstration project, the pre-visit planning tool/form did not flag patients who were at risk for type 2 diabetes for prediabetes screening or testing.

GFP created a “prediabetes module” for the pre-visit planning tool that utilized the criteria below to generate an alert in the PVP form indicating that the patient needs prediabetes testing (HbA1c in-office during the visit), or needs the provider to discuss the National DPP lifestyle change program and initiate a referral. Instead of creating a list of patients needing prediabetes testing, the PVP form automatically generated an alert for prediabetes testing or referral to the program for patients who met the criteria based on the American Diabetes Association’s 2018 Standards of Diabetes Care.

## Point of Care

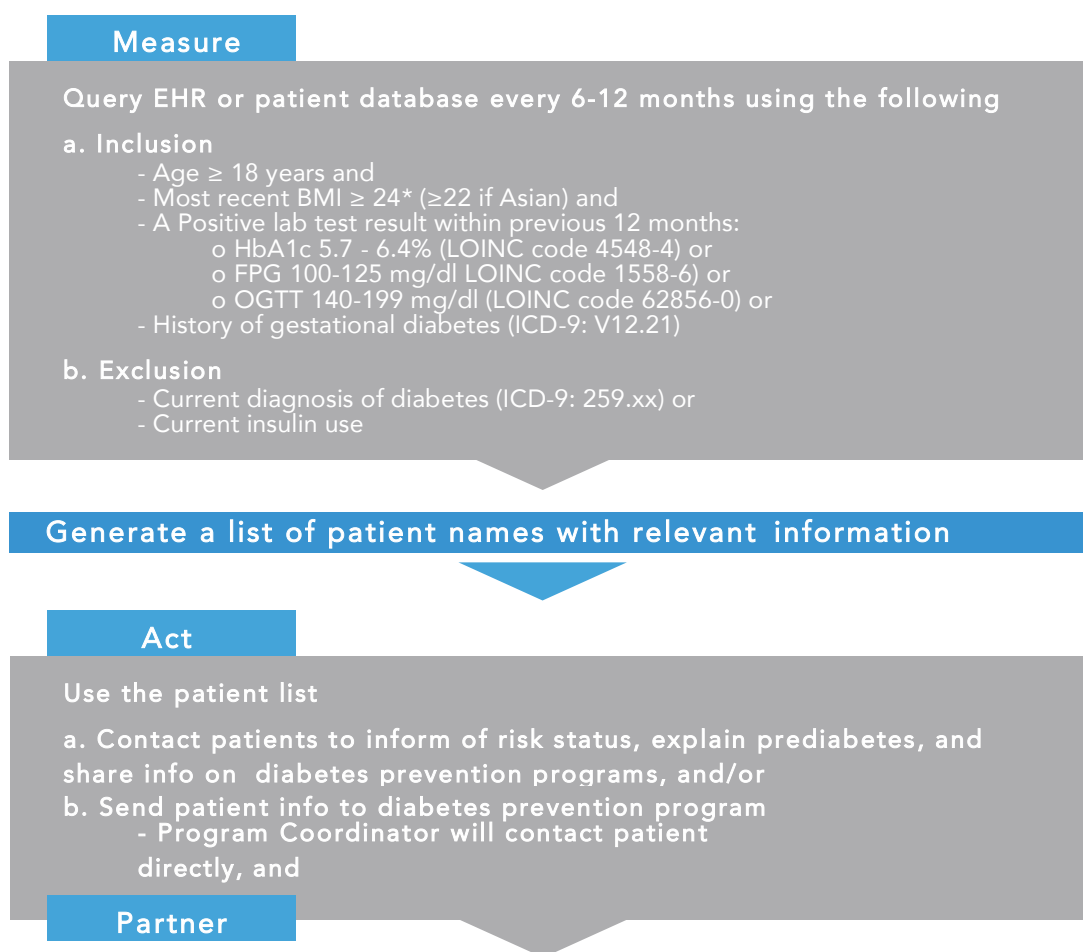
Prediabetes screening and testing was incorporated into the pre-visit plan. Each time a patient at risk for type 2 diabetes came to the clinic, the patient record was flagged, and the provider had a discussion with the patient at the point of care.

Two types of patients would trigger a referral to the National DPP lifestyle change program: (1) a patient with an HbA1c of 5.7-6.4 during the visit **OR** (2) a patient without a previous HbA1c in the current year who was flagged by the pre-visit planning tool as needing an HbA1c test, and subsequently had an HbA1c in the prediabetes range (5.7-6.4). For these two types of patients, the medical assistant alerted the primary care provider of the need to discuss the National DPP lifestyle change program, and to make a referral in the EHR if the patient was in agreement.

Alternatively, if the patient was not ready to commit to the National DPP or was interested in other interventions, the PCP referred the patient to the CPLM Intake Coordinator who explained the different programs available.

Referrals to all Center for Prevention and Lifestyle Management programs, including Griffin’s CDC-recognized diabetes prevention program, were incorporated in the referral section of GFP’s outpatient EHR, Athenanet. When a provider ordered a referral to the diabetes prevention program, a fax was sent to the Griffin Hospital Diabetes Educator and Diabetes Prevention Program Facilitator who contacted the patient regarding enrolling in the program. GFP also updated the EHR to track when a provider discussed a referral to the diabetes prevention program and the patient was not ready to commit.

Diagram 7. GFP Retrospective Prediabetes Identification Process



\* BMI criteria have changed (now  $\geq 25$ , or  $\geq 23$  if Asian)


Source: [Prediabetes STAT Toolkit, AMA/CDC](#)

## Successes, Challenges, and Lessons Learned

GFP did not move forward with the screening and referral process for the National DPP lifestyle change program. There was a delay in implementing the prediabetes module of the pre-visit planning form/tool due to concerns raised by providers (e.g., financial burden of the blood glucose test on patients, inconsistent provider knowledge and comfort with ICD codes to ensure HbA1c testing is covered, and timing of the testing), which GFP has addressed.

GFP first wanted to address provider concerns before moving forward with the prediabetes module of their pre-visit planning form, so that staff and providers are engaged and understand that GFP values their feedback and wants to partner with them throughout the process. Due to this aim, there were no referrals or enrollment in the National DPP lifestyle change program during the demonstration project.





One lesson learned from this project was that it is essential to use the “teach-back method” to ensure the software vendor can develop the needed system enhancements. The method consists of asking the consultant/software developer to “teach back”/share their understanding of the algorithm. Another lesson is to make sure there is direct communication with the individual responsible for writing the code. As a result of these challenges, GFP preferred to delay launching the process, both to ensure accuracy of results for patients and also continued and sustained buy-in from the staff and providers.

## Three key lessons learned during the GFP demonstration project were:

1. Create and promote a collaborative process:
  - Empower stakeholders in the process (listen, iterate from feedback, monitor).
  - Use and maximize existing tools.
2. Demystify the National DPP, and showcase the power of lifestyle change:
  - Narratives are powerful.
  - Emphasize patient empowerment.
3. Facilitate ease of referral and enrollment in the National DPP lifestyle change program:
  - Incorporate a process for referral within the EHR.
  - Identify points of contact (for patients and providers).

While there were challenges, GFP also had successes throughout the process:

**Prediabetes Information Session:** The prediabetes information session is a community- based information session where participants learn about prediabetes and the National DPP. The session was very well-received by participating patients and the community. GFP plans to host at least two sessions per year to increase patient and community awareness of prediabetes and the National DPP lifestyle change program. GFP’s goal was to demystify prediabetes and the National DPP and encourage and empower patients to make lifestyle changes that help prevent type 2 diabetes. Session participants noted enjoying being able to learn about the pathophysiology of diabetes (“mini-med school” lesson), being able to ask practical questions about healthy nutrition/lifestyle change, hearing from individuals who successfully completed the National DPP lifestyle change program, and being able to ask specific questions about the program components and its length.

## Scalability and Next Steps

The different components of the demonstration project are now embedded in the clinic system in a way that will promote awareness of prediabetes and the National DPP among patients and the community, increase detection of prediabetes using the pre-visit planning tool (continuing to iterate and make sure it is accurate), include these processes in the workflow of the medical assistant and the primary care provider, and continue to maintain buy-in from the Director of Primary Care and other leadership and staff at GFP. For the latter, the Director continues to meet with trainers/quality care leads as well as with the Director of Primary Care and the main contact person at SymphonyRM (the consultants who developed the pre-visit planning tool,) and attends primary care provider meetings to continue to educate on the process. Additionally, residents are required to review information on all CPLM programs.





**Learning from this demonstration project, GFP will continue to increase patient awareness of prediabetes and the National DPP lifestyle change program using the following methods.**

- **Newsletter:** GFP will have two newsletter campaigns on prediabetes each year, once in the spring and once in the fall. The newsletter will be a personalized letter (see Appendix A) from the patient's primary care provider addressing various health topics, including prediabetes (see Appendix A). The newsletter will also include the ADA Type 2 Diabetes Risk Test. GFP primary care newsletters reach the whole patient population of the practice group, approximately 20,000 patients. All patients with email addresses on file will receive the newsletter via email blast.
- **Targeted Email Blast:** In addition to the newsletter, GFP has found that a targeted email blast is another means to increase awareness about prediabetes and related information sessions, especially when timed appropriately.
- **Prediabetes Information Session:** This is a particularly powerful way of increasing patient awareness and comfort with signing up for the National DPP lifestyle change program. The main goal of these sessions is to empower patients with knowledge that type 2 diabetes can be prevented with lifestyle change, and that others have succeeded in reducing their risk through the National DPP lifestyle change program. GFP anticipates 10-40 community members per information session.

**Another goal is to demystify the National DPP lifestyle change program. Moving forward, GFP will keep the format of the information session used during the demonstration project:**

- **Duration:** 1 hour (mimics the length of a National DPP lifestyle change program class session)
- **Topics/sections covered during the session:**
  - Prediabetes/diabetes and lifestyle change (speaker(s): internal medicine/preventive medicine physicians and/or primary care physician)
  - The National DPP lifestyle change program and its components (speaker: diabetes educator)
  - The National DPP experience and long-term change/testimonial (speaker(s): 1-2 program graduates)

# Summary of Challenges

The grantees faced a number of challenges and have uncovered a number of valuable lessons learned. Some encountered delays in implementation due to concerns raised by providers. The concerns included the financial burden of blood glucose testing on patients and limited knowledge and lack of comfort with relevant ICD codes to ensure HbA1c testing is covered.

Moreover, there were delays in establishing partnerships with key stakeholders, such as local departments of health, to collaborate on promoting the National DPP lifestyle change program, in some cases because of the time it took to identify the decision makers and appropriate leaders who could provide the needed support. The grantees also experienced difficulties adjusting EHR software programs to include the necessary workflow to support prediabetes screening, testing, and referral and to address billing issues for screening and testing.

Retrospective queries to identify patients at high risk for type 2 diabetes took more time than expected due to a number of reasons. For example, one grantee had to conduct in-depth chart reviews to obtain complete information to determine whether patients met program eligibility criteria. In some cases, patients were confused due to lack of communication prior to current outreach efforts. Outreach calls were unwelcome or incomplete if staff were unable to leave the patient a voicemail, or if the phone number was wrong or was out of service. In fact, a general lack of patient awareness of prediabetes/diabetes was found. There was also a lack of provider awareness of the importance of prediabetes screening, testing, and referral to a CDC-recognized organization offering the National DPP lifestyle change program.

Some patient portal systems required too many steps for patients to get into the system to complete a risk assessment. In addition, there were concerns about asking patients to fill out “one more questionnaire,” and concerns over HIPPA compliance issues.

The challenge of addressing many items at the patient appointment at times detracted from the screening, testing, and referral process.

Even as local champions supported program efforts, they encountered challenges in making the National DPP lifestyle change program an ongoing priority among other competing priorities.

**DIABETES**

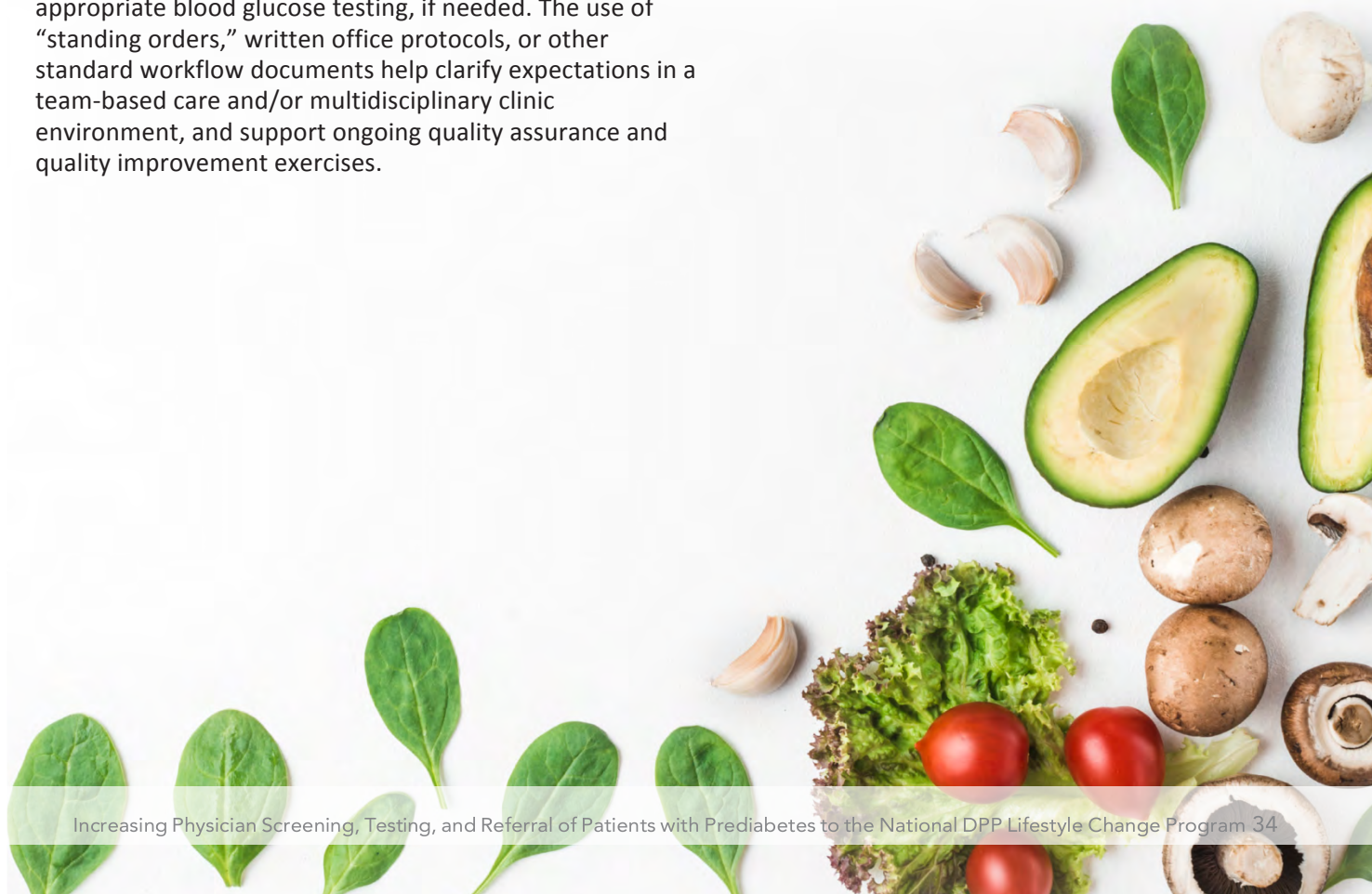


# Summary of Successes

As a result of conducting these demonstration projects, grantees identified several promising practices for providers and clinical systems. These practices speak to the similarities in health care delivery despite variations in patient populations, organization type, or insurance coverage across the different locations.

Given the prevalence of prediabetes and diabetes in the United States, a type 2 diabetes risk assessment needs to be incorporated into the routine, standard workflow of clinic staff serving populations at high risk. Once a workflow is repeated many times and becomes routine, it is easier for staff to implement, and it is more likely to be implemented correctly. Given the many competing demands during a primary care visit, it is all the more important that the risk assessment become more of a routine, baseline task that is comfortable for all staff – not unlike weighing the patient, taking blood pressure, or asking about tobacco use.

Ideally, the provider is aware of the risk assessment, incorporates the information into the patient chart, and acts on the results in a way that therapeutically supports patient access to evidence-based prevention, including a referral to the National DPP lifestyle change program. However, because a provider referral is not a requirement for participation in the National DPP, it is also ideal that the provider not act as a barrier to patient access. Thus, if a patient meets the criteria for referral via their risk assessment score, the patient should be referred to a CDC-recognized organization, even if the patient and provider do not have time to discuss the referral – which may be all too common during a busy clinic visit. Thus, other support staff should be empowered to refer patients who meet program eligibility criteria. Depending on state license regulations, allied health professionals may be empowered to order appropriate blood glucose testing, if needed. The use of “standing orders,” written office protocols, or other standard workflow documents help clarify expectations in a team-based care and/or multidisciplinary clinic environment, and support ongoing quality assurance and quality improvement exercises.





Empowering alternate staff to assist in screening and referrals also creates opportunities for these staff to screen and refer when they interact with patients outside of the traditional office visit. Examples of such interactions include when patients call for appointments, are reminded about appointments, are given results over the phone, or come in for other services such as immunizations or flu vaccines. These interactions might be further supported with standard scripts or health education materials that can be used by allied health staff. The many interactions that these staff have with patients outside of the traditional office visit usually involve documentation, which affords an opportunity to review basic information in the EHR that can be helpful in completing a type 2 diabetes risk assessment (e.g. age, race/ethnicity, past medical history [i.e. gestational diabetes], current problem list [high blood pressure, obesity, etc.], family history of type 2 diabetes, BMI, and perhaps even blood glucose values). Thus, a risk assessment may be easily completed on behalf of a patient or completed with very few questions. Identifying eligible patients may then automatically prompt a referral to a CDC-recognized organization or a provider appointment to discuss type 2 diabetes risk.

Even in a clinic that employs a type 2 diabetes risk assessment as a part of the standard workflow during patient registration or rooming, there will be missed opportunities when the risk assessment or referral is forgotten, misplaced, misunderstood by the patient, misinterpreted by staff, or not carried out because the patient simply does not present at the clinic. Empowering allied health or support staff to employ a protocol/standard workflow in a variety of settings or across multiple patient interactions helps ensure completion of the task, despite human error.

As with other essential health care services, quality assurance tools and regular checks should be built into the process. Standard workflow documents and/or protocols are essential for training and reference. Checklists and documentation tools, including preformatted note templates or text macros for an EHR (e.g. “smart phrases” or “dot phrases”), are also helpful for the day-to-day work of interacting with patients and documenting in the EHR. The team needs to conduct quality assurance reviews of data gathered, such as verifying height and weight and checking for family history updates. Identifying and collecting data related to the goal of this project (increasing prediabetes screening, testing, and referral to a CDC-recognized organization) – and then reviewing these data at regular intervals – is not a part of routine work at most clinics. However collecting and reviewing such data is integral to any quality improvement effort.





Focusing on written processes and workflows to improve the efficiency or expediency of prediabetes screening, testing, and referral is also essential. For example, the process of checking for patient eligibility criteria via a chart review may be expedited by utilizing the bulk messaging function within the EHR to generate letters appropriately. EHR systems that support the health team can make a tremendous difference in terms of collating and providing critical information and reminders at the point of care. Some EHRs can be set up to calculate risk automatically and create reminders or alerts in the patient's chart. Support staff and providers can be trained on these relevant fields and functionality within the EHR. Workflows can be developed that allow staff members other than physicians to assist in identifying patients eligible for the National DPP lifestyle change program, initiating referrals, and communicating with primary care providers about these referrals.

Effective communication among all members of the health care team not only helps initiate new workflows, but can also help inform adjustments to improve existing workflows, making them sustainable and successful over the long term. Examples of effective communication include the following:

1. Conducting meetings with medical leadership, quality improvement leaders, clinical “champions” from different disciplines, and managers/trainers for medical assistants and other allied health staff to ensure leadership and management support.
2. Conducting presentations for providers at both regular clinic-level meetings and special educational events focused on continuing education or quality improvement.
3. Holding initial meetings to educate all members of the health care team and to elicit their concerns and input on any desired changes in workflow.
4. Providing updates at regular intervals on the successes and challenges and improvement ideas for the workflow after the project has begun.
5. Leveraging existing health system and health team communication portals, including meetings, newsletters/publications, emails, and mailers to patients and/or staff/employees.

Before initiating a prediabetes screening, testing, and referral effort, the health system or clinic must identify a multidisciplinary team of National DPP “champions” who will help promote the program and support efforts to implement systematic screening, testing, and referral protocols. These champions need to verify that patients have access to a CDC-recognized organization offering classes locally or online, and that these programs can meet the needs of patients in a reasonable time frame. This can be done by setting up regular communication with active CDC-recognized organizations serving your target population. Champions must also actively promote the program; conduct ongoing prediabetes information sessions; continually answer questions and help troubleshoot; and provide reference materials appropriate for providers, staff, and patients. Effective communication and collaboration with providers, staff, administrators, and consultants is crucial, and must include taking time to address the concerns of key stakeholders.

*Table 3. Summary of Challenges and Lessons Learned*

	Challenges	Key Lessons Learned
Provider Concerns	<ul style="list-style-type: none"> <li>The financial burden of HbA1c testing on patients, and limited knowledge and lack of comfort with relevant ICD codes to ensure the cost of HbA1c screening is covered</li> <li>Making the National DPP lifestyle change program an ongoing priority among other competing priorities</li> <li>Concerns over HIPPA compliance issues</li> </ul>	<ul style="list-style-type: none"> <li>Effective collaboration is a must; take time to address the concerns of key stakeholders.</li> </ul>
Delays	<ul style="list-style-type: none"> <li>Delays in implementation due to provider concerns</li> <li>Delays in establishing partnerships with key stakeholders, such as local departments of health to collaborate on promoting the program</li> </ul>	<ul style="list-style-type: none"> <li>Look at steps that can minimize delays (e.g. minimizing chart review time by utilizing the bulk messaging function within the EHR to generate letters).</li> </ul>
Communication /Awareness	<ul style="list-style-type: none"> <li>A general lack of patient awareness of prediabetes/diabetes</li> <li>Lack of provider awareness of the importance of prediabetes screening, testing, and referral to a CDC-recognized organization offering the National DPP lifestyle change program</li> </ul>	<ul style="list-style-type: none"> <li>Communication and education for both patients and providers is essential.</li> <li>Provider education is necessary to introduce the National DPP and explain how to utilize the risk score in screening patients for type 2 diabetes.</li> <li>To assure system-wide change occurs, local champions must get buy-in from senior leadership, as well as from staff and primary care providers.</li> <li>Champions must also promote the necessary materials and tools for providers and staff to use.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Difficulties adjusting EHR software programs to include the necessary workflow and to address billing issues for screening / testing.</li> <li>Patient portal systems requiring too many steps for the patient to get into the system to complete a risk assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Electronic systems can be set up to calculate risk automatically and place an alert in the health maintenance field.</li> <li>Train staff on any new, relevant fields created within the EHR.</li> <li>Incorporate referral functionality within the EHR.</li> </ul>
Processes and Workflows	<ul style="list-style-type: none"> <li>Recruitment processes, such as retrospective queries, requiring more time than expected</li> <li>Addressing many items during the patient appointment detracting from the screening, testing, and referral process.</li> <li>Providers challenges in adjusting to new workflows.</li> </ul>	<ul style="list-style-type: none"> <li>Workflows can be developed that allow staff members other than primary care providers to assist in prediabetes screening, testing, and referral.</li> <li>Incorporate screening, testing, and referral protocols into the regular work flow of primary care providers and allied health staff.</li> <li>Verify that patients have access to CDC-recognized organizations offering classes locally or online.</li> <li>Identify key points of contact for patients and providers.</li> </ul>

# Conclusion

In a two-year project focused on strengthening and institutionalizing practices to support prediabetes screening, testing, and referral to CDC-recognized organizations offering the National DPP lifestyle change program, the American College of Preventive Medicine worked with nine health care organizations/practices.

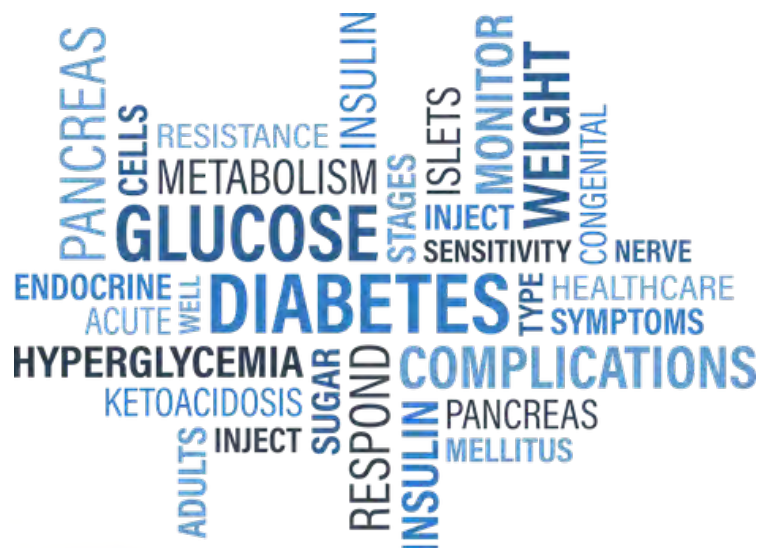
Three of these organizations were highlighted in this case study, which reviewed their approaches, barriers, and scalability plans:

- Northeast Missouri Health Center – Kirksville, Missouri (FQHC)
- Accent on Health – Washington, DC (IPA)
- Griffin Faculty Associates – Derby, Connecticut (IPA)

The goals set out for the project were to increase physicians'/health care professionals' awareness of prediabetes as a serious health condition; develop and implement protocols for screening, testing, and referring patients with prediabetes to a CDC-recognized organization; and increase the number of physicians/health care professionals taking action to screen, test, and refer patients with prediabetes to CDC-recognized organizations (organizations with pending, preliminary, or full recognition).

## Challenges and lessons learned from the Northeast Missouri Health Center include:

- Additional trainings provided opportunities for nurses and staff to ask questions about the risk factors contributing to the development of type 2 diabetes.
- Type 2 diabetes risk assessment may not be the highest concern for the patient or provider at the initial appointment with a primary care provider.
- Adding screenings or new information to an existing workflow in the already limited time of a typical clinic appointment can be challenging. Workflows were developed to allow other staff members to assist in identifying patients for referral and communicating this information to the providers.





**Challenges and lessons learned from Accent on Health include:**

- The software used in the enrollment process may have limited identification and referral of patients with prediabetes, because it was not designed to incorporate prediabetes screening into the EHR. Accent identified the need for a new software program and a more experienced team to handle billing questions and concerns.
- There were challenges with reimbursement for blood glucose (HbA1c) testing.
- Local departments of health need to be involved early in the process to assist in promoting the National DPP. Peer leaders and diabetes educators can also help in promoting the program.

**Challenges and lessons learned from the Griffin Faculty Associates Program include:**

- In order to facilitate ease of referral and enrollment in the National DPP lifestyle change program, referral functionality is needed within the EHR.
- The “teach-back method” is necessary to ensure the software vendor can develop needed system enhancements. Direct communication with the individual responsible for writing the code is also critical.
- A collaborative process is necessary to empower stakeholders in the process and use and maximize existing tools.
- Narratives are powerful and can emphasize patient empowerment to demystify the National DPP and showcase the power of lifestyle change.

In summary, the case study found that challenges and best practices were similar despite the diversity among participating health care systems/practices in geographic location, patient populations, and insurance coverage. Provider concerns, delays, communication/awareness, technology, and processes/workflow were the key areas identified and addressed by the health care organizations in this case study.

Notably, improved communication and workflows were identified as two main threads across all the recommendations and promising practices. Increased and improved collaboration between providers is essential to system-wide adoption of new workflows. Communication and education for both patients and providers is essential and can come with adoption of new technology and tools available through EHRs. Also, for successful programs, champions are needed. Champions are often key leadership at a clinic or health organization and are integral to increasing buy-in from all levels within the organization, promoting the use of new materials and implementing and supporting new workflows and processes.

# Resources

## Centers for Disease Control and Prevention (CDC)

1. CDC National Diabetes Prevention Program - <https://www.cdc.gov/diabetes/prevention/index.html>
2. What Is the National DPP? - <https://www.cdc.gov/diabetes/prevention/about/index.html>
3. Implement a Lifestyle Change Program (for Professionals) - <https://www.cdc.gov/diabetes/prevention/lifestyle-program/index.html>
4. Screen & Refer Patients to a Lifestyle Change Program (for Professionals)- <https://www.cdc.gov/diabetes/prevention/lifestyle-program/deliverers/index.html>
5. Requirements for CDC Recognition - <https://www.cdc.gov/diabetes/prevention/lifestyle-program/requirements.html>
6. =

## American College of Preventive Medicine (ACPM)

7. Diabetes Prevention Program Resource Center- <https://www.acpm.org/page/dppresources>
8. ACPM Diabetes Prevention Program Initiatives – [www.acpm.org/page/dpp](http://www.acpm.org/page/dpp)

## Centers for Medicare & Medicaid Services (CMS)

9. Medicare Diabetes Prevention Program website - <https://innovation.cms.gov/initiatives/medicare-diabetes-prevention-program/>
10. Medicare Diabetes Prevention Program (MDPP) Medicare Advantage Fact Sheet - <https://innovation.cms.gov/Files/fact-sheet/mdpp-ma-fs.pdf>
11. Medicare Diabetes Prevention Program (MDPP) Expanded Model Fact Sheet - [https://innovation.cms.gov/Files/x/MDPP\\_Overview\\_Fact\\_Sheet.pdf](https://innovation.cms.gov/Files/x/MDPP_Overview_Fact_Sheet.pdf)

## American Medical Association (AMA)

12. Preventing Type 2 Diabetes - <https://www.ama-assn.org/delivering-care/preventing-diabetes>
13. Prevent Diabetes STAT™ Toolkit - <https://preventdiabetesstat.org/toolkit.html>
14. What Physicians Can Do to Prevent Diabetes - <https://www.ama-assn.org/delivering-care/advocating-diabetes-prevention#What%20Physicians%20Can%20Do%20to%20Prevent%20Diabetes>

## American Diabetes Association (ADA)

15. Diagnosing Diabetes and Learning About Prediabetes- <http://www.diabetes.org/are-you-at-risk/prediabetes/?loc=atrisk-slabnav>
16. Type 2 Diabetes Risk Test - <http://www.diabetes.org/are-you-at-risk/diabetes-risk-test/>
17. Tools to Know Your Risk- <http://www.diabetes.org/are-you-at-risk/tools-to-know-your-risk/?loc=atrisk-slabnav>
18. Practice Resources - <http://www.diabetes.org/research-and-practice/practice-resources/?loc=rp-slabnav>

## National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

19. Diabetes Prevention Program (DPP) - <https://www.niddk.nih.gov/about-niddk/research-areas/diabetes/diabetes-prevention-program-dpp>
20. Preventing Type 2 Diabetes - <https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-type-2-diabetes>