Diabetes Quality Improvement Initiative
Performance Improvement Analysis

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The HRSA Bureau of Primary Health Care’s (BPHC) Diabetes Quality Improvement Initiative aims to reduce the number of health center patients that become diabetic, increase diabetes control in those patients living with the disease, and eliminate the disparities seen in diabetes occurrence, control, and complications. The diabetes initiative is a strategy that directs Bureau of Primary Health Care’s resources towards a single focal point, diabetes, with the goal of improving the health outcomes of the 2.3 million diabetics that receive services from the health center program.

Through the Diabetes Quality Improvement Initiative, BPHC hopes to achieve the following outcomes:

- Reduce by 5% the proportion of persons with diabetes with an HbA1c value greater than 9 percent by year 2020.
- Increase by 5% the percentage of adults who receive weight screenings & counseling by year 2020.
- Increase by 5% the percentage of children who receive weight screenings & counseling by year 2020.
- Reduce by 5% the number of patients who develop diabetes by year 2020.
- Reduce by 1% the disparities gap between racial and ethnic groups with the highest and lowest rates of diabetes by year 2020.

To achieve these outcomes, in 2018, all BPHC Health Center Operational Site Visits included a facilitated discussion of the health center’s diabetes performance analysis. The discussion was led by the site visit consultants and facilitated with key staff identified by the health center. The aim of the performance analysis discussion was for health centers to develop an action plan for diabetes performance improvement. The structured discussions focused on the following elements: (1) reviewing the health center’s stated goal for the diabetes performance measure; (2) reviewing UDS trend and performance data; (3) facilitating a root cause analysis of diabetes performance, including a review of the contributing and restricting factors that the health center self-identified in its most recent Service Area Competition and Budget Period Renewal applications, as well as a discussion of other applicable factors the health center may not have identified; and, (4) asking the health centers to rank the factors in order of priority, with those having the strongest influence on performance ranked the highest. Health centers identified internal and external influencing factors, and were asked to consider how the health center’s goal for the measure might be impacted by these factors. They were then asked to develop and document three action steps to address the identified root causes necessary to improve performance on the measure’s outcome.

The following analysis provides a qualitative overview of the diabetes performance improvement discussions occurring during 2018 health center Operational Site Visits. The
assessment and identified themes in the performance analysis process will allow BPHC to examine the strengths and weaknesses in its technical assistance offerings, detect gap areas that would benefit from additional technical assistance, and identify health centers that are excelling in diabetes quality and performance improvement for the collection and sharing of their best and promising practices.

Methodology

This diabetes performance analysis was initiated using an Excel spreadsheet presented by HRSA (Attachment 1) that included a compilation of the data received from each health center participating in the diabetes performance analysis activity during an Operational Site Visit in 2018. The initial data was separated into four columns, including:

1) **Contributing Factors (Column M)** – associated with improving control of patients with HgbA1c levels greater than 9;

2) **Restricting Factors (Column N)** – associated with reducing control of patients with HgbA1c levels greater than 9;

3) **Recommended Activities (Column O)** – developed by each health center for improving control of patients with HgbA1c levels greater than 9; and,

4) **Performance Analysis Comments (Column P)** – other comments entered into the OSV report by the consultants completing the diabetes performance improvement activity.

A “thematic” process was used to analyze the data. Thematic analysis is the process of identifying patterns or themes within qualitative data. The goal of a thematic analysis is to identify themes, i.e. patterns, in the data that are important or interesting and use these themes to describe something about an issue.

The first step of data analysis involved organizing the data in a meaningful and systematic way. This was completed through identification of “code-words”. Coding is used to reduce a large quantity of data into small meaningful segments. The process of identifying code words was completed with a software program called “WordStat”, which is a qualitative analysis tool used for extraction of themes and trends. Data provided by HRSA from completed diabetes performance improvement activities (i.e., Excel Columns M, N, O, and P) was entered into the WordStat software.

The WordStat program was then utilized to generate a proximity plot (presented below for each Excel column). Each proximity plot identifies the most common reoccurring words, also identified as “code-words”.

Diabetes Quality Improvement Initiative - Performance Analysis Project
WordStat was further utilized to compare specific narrative text, in each analyzed Excel column, with each code word. Cross-analysis of code-words with associated text was then analyzed for common themes. Thematic data was analyzed to ensure it made logical sense; supported the code word; and, did not overlap with other themes.

Finally, code words and their associated themes were aligned with HRSA’s ten clinical performance improvement categories (Attachment 2), including:

- Quality Improvement/Quality Assurance Program
- Clinical Care Guidelines/Protocols
- Education, Counseling and Other Support Provided to Patients
- Population-specific Strategies
- Clinician Capacity
- Facility Capacity
- Information Technology
- Patient Access to Low-Cost Medications and Related Supplies
- Partnerships
- Other Health Center Operational Processes
- Other

All clinical performance improvement categories were analyzed using code words and associated themes. The contributing and restricting factors were then grouped thematically to the clinical performance improvement categories to illustrate both unique and common responses influencing diabetes performance outcomes at health centers. Recommended activities were further grouped into theme by clinical performance category to identify potentially achievable strategies and best practices.

Upon completion of the analysis, a subjective review of the data was completed to review any other themes and issues regarding the process as well as to offer any potential recommendations to HRSA as it moves forward in its Diabetes Performance Analysis project.

Presentation of Data

Understanding qualitative data is critical to addressing the challenges faced by health centers nationwide in treating diabetes. The data analyzes health centers’ treatment strategies and describes the experiences of patients receiving or failing to receive health care. The qualitative
data identifies themes and integrates these themes into the greater context of human life experiences.

The results are informative to BPHC, health center administrators, and care providers. The usefulness of these results lies precisely in their subjectivity: the *subjects* are telling us, or we are finding out through more subtle observation, what matters to them.

Presentation of data will begin with a proximity plot for the analyzed columns (M, N and O) in the Excel spreadsheet focusing on contributing factors, restricting factors and recommended activities. Each proximity plot presents a visual representation of the frequency of certain words. These words were identified as code words for further analysis. Note that Column P – Performance Analysis Comments is not illustrated in the proximity plot tables as only one code word was identified for the column. That code word was ‘health’.

Following the proximity plots a summary of the data is provided, which is then followed by a detailed review of each clinical performance improvement category, including factors influencing it, recommended activities, and a discussion.

**Proximity Plot Tables**
Column M – Contributing Factors:
Column N – Restricting Factors:

Proximity plot

<table>
<thead>
<tr>
<th>Factor</th>
<th>Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD</td>
<td>ACCESS</td>
</tr>
<tr>
<td>HEALTHY</td>
<td>ACCESS</td>
</tr>
<tr>
<td>FOODS LIMITED</td>
<td>ACCESS</td>
</tr>
<tr>
<td>TRANSPORTATION</td>
<td>ACCESS</td>
</tr>
<tr>
<td>DIABETIC CARE PATIENTS</td>
<td>ACCESS</td>
</tr>
<tr>
<td>AREA LACK PROVIDERS</td>
<td>ACCESS</td>
</tr>
<tr>
<td>MEDICATIONS</td>
<td>ACCESS</td>
</tr>
<tr>
<td>HEALTH CENTER</td>
<td>ACCESS</td>
</tr>
<tr>
<td>POPULATION APPOINTMENTS</td>
<td>ACCESS</td>
</tr>
<tr>
<td>PATIENT PROVIDER STAFF</td>
<td>ACCESS</td>
</tr>
<tr>
<td>MEDICAL POOR</td>
<td>ACCESS</td>
</tr>
<tr>
<td>NUMBER DIABETES FOLLOW</td>
<td>ACCESS</td>
</tr>
<tr>
<td>HIGH BARRIERS TESTING</td>
<td>ACCESS</td>
</tr>
<tr>
<td>COST CHRONIC SERVICES</td>
<td>ACCESS</td>
</tr>
</tbody>
</table>
Column O – Recommended Activities:

Proximity plot

Follow
Increase
Patients
Diabetic
Medical
Levels
Months
Results
care
Identify
Health
Hba
Develop
Center
Community
Provider
Group
Visits
Patient
Improvement
Include
Management
Continue
Clinical
Quarterly
>>> Visit
Program
Diabetes
Implement
Team

APPOINTMENTS
Data Summary

Upon evaluation of the data, each specific indicator revealed common threads, as illustrated below:

- **Contributing Factors** – Medication was the most commonly used code word. Further analysis for themes described team-based, multi-specialty care programs for comprehensive diabetic treatment. Specifically, team-based care, including multi-specialties (i.e., integrated pharmaceutical therapy, etc.), available community resources, and utilization of diabetic educators were identified most frequently as contributing factors to improvement in diabetes outcomes. Additionally, the data referenced utilization of evidence-based programs to ensure proper medication management.

Improving access to care with both face-to-face visits with providers and medication management was identified as a contributing factor to improving HgbA1c levels in patients.

- **Restricting Factors** – Food was the most commonly used code word within the restricting factors. Food was referenced in two different capacities: a lack of food (i.e., food deserts, limited healthy food options, etc.), and knowledge deficits about making healthy food choices. Social determinants of health were also frequently identified as challenges to controlling HgbA1c levels in patients; specifically, the data referenced poor health literacy related to treatment and management of diabetes, financial barriers associated with purchasing medications, transportation barriers (especially in rural-isolated areas), and environmental safety. Additionally, many health centers reported challenges with data input which resulted in inaccurate HgbA1c results.

Access was identified as a restricting factor as well. Barriers to regular access to care, including transportation, financial, and systemic issues (i.e., scheduling issues), were reported as adversely impacting management of diabetic patients.

- **Recommended Activities** – Follow-up was the most commonly used code word. The data demonstrated that many health centers were planning to implement systems to increase access to regular appointments. The importance of follow-up care was linked with both current and newly diagnosed diabetics.
Increasing access to regular appointments was frequently identified as a recommended activity. Appointments included those with specialty providers (i.e., pharmacy, endocrinology, etc.), group visits, and community resources.

- **Performance Analysis Comments** – limited data was presented in the comments section. The information presented had to do with inaccurate HgbA1c levels being reported in EHB, as well as acknowledgement that many centers had only one to two years of data in EHB. It was also noted that not all goals or recommended activities were presented in a Specific, Measurable, Achievable, Relevant, Timely (SMART) format.

The data identified in the contributing and restricting factors suggests that increasing access to care is a primary component to improving diabetic care outcomes. Health centers identified several strategies for this including: increasing appointment times, utilization of case managers to facilitate comprehensive care, and utilization of multispecialty care to improve outcomes. Incorporating meaningful strategies to address the unique social determinants of health within the target service population may help health centers accelerate their successes in improving diabetes outcomes.

**Clinical Performance Improvement Categories**

The following data table provides a detailed review of each Clinical Performance Improvement Category. Common contributing and restricting factors to achieving the performance measure are described, as are recommended activities. At the end of each section, a brief description is provided to summarize the category findings.

**Performance Measure Description:** Percentage of patients 18-75 years of age with diabetes who had a hemoglobin A1c greater than 9.0% during the measurement period.

Note: Statistically identified code words are **bolded**; statistically associated narrative follows code words.

<table>
<thead>
<tr>
<th>Category: Quality Improvement (QI)/Quality Assurance (QA) Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition:</strong> Utilization of a structured, on-going program for planning, implementing, measuring, and reporting the impact of quality improvement interventions on patient care processes and outcomes, including having a designated individual(s) to oversee the QI/QA Program. The Plan, Do, Study, Act (PDSA) cycle is a common method used in QI/QA Programs.</td>
</tr>
<tr>
<td><strong>Contributing Factors:</strong></td>
</tr>
<tr>
<td>Health – Providers and staff work to include evidenced-based care with diabetic patients. Connect patients to social services. Utilization of information exchange systems.</td>
</tr>
</tbody>
</table>

Restricting Factors:
Health – Patients have knowledge deficit about appropriate care.
Center – Lack of adequate communication systems. Under reporting of HbA1c’s.
Appointments – Increased patient panels delay access to timely appointments and care.

Recommended Activities:
Identify – Early identification of patients with elevated HbA1c’s. Develop workflows to improve identification of diabetic patients. Improve accuracy of EMR systems to data mine HbA1c’s.
Provider – Implement quality improvement teams.

Discussion: The data supports the utilization of evidence-based practices to improve care provided to diabetic patients. The American Diabetic Association defines evidence-based care as, “the conscientious, explicit, and judicious use of clinically relevant research in making decisions about the care of individual patients”. The data supports this effort through numerous references to structured interventions for treating diabetic patients. Specifically, health centers referred to utilization of multi-specialties (i.e., pharmacology, endocrinology, diabetic educators, etc.) in the delivery of comprehensive coordinated care.

While health center staff understands the importance of evidenced-based care, they face numerous challenges with quality care provision. Specifically, centers reported patients’ knowledge deficits resulting in non-compliance with treatment regimens. Both input and data mining of accurate data in EMR systems was almost universally sited as a problem.

The data supports several QI/QA processes focused on improving diabetic care provision. Most frequently centers reported development of improved workflows allowing for early identification of at-risk patients (i.e., those who are poorly controlled, non-compliant, or newly diagnosed). Additionally, data supports the implementation of systems to improve the accuracy of data entered EMR’s. Quality improvement teams are the cornerstone for improving QI/QA programs for improved diabetic care.

Category: Clinical Care Guidelines/Protocols

Definition: Implementation of national, state, population-specific, or other clinical care guidelines or protocols by clinical staff during patient assessment and treatment. Often this will involve evidence-based clinical standards and practices, and it includes staff training on the details of the guideline or protocol.

Contributing Factors:
Health – Providers and staff work to include evidenced-based care with diabetic patients. Connect patients to social services. Utilization of information exchange systems.
Program – Internal training programs for staff to become diabetic educators.


Restricting Factors:
Diabetic – Homeless and migrant populations have limited access to care. Socio-economic status impacts care delivery.

Care – Health literacy barriers. Lack of access to technology for both providers and patients. Providers address acute vs. chronic care issue during face-to-face visits. Limited access to specialty care/enabling services.

Providers – Poor access to timely appointments for follow-up. Providers not up-to-date with current treatment regimens.

Health – Social determinants of health impact patient ability to access care.

Recommended Activities:

Patients – Incentives for patients to keep appointments.

Diabetic – Train staff.

Medical – Work-flow changes.

Health – Continuity of care.

Center – Coordinate with community resources.

Community – Work with local organizations.

Discussion: The strength of evidence-based medicine is that it moves clinical practice from anecdotal experience and expert opinion to a practice with a strong scientific foundation. It integrates clinical medicine with basic and clinical research; thus, enhancing the effectiveness and safety of diagnostic, preventive, and therapeutic measures. The data shows that providers and staff utilize internal training programs, as well as integrated multi-specialty care to implement and develop new evidence-based treatment strategies.

Social determinants of health clearly impact both care provision, and the patient’s ability to access care. Components of the physical environment include factors such as transportation, neighborhood safety, and healthy food. When barriers to these factors are present in individuals with diabetes, inadequate access to resources among such disadvantaged populations means fewer resources are available to overcome barriers resulting in magnified effects.

Development of coordinated community resources was frequently listed as a measure to improve diabetic care. Utilization of current evidence-based guidelines, coupled with integrated multi-specialty, community supported care, were frequently identified as long-term goals.

Category: Education, Counseling and Other Support Provided to Patients

Definition: Provision of educational resources, counseling or other support to patients related to health care prevention and/or disease management. Often involves a focus on self-care management options.
**Contributing Factors:**
- **Assistance** – Diabetic medication assistance programs. Pharmaceutical assistance support. PharmD staff integrates pharmaceutical therapy.
- **Program** – Resource assistants. Integrated care delivery. Internal training programs for staff to become diabetic educators.
- **Pharmacy** – Integrated team model (behavioral/primary/dental/clinical pharmacy).
- **Center** – “Lunch and Learn” programs offer access to community resources.
- **Patient** – Patient assistance programs. Patient care coordinators.
- **Diabetes** – Diabetic education programs/nutritional classes/cooking classes/wellness options. Group sessions.
- **Based** – Educate students in school-based setting about healthy food choices.

**Restricting Factors:**
- **Healthy** – Knowledge deficits with patients and providers.
- **Care** – Health literacy barriers.
- **Provider** – Lack of consistent providers.
- **Staff** – Staff turn-over (nursing and nutrition). No dietician/nutritionist/clinical diabetic educator.
- **Services** – Lack of diabetic educator.

**Recommended Activities:**
- **Patients** – Group education. Focused appointments. Education.
- **Care** – Diabetes days.
- **Health** – Care management. Diet compliance/education/exercise/medications.
- **Group** – Group education.

**Discussion:** Education, counseling and other support was predominately identified in the data. Numerous references to improving educational opportunities for patients were listed. Cultural tailoring of diabetes prevention educational materials and cultural tailoring of education in group settings may afford the means to increase patients’ knowledge of the disease for earlier diagnosis and intervention to prevent diabetes complications. Encouraging spousal support within the construct of acknowledging cultural norms may provide a means for improving diabetes outcomes and health.

Health literacy among patients was frequently identified in the data as a barrier to improved outcomes. In diabetes, health literacy is related to diabetes knowledge, self-efficacy, self-care behaviors, and glycemic control. Additionally, staff turn-over (both provider and clinical support) was identified in the data.

Development of education programs was frequently identified in the data as a strategy for improving diabetic care outcomes. Educational programs for patients focused on diet, exercise and self-management, and for providers/clinical staff focused on increasing adherence to evidence-based treatment regimens. Team-based care is especially useful in managing diseases with powerful social dimensions and diverse complications.
**Category: Population Specific Strategies**

**Definition:** Implementation of population-specific strategies to support optimal patient outcomes. Population may be defined based on BPHC’s special populations (e.g., farmworkers, homeless, etc.), age (e.g., school aged, elderly, etc.), linguistic, geographic or other characteristic shared across the population.

**Contributing Factors:**
- **Medication/medicine** – 340B access/340B pharmacies.
- **Program** – 340B medication assistance. Donated medications from nursing homes and correctional facilities.
- **Pharmacy** – Prescription assistance programs. Focus on indigent/homeless populations.
- **Patients** – Social determinants of health. Patient assistant programs. Connecting at-risk patients with community resources that address social barriers.
- **Improved/improve** – Transportation assistance.
- **Services** – Home-based patients having access to 340B.

**Restricting Factors:**
- **Limited** – Poverty/access to resources/lack of motivation/social determinants of health (unsafe neighborhood, inability to afford healthy food). Inability to take time off from work in rural areas.
- **Transportation** – Rural locations/barriers/travel/poor access to transportation. Social determinants of health (food insecurity, transportation, violence, access to safe spaces to be physically active).
- **Diabetic** – Homeless patients under reporting of HbA1c results.
- **Center** – High prevalence of psychological co-morbidities.
- **Population** – Refugee populations. Language challenges. Homelessness. Dually diagnosed HIV/DM patients have limited access to nutritional support.
- **Poor** – Dispersed geographic area. Poor access to transportation. Social-economic status.
- **Number** – Large numbers of seasonal migrant workers with inconsistent care.
- **Barriers** – Poor or no public transportation, especially in rural locations. Poor health literacy. Financial barriers.

**Recommended Activities:**
- **Patients** – Incentive programs.

**Discussion:** Population health approaches to diabetes were frequently identified in the data. Interventions involve both health care professionals and community resources. The availability of 340B pharmaceuticals and medication assistance programs were frequently identified as resources for care provision. Patient education and support, provider role changes, such as
expanding the roles of pharmacists or nurses or using multidisciplinary teams; and telemedicine were identified as resources.

Data indicates that external factors prominently affect individuals diagnosed with diabetes, in part by influencing self-management and in turn exerting lasting effects on long-term diabetes and health outcomes. For example, limited transportation in rural areas may require travel outside the local community to gain access to healthcare providers or access to healthy foods. Urban residents may face transportation barriers such as lack of sidewalks, discouraging individuals from walking as a form of physical activity. Lack of public transportation in rural or urban areas can hinder travel and access to healthcare. Lack of neighborhood safety contributes to health disparities. An example of a compounding factor is as follows: urban centers may have high crime rates with consequently fewer businesses and employment, reduced access to services including food and medical care, and diminished opportunity for outdoor activity including exercise.

Despite the numerous references to population health issues identified in both contributing and restricting factors, there were few recommended activities specific to improving population health. However, health centers frequently report the need to work with community support partners. Partners identified (although not specifically in recommended activities) include community service agencies, farmers markets, local schools, and churches.

**Category: Clinician Capacity**

**Definition:** Appropriate number and types of clinicians and appropriate utilization of clinicians (e.g., team-based care) to support optimal provision of patient care.

**Contributing Factors:**
- **Medications/medicine** – PharmD staff, together with the care team, ensure patients have access to medication. Team-based care/comprehensive care management.
- **Assistance** – PharmD staff integrate pharmaceutical therapy.
- **Program** – Resource assistants.
- **Pharmacy** – Integrated team model (behavioral/primary/dental/clinical pharmacy).
- **Center** – Use external resources (home health project, care neighborhood, vouchers for health foods). Patient navigators support diabetic patients.
- **Resources** – Access to community resources. Diabetic educators/social services/nutrition classes/intensive case management.
- **Diabetic** – “Pharmacy” program works with local farmers market to support healthy food options. Diabetic educators.
- **Improved/improve** – Prescription assistance programs. Bundle costs of dental program with primary care.
- **Health** – Increased number of providers. Access to behavioral health services. Connect to social services.

Including – Endocrinologist on-site. Team-based care.

Appointments – Increased provider capacity.

Restricting Factors:

Health – Knowledge deficit with providers.

Diabetic – Large in-flux of new patients. Provider turn-over is high.

Providers – Poor access to timely appointments for follow-up. Not enough providers. Providers not up-to-date with current treatment regimens. Delays in referrals. Provider turn-over.

Appointments – Increased patient panels delay access to timely appointments.

Provider – Lack of consistent provider/provider turn-over. Limited access to timely appointments.

Staff – High staff turn-over (nursing and nutrition). No dietician or diabetic educator.

Number – Limited access to timely appointments.

Follow- Limited access to timely appointments for follow-up.

Testing – Limited access to point-of-care testing for HbA1c’s.

Recommended Activities:

Follow-up – Ensure time/reminder/text/letter/call.

Appointment – Follow-up/reminders/scheduling/outreach.

Discussion: There are seven essential self-care behaviors in people with diabetes which predict good outcomes; namely, healthy eating, being physically active, monitoring of blood sugar, medication compliance, good problem-solving skills, healthy coping skills and risk-reduction behaviors. All these seven behaviors have been found to be positively correlated with good glycemic control, reduction of complications and improvement in quality of life. Data frequently identified utilization of multispecialty care teams to address all essential self-care behaviors.

One of the biggest challenges for health care providers today is addressing the continued needs and demands of individuals with chronic illnesses like diabetes. The importance of diabetic patients receiving regular follow-up with the health care provider is of great significance in averting any long-term complications; however, the data frequently identified this as a barrier. Not enough medical providers, high staff turn-over, limited access to timely appointments all impact comprehensive care delivery.

Health centers clearly realize the need for a multi-faceted approach to diabetic treatment. They planned for systematic, multi-pronged, integrated approaches for promoting self-care practices among diabetic patients to avert any long-term complications.

Category: Facility Capacity
**Definition:** Physical space to support optimal provision of patient care. Includes the appropriate number and/or types of clinical care spaces (e.g., patient care rooms) and the design or lay-out of clinical spaces within and across departments.

**Contributing Factors:**
No reference to facility capacity

**Restricting Factors:**
No reference to facility capacity

**Recommended Activities:**
No reference to facility capacity

**Discussion:** Although nothing was specifically identified in the data referencing facility capacity, just the fact that it was not mentioned is worth discussion. It is this author’s belief that people participating in the diabetes performance improvement activity MAY have felt this was not something that could be impacted within the suggested time-frame. Additionally, the facilitated discussion activity is largely driven by clinicians who likely have limited control over facility planning.

**Category: Information Technology**

**Definition:** Training on and use of an electronic data system to document and report patient care and outcomes. This can involve decision support features that facilitate clinicians’ follow-up of patient care.

**Contributing Factors:**
- **Improved/Improve** — EMR supported ability to capture valid data.
- **Control** — Improved validity of EMR.
- **Providers/Provide** — access to evidence-based guidelines. Information exchange programs.
- **Results** — Capture accurate data from EMR.

**Restricting Factors:**
- **Diabetic** — Under reporting of HbA1c’s. Data not entered in the correct fields in EMR.
- **Medical** — Inappropriately entering data into EMR.
- **Testing** — Delayed results when patients get tested at an outside agency and/or laboratory interface problems. Limited access to testing in rural areas or other areas when no care providers are available.

**Recommended Activities:**
- **Diabetic** — Communication. EMR training.
- **Medical** — Screen for HgbA1c’s in EMR.
- **HbA1c** — EMR access to front-line staff.
- **Management** — Front-line staff screen patients for current HbA1c in EMR.
**Discussion:** The data demonstrates that information technology significantly impacts health centers. Several health centers have launched interventions to improve the accuracy of data input. This was reportedly due to numerous factors including: implementation of data management systems within the EMR program, improving EMR systems, and staff training.

Conversely, health centers frequently reported challenges with data management and information technology. Frequently centers report inaccurate data being uploaded into EMR systems, as well as HgbA1c’s being logged into a wrong field that could not be data mined.

The data identified the importance of developing systems to ensure the accuracy of HgbA1c data was identified as a priority. Strategies included training front desk staff to screen or “scrub” a patient’s chart prior to the visit to ensure a recent overview of needed labs is available. Almost universally, health centers reported the need for more EMR training.

**Category: Patient Access to Low-Cost Medications and Related Supplies**

**Definition:** Patient access to the medications and supplies needed to support optimal clinical outcomes. HRSA’s 340B Program and pharmaceutical companies’ patient assistance programs are common methods for supporting such patient access.

**Contributing Factors:**
- **Medications/medicine** – 340B access. Contracted 340B pharmacies.
- **Program** – 340B medication assistance.
- **Cost** – Access to free glucometers and reduced cost test-strips. 340B/patient assistance programs.
- **Patients** – Free glucometers and reduced cost test-strips. Access to 340B.
- **Diabetic** – Access to 340B.
- **Improved/Improve** – Access to 340B.
- **Health** – Access to 340B.
- **Site** – Access to 340B.
- **Patient** – Access to 340B.
- **Control** – Access to 340B.
- **Support** – Access to 340B.
- **Diabetes** – Access to 340B.

**Restricting Factors:**
- **Food** – Limited access to healthy food choices/food deserts/limited income/affordable/nutritious/food insecurities.
- **Limited** – Limited access to resources to purchase supplies/medications.
- **Diabetic** – Non-compliance with treatment plans.
- **Care** – Limited access to healthy foods.
- **Patients** – Limited access to healthy foods. Access to medical supplies and/or medications.
**Medications** – Cost of medication and testing supplies prohibitive.
**Medical** – Limited access to medication and supplies.
**Testing** – Limited access to testing.

**Recommended Activities:**
**Develop** – Increase outreach.

**Discussion:** According to an American Diabetes Association 2012 Economic Costs report, a person with diabetes can expect to have annual health care costs that are approximately 2.3 times, or an additional $7,872, more than someone who does not have diabetes. Because diabetes is a complex health condition, the challenges and costs associated with diabetes care can vary significantly from person to person. Some people can use less expensive prescription medications to effectively manage their diabetes, while others must use insulin and prescription medications and test their blood glucose many times a day. Being able to obtain the medications and supplies to manage diabetes is not a luxury, it’s a necessity.¹

Access to 340B medications and medication assistance programs are critical in the care of health center patients with diabetes. The importance of this benefit was universally identified as a contributing factor to improving care delivery.

Although access to 340B programs and medication assistance programs is critical, it is not always the ultimate answer. Some diabetic medications are extremely expensive, particularly injectables and newly developed medications. Thus, despite 340B benefits, there are still barriers to medication access for some patients.

For patients without health insurance, diabetes medication costs $200 to $500 or more a month for a multi-drug regimen that could include other classes of oral medications, including newer medications, or injectable medications.² Health centers proposed outreach efforts to work with community partners in accessing medications. One center planned on working with state nursing homes and federal prisons to access discarded medications.

**Category: Partnerships**

**Definition:** Collaborations with other health centers, community providers, or other organizations to support optimal clinical outcomes.

**Contributing Factors:**
**Patients** – Walking and/or cooking program and connecting patients to community resources that address social barriers to care. Diabetic care collaboratives with local partners. Team-based care.

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¹ American Diabetes Association, “Access to Diabetes Medications and Supplies is a Necessity, not a Luxury”, 2016
² Cost Helper, The Cost of Diabetic Medications, 2018
Center – Offer access to community resources and care coordinators to support education, access to resources (transportation and affordable food vouchers).

Resources – Access to community resources and diabetic educators/social services/nutrition classes. Address psychosocial issues that contribute to poor control.

Health – Connect patients to social services and community resources.

Services – Available community resources.

Food – Connect patients to social services and educate patients regarding healthy food choices. Utilize external community partners.

Results – Information exchange systems.

Restricting Factors:
Food – Limited access to healthy food choices/food deserts.
Transportation – Rural locations/barriers/travel. Poor access to transportation. Food insecurity.
Patients – Limited access to healthy foods/medical supplies and/or medications. Limited safe/affordable exercise options.
Health – Staff not informed of population health data or analytics.
Population – Homelessness, migrant workers or not in the area the whole year. Refugee populations.
Follow-up – Limited access to transportation. Lack of patient follow-up reduces compliance.
Barriers – Limited access to transportation. Rural locations.

Recommended Activities:
Patients – Group education utilizing community partners.
Care – Diabetes day with community partners.
Center – Coordinate with community resources. Refer for dental/eye exams.

Discussion: Community-based efforts to address diabetes can take many forms, such as local coalitions focusing targeted efforts on a small population. Health centers frequently reported on collaborative efforts contributing to care delivery. Collaborations included walking programs, nutrition education, farmers markets, etc. Data clearly describes health centers coordinated efforts with community partners.

Although health centers actively partner with community resources, patients still face significant barriers within their neighborhoods. Components of the physical environment include factors such as transportation, neighborhood safety, and healthy food. When barriers to these factors are present among individuals with diabetes, inadequate access to resources among such disadvantaged populations means fewer resources are available to overcome barriers; thus, effects are magnified.
Many health centers proposed activities involving community partners. Activities included working with specialists to ensure patients had access to care when needed, as well as development of “diabetes-day” where patients could see several specialists at one time.

### Category: Other Health Center Operational Processes

**Definition:** Implementation of other health center operational processes that support optimal clinical care and outcomes (e.g., appointment scheduling, patient satisfaction assessments, or good customer service practices). Includes any related staff training.

**Contributing Factors:**
- **Medication/medicine** – Integrated care teams.
- **Assistance** – Integrated pharmaceutical therapy.
- **Program** – Donated medications from nursing homes and correctional facilities.
- **Pharmacy** – Morning huddles. Team-based care. Group sessions.
- **Patients** – Retinal machines on-site.
- **Care/medical** – Access to primary and specialty care services.
- **Improved/improve** – Uber health (provides transportation).

**Restricting Factors:**
- **Healthy** – Knowledge deficits with patients and providers.
- **Access** – Not enough providers. Access to care.
- **Providers** – Under-reporting HbA1c’s. Providers not up-to-date with treatment regimens. Providers addressing acute vs. chronic care issues.
- **Canter** – Lack of adequate communication system.
- **Provider** – Lack of consistent providers. Provider turn-over. Access to timely appointments.
- **Staff** – Staff turn-over (nurses and nutrition).
- **Number** – Limited access to timely appointments. Data entered incorrectly.
- **Follow-up** – Limited access to timely appointments for follow-up.
- **Testing** – Limited access to point-of-care testing.

**Recommended Activities:**
- **Follow-up** – Ensure timely appointments. Send reminders (test/call/letter).
- **Appointment** – Follow-up appointments. Send reminders. Improve scheduling and outreach.
- **Patients** – Incentives to keep appointments. Focused appointments. Group visits.
- **Months** – Targeted diabetic scheduling.
- **Health** – Care management use of text/letter/call to scheduled appointments.
- **Develop** – Monthly recall system.
- **Group** – Group appointments/education.
- **Visits** – Home visits.
- **Management** – Scripted language for patients. Reduce missed appointments.

**Discussion:** Although this category is addressed in many of the other Clinical Performance Improvement sections, it bears repeating. Most specifically, there were numerous references to
integration of pharmaceutical therapy. The data identified that integrated, team-based care was amplified with pharmacy participation.

Although team-based systems frequently were reported as a contributing factor, lack of personnel resources was equally reported. Provider turn-over and a lack of consistent providers all impact the health centers’ ability to ensure timely access to care.

Development of systems to ensure patients have access to timely appointments was frequently identified as an activity. This was presented frequently as increasing the number of appointment reminders to help improve patient compliance with kept appointments.

### Category: Other

**Performance Analysis Comments:**

**Health** - Data from Performance Analysis Comments (Column P) discussed challenges with UDS reporting. New grantees with no history. EMR’s not accurately mining data.

It was also noted that many of the goals were not put into the SMART format.

## Summary and Recommendations

The first year of the Diabetes Performance Analysis project was successful, with 295 health centers participating in the project during their Operational Site Visit (OSV). While clear trends and themes emerged in the process, anecdotal variations in priorities were noted between urban and rural health centers, large and small health centers, health centers with special population funding, and others. Many health centers had done considerable legwork prior to their OSV in identifying contributing and restricting factors and prioritizing action items, while other health centers had not done any preparatory work. The facilitated discussion process was generally streamlined with those sites that were better prepared; however, that preparation did not necessarily equate to an improved end product.

While it is too soon to tell if the Diabetes Performance Analysis project will result in meaningful change in diabetes outcomes among patients seen at health centers, the facilitated discussions brought an increased awareness of the impact even a small improvement in diabetes outcomes could make on the burden of disease nationwide.

As HRSA’s BPHC continues to evaluate the viability of the Diabetes Performance Analysis project, consideration should be given to the following recommendations:

- The consultants should be provided information and education to give health centers about the Performance Analysis project. While many consultants provided an overview/introduction to the reasons for the program, others simply “jumped in” to the...
discussion, without providing any context. Some health centers that did not receive basic background information appeared less engaged in the process, and simply took it as another step that needed to be accomplished during the OSV. Consideration should be given to developing a brief handout or informational brochure which the consultants could distribute at the onset of the discussion to provide a background and context for the effort.

- BPHC should consider developing or investing in qualitative and quantitative software tools which could be used to analyze the Performance Analysis project results. All project information was provided to the consultant for analysis using a large Excel spreadsheet. Without the consultant securing a program like WordStat, it would have been nearly impossible to analyze the data in a meaningful manner. If similar projects will be undertaken in the future, or if the Performance Analysis process is expanded to other chronic diseases, the utility of the investment will streamline the results and provide BPHC with data that eliminates bias and increases reliability.

With reliable assessment tools, consultants could further mine the data looking for trends and themes based upon health center size, composition, geographic location, funding type, etc. Then the report generated from the process could become increasingly meaningful with more depth, scale, and specificity based on the needs of BPHC.

- BPHC should consider being prescriptive about the years of data that are reported on the performance analysis form. While most consultants used data for the years 2014, 2015, and 2016, others used data from 2015, 2016, and 2017. The performance measurement criteria changes routinely; thus, the reliability of the report is contingent upon all health centers measuring performance using the same criteria.

- Many of the comments in the Performance Analysis Comment (Column P) section reflected that the action steps were not written using the SMART format. Consultants may need additional guidance to ensure all objectives are written in this format.

Conclusions

Diabetes is a complex and often misunderstood chronic health condition affecting nearly 30 million Americans, including approximately one out of every 11 people, and approximately 200,000 children. It is also one of the nation’s leading chronic health care crises. The American Diabetes Association’s reports that the national health care costs of diabetes exceed $245
The human costs of diabetes are measured in the horrific complications, including blindness, amputation, heart disease, kidney failure, and death. Diabetes poses a unique challenge for the HRSA Health Center Program. At least one out of every seven health center patients has a diagnosis of diabetes, with the disease disproportionately affecting Pacific Islanders, American Indian/Alaska Native, Native Hawaiian, Black/African American, and Hispanic or Latino patients. The management of patients with diabetes, like other chronic conditions, is complicated and requires care that addresses factors impacting the medical, social and behavioral needs of individuals, along with pro-active population management.

In 2017, 33 percent of health center patients’ blood sugar levels were reported as uncontrolled, which is lower than the national average of 43 percent. Disparities continue to exist across race and ethnicity in diabetes control. Poorly controlled diabetes can lead to multiple complications, poor health outcomes, and reduced quality of life. Diabetes also has many health care cost implications. Medical expenditures of people with diabetes are approximately 2.3 times higher than expected costs if they did not have diabetes in 2017. Controlling diabetes saves health care dollars. If health center patients with uncontrolled diabetes reduced their HbA1c by only 1.25 percent, there is a potential to save more than $3.44 billion over a three-year span.

Health centers are uniquely-equipped to improve diabetes outcomes. As patient-centered medical homes that integrate behavioral, oral, and primary health care and address social determinants of health, health centers can support patients with diabetes while managing co-occurring physical and behavioral conditions such as mental illness, substance use disorder (SUD), and addressing other socioeconomic challenges.

The Diabetes Performance Analysis project provides an opportunity for health centers to address the root causes of uncontrolled diabetes, ultimately leading to improved diabetes treatment and management, increased diabetes prevention efforts and reduced health disparities among the patients they serve.

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3 American Diabetes Association, “Economic Costs of Diabetes in the U.S.”, 2017
4 American Diabetes Association, “Access to Diabetes Medications and Supplies is a Necessity, not a Luxury”, 2016
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8 American Diabetes Association, “Economic Costs of Diabetes in the U.S.”, 2017
9 itch, K. B Pyenson, K Iwasaki. 2013 “Medical Claim Cost Impact of Improved Diabetes Control for Medicare and Commercially Insured Patients with Type 2 Diabetes.” J Manage Care Pharm. 19(8)