

# New Jersey Diabetes Action Plan Report

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Report to the Governor and the New Jersey Legislature on diabetes related efforts in the Department of Health, Department of Human Services, and Department of Children and Families.



## **Acknowledgements**

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The following agencies participated in the preparation of this report:

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Division of Community Health Services, Community Health and Wellness Unit  
Office of the Commissioner  
Office of Health Care Financing  
Office of Minority and Multicultural Health

### **New Jersey Department of Human Services**

Division of Medical Assistance and Health Services (DMAHS)  
Division of Aging Services

### **Department of Children and Families (DCF)**

Family and Community Partnerships  
Office of Child and Family Health

### **Rutgers University School of Nursing**

Francois-Xavier Bagnoud Center

### **American Diabetes Association (ADA)**

### **Hamilton Public Affairs (HPA)**

### **New Jersey American Association of Diabetes Educators (NJAADE)**

### **Novo Nordisk, Inc. (NNI)**

### **New Jersey Primary Care Association (NJPCA)**

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## Executive Summary

Diabetes mellitus is a chronic disease that effects the pancreas, an organ that produces a hormone - insulin - causing blood glucose to rise to above normal levels. Diabetes occurs when the body does not produce enough insulin, (known as Type 1 diabetes) or cannot use its own insulin as well as it should (known as type 2 diabetes). An estimated 29 million Americans have diabetes (9.3%). Nationally, it is the 7<sup>th</sup> leading cause of death and a leading cause of morbidity (American Diabetes Association, 2013). According to the American Diabetes Association, in 2010, over 234,000 death certificates in the United States listed diabetes as a cause or contributing cause of death. An estimated 37% of adults 20 years and older (86 million) have prediabetes (American Diabetes Association, 2013).

Diabetes is a leading cause of death in New Jersey, ranking sixth among the most common causes and accounting for at least 2,050 deaths in 2014 (New Jersey Death Certificate Database, 2014). An estimated 9.0% of New Jersey adults (626,811 residents) have diabetes (Behavioral Risk Factor Surveillance System, 2015). People over the age of 65 and minorities are disproportionately affected with higher diabetes prevalence, diabetes-related morbidity and diabetes-related mortality (Behavioral Risk Factor Surveillance System, 2015, New Jersey Uniform Billing Data 2015, New Jersey Death Certificate Database 2014). Prevalence is higher for Black, non-Hispanic adults (12.6%), when compared to White, non-Hispanic and Hispanic adults (Behavioral Risk Factor Surveillance System, 2015). People with diabetes in New Jersey suffer from many diabetes-related complications or conditions. These complications can take many forms and can be costly and life changing. In 2015, there were 3,089 diabetes-related lower limb amputations, 1,518 new cases of end-stage renal disease among patients with diabetes, and 15,337 diabetes hospitalizations among New Jersey residents (New Jersey Uniform Billing Data, 2015, Quality Insights Renal Network 3, 2014).

Diabetes constitutes not only a serious health concern for the State of New Jersey, but accounts for a far reaching financial burden. According to New Jersey FamilyCare, New Jersey's publicly funded health insurance program which includes Medicare and Medicaid recipients, the cost of care for members with diabetes and related complications accounted for over \$206 million in 2015 (NJ FamilyCare claims data, 2015). Nationally, 1 in every 3 Medicare dollars spent goes toward caring for people with diabetes and 1 in 5 health care dollars overall. This drives the cost for diabetes and prediabetes care to \$322 billion annually (American Diabetes Association, 2013).

Consider the following data and its implications:

### Diabetes Prevalence

- An estimated 9.0 % of New Jersey adults have diabetes (626,811 residents) (BRFSS, 2015)
- Diabetes prevalence is highest in the southern counties (Cumberland 12.4%, Salem 12.4% and Atlantic 11.3%) (BRFSS 2015)
- In New Jersey, Black, non-Hispanic and Hispanic adults have a higher prevalence of diabetes when compared to White, non-Hispanic adults (12.6% and 9.7% respectively vs. 8.2%) (BRFSS, 2015)
- 12% of NJ FamilyCare members 20 years and older have diabetes (115,582) (NJ FamilyCare claims data, 2015)

## Diabetes Awareness

- According to national estimates, about 37% of adults 20+ years have prediabetes<sup>1</sup> while only 8.1% of New Jersey adults have been diagnosed with the prediabetes (2014 BRFSS). This represents an increase from the previous estimate of 6.3% (2012 BRFSS).

## Diabetes Complications

- Over 15,000 New Jersey residents were hospitalized for diabetes in 2015 (New Jersey Uniform Billing Data 2015)
- Diabetes was reported as the primary cause of renal failure in 42.7% of incident end stage renal disease (ESRD) patients in New Jersey in 2014 (Quality Insights Renal Network 320, 2014)
- Over 3,000 lower limb amputations, related to diabetes were performed among residents at general acute care hospitals in New Jersey (New Jersey Uniform Billing Data 2015)
- Among NJ FamilyCare members, Diabetes and related complications accounted for over \$200 million in costs in 2015. (NJ Family Care claims data 2015)
- 11% of New Jersey women aged 18-44 years of age who had a live birth, were diagnosed with gestational diabetes (PRAMS 2013)
- According to NJ FamilyCare, in 2015, the highest total cost per member among all recipients was \$11,338 for women with gestational diabetes, followed by \$9,715 for women with pre-existing diabetes (NJ Family Care claims data 2015)

## Diabetes Deaths

- Diabetes is the sixth leading cause of death in New Jersey (New Jersey Death Certificate Database 2014)
- In 2014, 2,050 New Jersey adults died from diabetes (New Jersey Death Certificate Database 2014)
- The age-adjusted diabetes death rate (per 100,000 standard population) in New Jersey was highest among Black, non-Hispanic adults (35.6), which was more than twice that of White, non-Hispanic adults (17.7) (New Jersey Death Certificate Database 2014)

## Diabetes Management

- The proportion of New Jersey adults with diabetes who have ever taken a self-management class is about 39.2%, which is below the national estimate of 53.9%. (BRFSS 2015)

## Diabetes Acton Plan Committee Proposed Recommendations

The Diabetes Action Plan Committee (DAPC) proposes the following recommendations in accordance with the Diabetes Action Plan statute:

1. Support professional diabetes education of primary healthcare providers and their staff to promote the American Diabetes Association standards of care.
2. Ensure all state departments promote evidence-based Diabetes Self-Management Education (DSME) and Diabetes Prevention Programs (DPP), with support from external stakeholders.
  - American Diabetes Association (ADA), American Association of Diabetes Educators(AADE), Stanford-based and Centers for Disease Control(CDC)-recognized programs

3. Continue to encourage diabetes surveillance and evaluation throughout the state to monitor the impact of diabetes and interventions:
  - Guide data-driven policy development to inform, prioritize, deliver and monitor diabetes interventions at state and community levels.
  - Promote the reporting of health quality measures, such as National Quality Forum (NQF) 59 and Healthcare Effectiveness Data and Information Set (HEDIS) measures, at health systems level.
4. Encourage providers to promote and provide comprehensive diabetes prevention services:
  - Provide screening to aid in early detection of disease;
  - Communicate the results and implications of diabetes screenings with patients as part of medical record; and
  - Refer patient to evidence-based diabetes prevention education and CDC-recognized lifestyle change programs.
5. Encourage providers to promote and provide services that improve Hemoglobin A1C control and prevent complications for persons with diabetes:
  - Ensure Hemoglobin A1C testing at least twice annually;
  - Ensure that patients receive at least annual visits with a podiatrist and ophthalmologist; and
  - Refer to evidence-based diabetes self-management education (American Diabetes Association, American Association of Diabetes Educators and Stanford models)
6. Promote and maintain access to evidence-based and evidence-informed services, including comprehensive case management, for children and adults with a diagnosis of prediabetes, diabetes, or gestational diabetes.

## Introduction

### **Purpose of the Report**

In accordance with statute, N.J.S.A. §26:2-142.1 (see Appendix A), the New Jersey Department of Health (DOH), in consultation with the New Jersey Department of Children and Families (DCF) and the New Jersey Department of Human Services (DHS), is required to develop a biennial report or Diabetes Action Plan, that details the impact of diabetes mellitus in the State of New Jersey. The report is to include a set of actionable items for consideration by the Legislature, to reduce the incidence of diabetes in New Jersey, improve diabetes care and control complications associated with the disease.

### **Development of the Report**

The 2017 report is the second Diabetes Action Plan (DAP) issued by the State of New Jersey. The inaugural DAP was approved on April 1, 2016. The DAP Committee (DAPC) was convened in September 2016 to begin work on the second iteration of the report. The committee also received continued support from the National Association of Chronic Disease Directors (NACDD). In light of the fact that this is the second DAP report, original DAPC members provided summaries of their current efforts addressing diabetes in New Jersey and where applicable any progress and new initiatives that have been deployed since the first DAP was released. The goal was to display the progress towards diabetes prevention and control being accomplished by partners and detail new initiatives and procedures enacted since the first DAP was released. Building on the successful strategies used in the creation of the first report and the proposed next steps, the DAPC sought to enhance the process by adding internal and external stakeholders. The DAPC established criteria for prioritizing stakeholder involvement by identifying:

1. Individuals or groups who were involved in the development of diabetes policy and interventions
2. Individuals or groups who represented providers responsible for the care of New Jersey residents with diabetes

Using these criteria, the DAPC added several community partners to provide additional input to the report about services for diabetes in New Jersey including representatives from the American Diabetes Association (ADA), the New Jersey American Association of Diabetes Educators (NJAADE), NovoNordisk, Inc. (NNI) and the New Jersey Primary Care Association (NJPCA).<sup>1</sup>

A key goal identified by the DAPC was to enhance communication among the committee members and executive staff of DOH, DCF and DHS. In response, the DAPC set bi-weekly meetings, as sections of the report were compiled. Involvement of executive staff from DOH, DCF and DHS early in the process was critical to shape and finalize the proposed recommendations for inclusion in the report.

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<sup>1</sup> *The recommendations included in this report do not necessarily reflect the views or policy of community partners.*



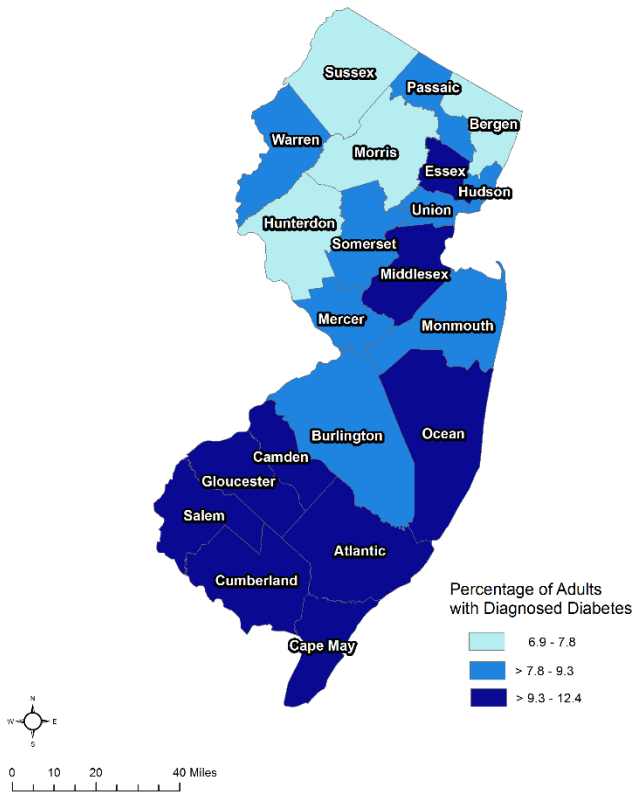
## **Understanding Diabetes**

### **Diabetes Trends**

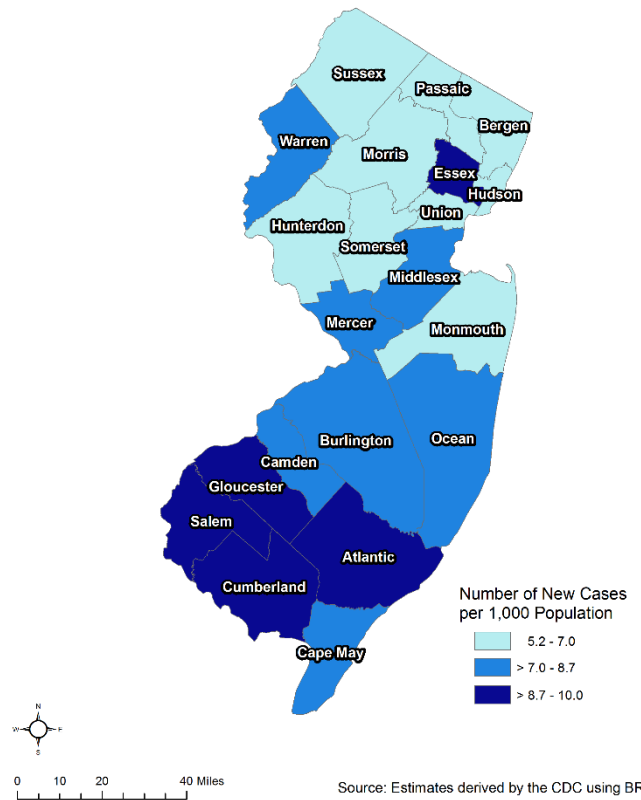
An estimated 29 million Americans have diabetes (9.3%). Nationally, it is the 7<sup>th</sup> leading cause of death and a leading cause of morbidity. According to the American Diabetes Association, in 2010, over 234,000 death certificates in the United States listed diabetes as a cause or contributing cause of death (American Diabetes Association, 2013). An estimated 9.0% of New Jersey adults (626,811 residents) have diabetes (Behavioral Risk Factor Surveillance Survey BRFSS, 2015/Table 1). Diabetes is a leading cause of death in New Jersey, ranking sixth among the most common causes and accounting for 2,050 deaths in 2014 (New Jersey Death Certificate Database, 2014/Table 20). People over the age of 65 and minorities are disproportionately affected with higher diabetes prevalence, diabetes-related morbidity and diabetes-related mortality (Behavioral Risk Factor Surveillance System, 2015; New Jersey Uniform Billing Data, 2015; New Jersey Death Certificate Database, 2014). Prevalence is higher for Black, non-Hispanic adults (12.6%), when compared to White, non-Hispanic and Hispanic adults (Behavioral Risk Factor Surveillance System, 2015/Figure 8). Individuals with diabetes in New Jersey suffer from many diabetes-related complications or conditions. In 2015, there were 1,518 new cases of end-stage renal disease among patients with diabetes and 15,337 diabetes hospitalizations among New Jersey residents (New Jersey Uniform Billing Data, 2015; Quality Insights Renal Network 3, 2014). An estimated 86 million Americans have prediabetes, or 37% of the population of adults over 20 years of age (American Diabetes Association, 2013). Prediabetes is when a person's blood sugar is higher than normal, but not high enough to be diagnosed with diabetes. Persons with prediabetes are at a higher risk for developing diabetes (Centers for Disease Control, 2016). An estimated 8.1% of New Jersey adults have been diagnosed with prediabetes (BRFSS, 2014). This represents an increase in prediabetes awareness from the previous estimate of 6.3% (BRFSS, 2012).

The highest prevalence of diabetes continues to be in the southern counties of the state. These counties also show high rates of incidence (new diabetes cases), emergency room visits and hospitalizations due to diabetes (BRFSS, 2015; New Jersey Uniform Billing Data, 2015), providing evidence that the diabetes burden is both higher and growing faster in these areas of New Jersey. Essex County, in northern New Jersey, represents another area of concern as it has high rates of diabetes prevalence and incidence similar to the southern counties of the state.

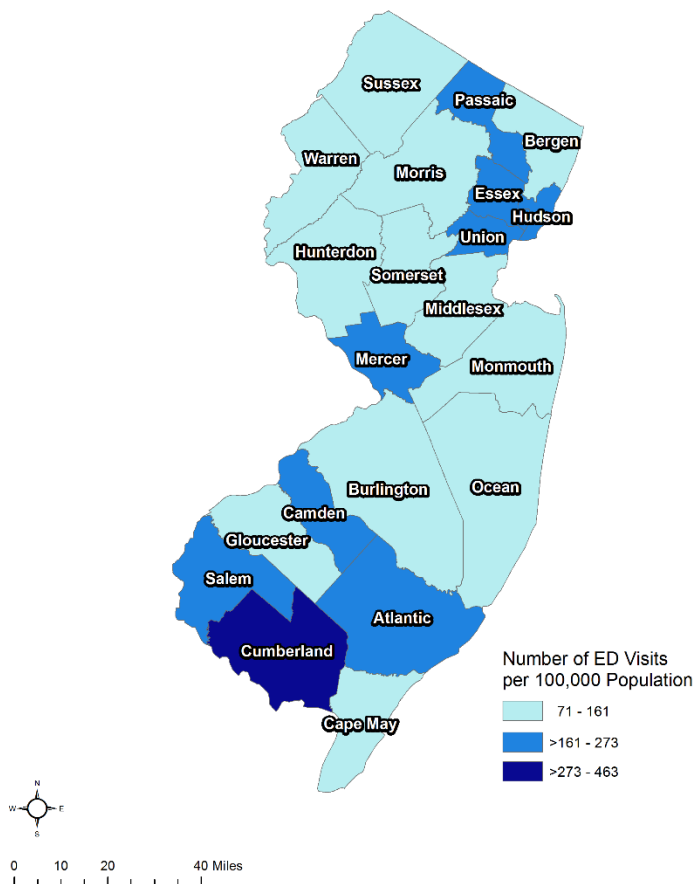
Adult Diabetes Prevalence Estimates by NJ County, 2013-2015 BRFSS



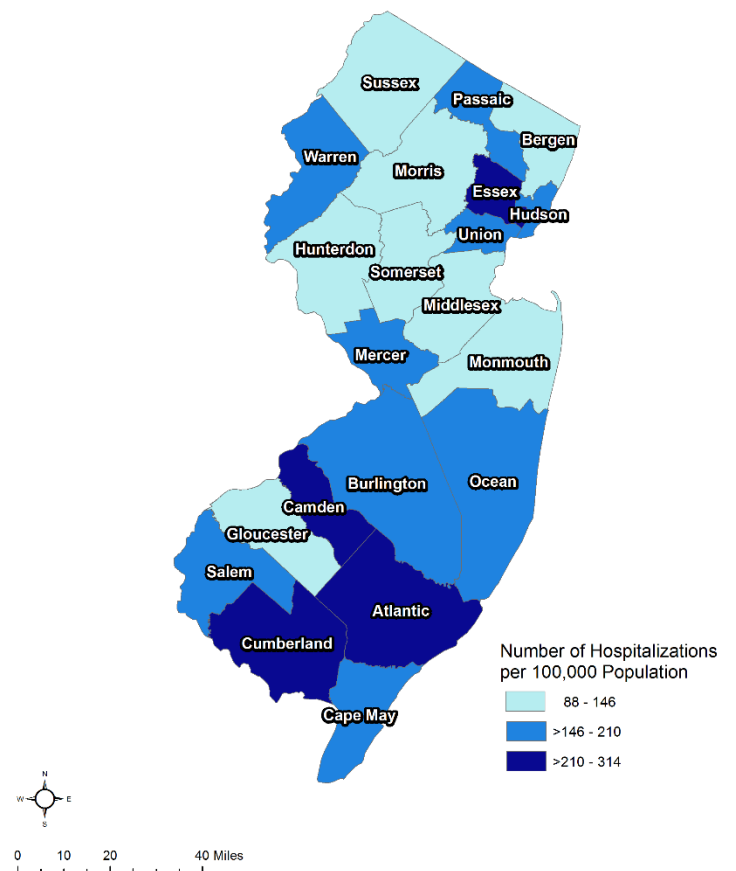
Adult Diabetes Incidence Estimates by NJ County, 2013



Diabetes ED Visits by NJ County, 2015



Diabetes Hospitalizations by NJ County, 2015



## **Diabetes Risk Factors**

Social determinants play a critical role in the prevalence of type 2 diabetes (Hills JO, Galloway JM, Goley A, et al, 2013). In New Jersey, there are vast differences in diabetes prevalence based on income and education. Diabetes decreases with household income. Households with incomes below \$15,000 show twice the estimated diabetes prevalence when compared to households with incomes over \$50,000. For households with the lowest level of income, below \$15,000, the prevalence estimate increased from 10.5% (2013) to 14.8% (2015). Prevalence similarly decreases with education level as individuals with less than a high school education have a prevalence estimate that is more than double that of individuals with a college or technical school education. In New Jersey, diabetes is most common among individuals over the age of 65 with an estimated 22.4% of adults in this age group diagnosed (BRFSS 2015).

## **Complications and Costs**

Individuals who suffer from diabetes mellitus in New Jersey are at risk for many serious complications compounding their disease burden. Heart disease, stroke, kidney failure and lower-limb amputation are associated with diabetes (CDC 2014). Over 145,000 NJ adults with diabetes (nearly 24%) were told by a doctor that the disease had affected their eyes or that they had retinopathy (BRFSS 2015).

Diabetes constitutes not only a serious health concern for the State of New Jersey but accounts for a far reaching financial burden. In 2015, there were over 15,000 emergency room visits for individuals with diabetes (New Jersey Uniform Billing Data, 2015). Nationally, 1 in every 3 Medicare dollars spent goes toward caring for people with diabetes and 1 in 5 health care dollars overall. This drives the cost for diabetes and prediabetes care annually to \$322 billion (American Diabetes Association, 2013). New Jersey FamilyCare, New Jersey's publicly funded health insurance program which includes Medicare and Medicaid recipients, reported the cost of care for members with diabetes and related complications accounted for over \$206 million in 2015 (NJ FamilyCare claims data, 2015).

## **Diabetes Control and Management**

National experts and organizations creating strategies and interventions for the care of diabetes recommend a combination of clinical and community-based interventions to address the growing burden of diabetes. There are multiple organizations that provide evidence-based information for states and community organizations to identify effective strategies and policies for use in the care of diabetes. *The Guide to Community Preventive Services* (The Community Guide) is a collection of evidence-based interventions in the prevention and care of diseases, such as diabetes and prediabetes. Strategies and interventions recommended for managing diabetes include:

- Team-based care for patients with type 2 diabetes;
- Intensive lifestyle interventions for patients with type 2 diabetes; and
- Combined diet and physical activity promotion programs to prevent type 2 diabetes among people at increased risk.

The Guide also recommends Diabetes Disease Management, Diabetes Care Management and Diabetes Self-Management Education (DSME) for effectively managing diabetes mellitus including:

## **1. Diabetes Disease Management**

Disease management is a system of coordinated healthcare interventions and communications that provide individuals the tools to assist in the care, management of disease and prevention of complications. Disease management is designed to improve the quality of clinical care for populations with the greatest disease burden and risk in order to improve clinical outcomes, such as hemoglobin A1C, blood pressure, and cholesterol. Due to strong evidence of effectiveness in improving glycemic control, the Community Preventive Services Task Force recommends the monitoring of glycosylated hemoglobin (GHb), and screening for diabetic retinopathy as components of diabetes disease management, (The Guide to Community Preventive Services, 2015). The American Diabetes Association, in the Standards of Medical Care in Diabetes, 2015, provides specific medical guidelines that healthcare providers should follow when caring for a person with diabetes mellitus. They are as follows:

- Measure blood pressure at every visit;
- Conduct comprehensive foot exams and risk assessments at every office visit, or at least annually;
- Perform a hemoglobin A1C test at least twice a year in patients who have stable glycemic control;
- Perform an A1C test quarterly in patients whose therapy has changed or who are not meeting glycemic goals;
- Assess kidney function through urine and renal function blood tests at least once a year;
- Test blood lipids (fats)—total cholesterol; LDL or low-density lipoprotein (“bad” cholesterol); HDL or high-density lipoprotein (“good” cholesterol) and triglycerides at least once a year;
- Perform a dilated eye exam once a year; and
- Provide an annual flu shot.

## **2. Diabetes Care Management**

Care management is a set of patient-centered, goal-oriented, culturally relevant and logical steps to assure that a patient receives needed services in a supportive, results driven, efficient, timely and cost-effective manner. Care management emphasizes prevention, continuity of care and coordination of care, which advocates for, and links patients to, services across providers and settings. Care management is driven by quality-based outcomes such as: improved/maintained functional status, improved/maintained clinical status, enhanced quality of life, patient satisfaction, adherence to the care plan, improved patient safety, cost savings, and patient autonomy (MCO Care Management Work Book, 2015). At a minimum, care management functions include, but are not limited to:

- Early identification of patients who have or may have special needs;
- Assessment of a patient's risk factors;
- Development of a plan of care;
- Referrals and assistance to ensure timely access to providers;

- Coordination of care actively linking the patient to providers; medical services; and residential, social, behavioral, and other support services where needed;
- Monitoring blood glucose levels;
- Continuity of care; and
- Follow-up and documentation.

### **3. Diabetes Self-Management Education (DSME)**

Diabetes Self-Management Education helps people gain the knowledge, skills, and the ability necessary for diabetes self-care. DSME supports informed decision-making, problem-solving, and active collaboration with the healthcare team. DSME held in community gathering places has shown to be an effective strategy for improving glycemic control, health status, and quality of life for adults with type 2 diabetes (The Guide to Community Preventive Services, 2015).

#### **Diabetes Prevention**

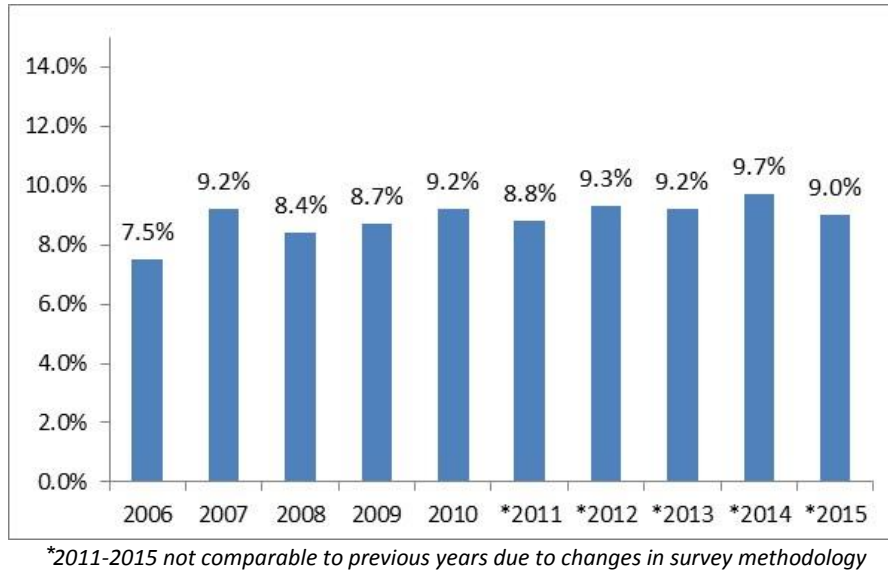
Diabetes prevention is a crucial component of addressing the burden of diabetes. An important prevention program used by multiple national and state organizations is the National Diabetes Prevention Program (DPP). This CDC-led program is a one-year evidence-based lifestyle change program that helps people with prediabetes and those at high risk for type 2 diabetes prevent or delay the onset of type 2 diabetes. The program has proven to help people with prediabetes reduce their risk of developing type 2 diabetes by 58% (National Diabetes Prevention Program, 2015). At this time, coverage of DPP by Medicare is scheduled to begin in 2018.

## Scope of Diabetes in New Jersey

### Diabetes Prevalence

An estimated 9.0% of New Jersey adults have diabetes (626,811 residents).

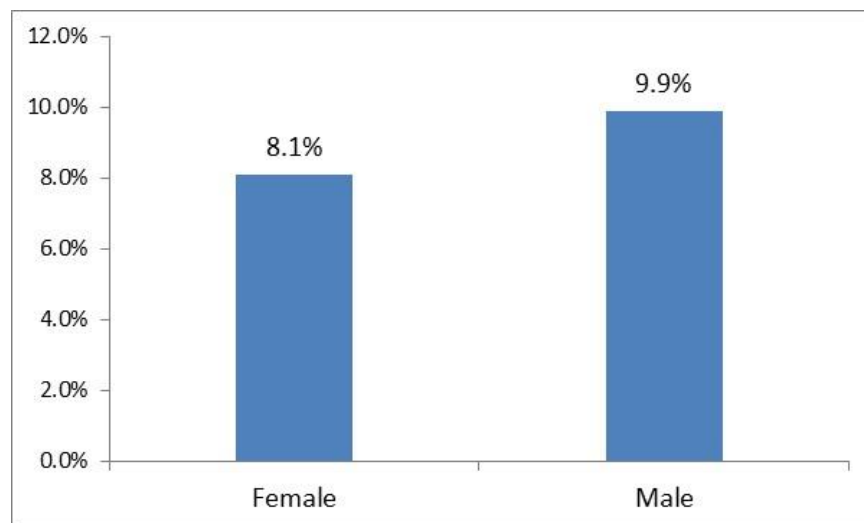
**Figure 5 – Diabetes Prevalence Estimates for NJ Adults, BRFSS 2006-2015**



#### Key Point

- Diabetes prevalence has increased over time.

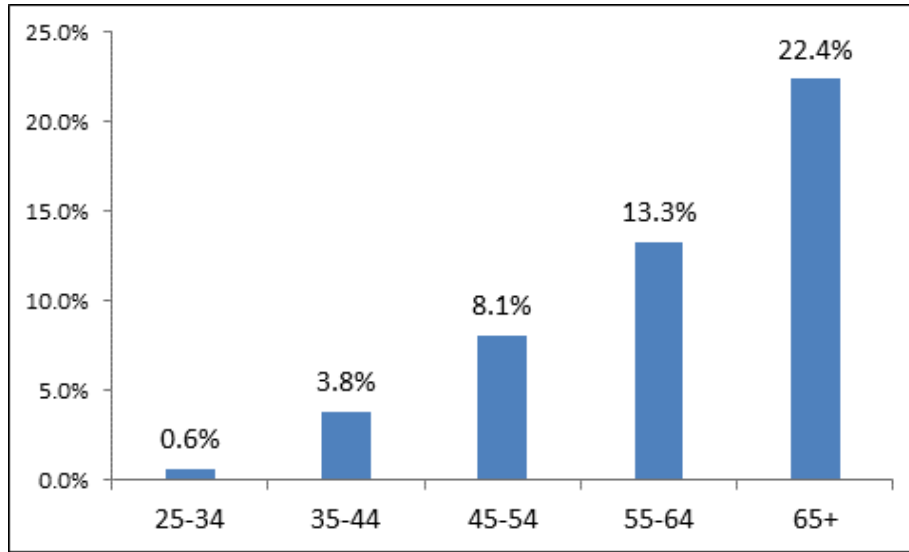
**Figure 6 - Diabetes Prevalence Estimates for NJ Adults by Gender, 2015 BRFSS**



#### Key Point

- Diabetes prevalence is higher for male adults when compared to female adults.

**Figure 7 - Diabetes Prevalence Estimates for NJ Adults by Age, 2015 BRFSS**

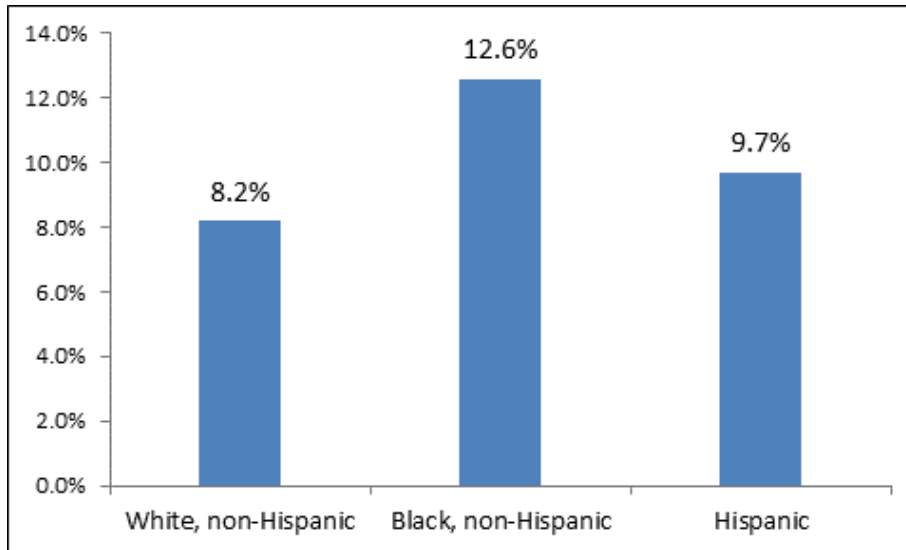


*\*Estimates are not available for adults 18-24 due to a low survey sample size*

**Key Point**

- Diabetes prevalence increases with age.

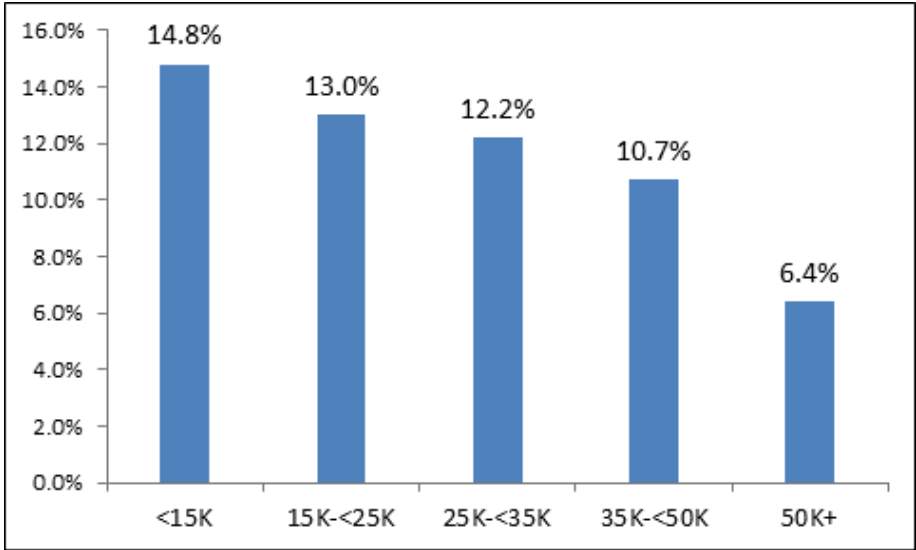
**Figure 8 - Diabetes Prevalence Estimates for NJ Adults by Race, 2015 BRFSS**



**Key Point**

- Diabetes prevalence is higher for black adults when compared to white and Hispanic adults.

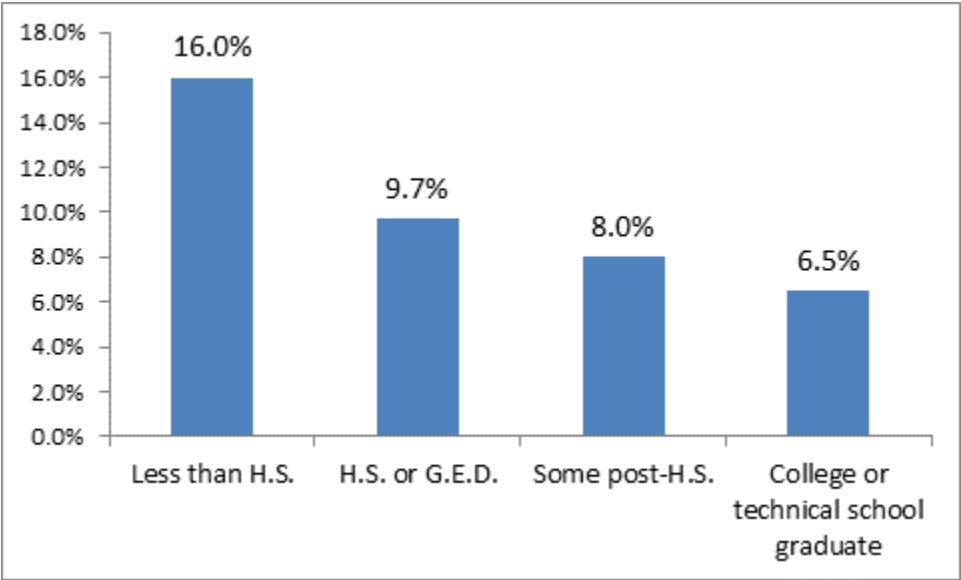
**Figure 9 - Diabetes Prevalence Estimates for NJ Adults by Household Income, 2015 BRFSS**



**Key Point**

- Diabetes prevalence decreases with increasing household income.

**Figure 10 - Diabetes Prevalence Estimates for NJ Adults by Education, 2015 BRFSS**



**Key Point**

- Diabetes prevalence is higher among adults with lower levels of education.



**Table 1 – Adult Diabetes Prevalence Estimates by NJ County, 2013-2015 BRFSS**

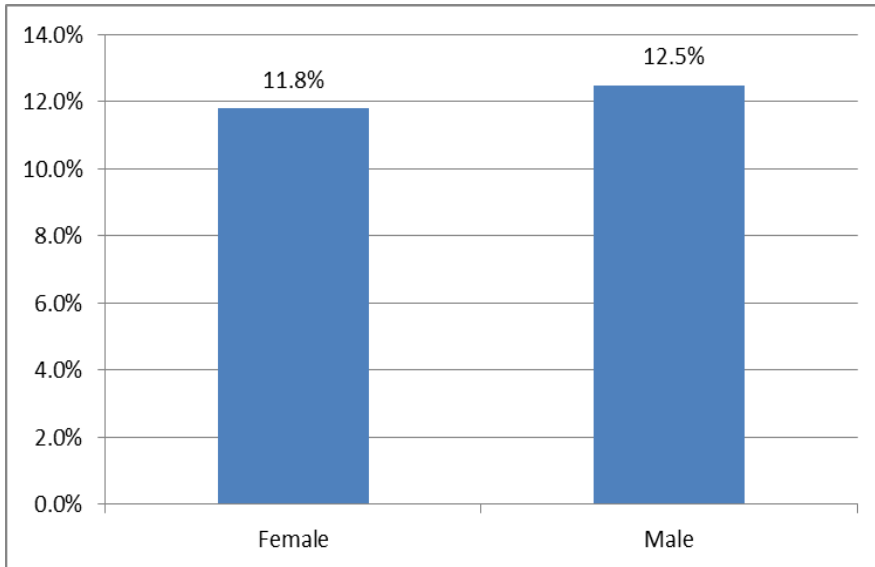
<b>County</b>	<b>Percentage*</b>	<b>Number</b>
ATLANTIC	11.3	24,269
BERGEN	7.1	51,921
BURLINGTON	8.6	30,213
CAMDEN	10.2	39,854
CAPE MAY	10.8	8,405
CUMBERLAND	12.4	14,946
ESSEX	10.7	64,681
GLOUCESTER	10.8	24,294
HUDSON	8.7	46,048
HUNTERDON	7.8	7,740
MERCER	8.9	25,899
MIDDLESEX	10.9	71,427
MONMOUTH	9.1	44,387
MORRIS	7.1	27,859
OCEAN	10.7	48,059
PASSAIC	9.3	35,776
SALEM	12.4	6,230
SOMERSET	8.1	20,886
SUSSEX	6.9	7,866
UNION	8.4	35,223
WARREN	8.7	7,249

*\*Interpret cautiously as these estimates are not adjusted for age*

**Key Point**

- Adult diabetes prevalence is highest in the southern counties of Cumberland (12.4%), Salem (12.4%), and Atlantic (11.3%). The number of adults with diabetes is highest in Middlesex County (71,427) followed by Essex County (64,681), Bergen County (51,921), and Ocean County (48,059).

**Figure 11. Prevalence of Diabetes among NJ FamilyCare Members 20 Years and Older by Gender, FFY 2015**



Source: Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.

**Key Point**

- Diabetes prevalence among adult NJ FamilyCare members is 0.7% higher in males than females.

**Table 2- Prevalence of Diabetes among NJ FamilyCare Members 20 Years and Older by Gender, FFY 2015**

GENDER	DIABETES MEMBERS 20 YEARS AND OLDER	NJ FAMILYCARE MEMBERS 20 YEARS AND OLDER	PERCENT
Female	68,641	581,570	11.8%
Male	46,941	375,889	12.5%
<b>TOTAL:</b>	<b>115,582</b>	<b>957,459</b>	<b>12%</b>

Note: "Diabetes Members" includes individuals with a paid fee-for-service claim or managed care encounter with a primary ICD-9 diagnosis code between 250.00 & 250.93.

**Table 3: Prevalence of Diabetes among NJ FamilyCare Members 20 Years and Older by Gender by County, FFY 2015**

COUNTY	FEMALES		MALES	
	MEMBERS	PERCENT	MEMBERS	PERCENT
ATLANTIC	2,572	10.6%	2,109	12.6%
BERGEN	4,588	11.2%	3,202	12.1%
BURLINGTON	2,152	9.5%	1,680	10.6%
CAMDEN	4,883	10.6%	3,610	11.6%
CAPE MAY	541	7.9%	483	8.9%
CUMBERLAND	1,603	10.5%	1,115	10.7%
ESSEX	10,913	14.1%	6,093	13.6%
GLOUCESTER	1,303	7.7%	1,063	9.8%
HUDSON	10,480	15.9%	6,469	16.6%
HUNTERDON	237	7.3%	199	7.8%
MERCER	2,460	10.8%	1,768	11.0%
MIDDLESEX	5,403	12.5%	4,165	15.1%
MONMOUTH	2,502	9.0%	1,818	9.5%
MORRIS	1,581	10.0%	1,301	11.3%
OCEAN	2,478	7.3%	2,354	9.2%
PASSAIC	7,166	13.7%	4,522	14.4%
SALEM	607	11.8%	349	11.3%
SOMERSET	1,164	10.3%	842	11.4%
SUSSEX	441	8.2%	350	8.9%
UNION	5,043	13.1%	3,083	13.5%
WARREN	524	9.1%	366	9.8%
<i>Total</i>	68,641	11.8%	46,941	12.5%

*Source: Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.*

**Key Points**

- Diabetes prevalence among adult NJ FamilyCare female members is highest in Hudson (15.9%), Essex (14.1%) and Passaic (13.7%) counties.
- Diabetes prevalence among adult NJ FamilyCare male members is highest in Hudson (16.6%), Middlesex (15.1%) and Passaic (14.4%) counties.

*Note: "Members" include individuals with a paid fee-for-service claim or managed care encounter with a primary ICD-9 diagnosis code between 250.00 & 250.93.*

**Table 4: Prevalence of Diabetes among NJ FamilyCare Members Under 20 Years of Age by County, FFY 2015**

COUNTY	MEMBERS	PERCENTAGES
ATLANTIC	116	0.3%
BERGEN	124	0.2%
BURLINGTON	80	0.2%
CAMDEN	224	0.3%
CAPE MAY	24	0.2%
CUMBERLAND	68	0.2%
ESSEX	414	0.3%
GLOUCESTER	57	0.2%
HUDSON	437	0.4%
HUNTERDON	6	0.1%
MERCER	100	0.2%
MIDDLESEX	174	0.2%
MONMOUTH	84	0.2%
MORRIS	51	0.2%
OCEAN	154	0.2%
PASSAIC	370	0.4%
SALEM	19	0.2%
SOMERSET	150	0.7%
SUSSEX	12	0.1%
UNION	352	0.5%
WARREN	20	0.2%
<b>Total</b>	<b>3,036</b>	

*Source: Actual Cost Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.*

**Key Points**

- Diabetes prevalence among members under 20 years of age in NJ FamilyCare is highest in Somerset (0.7%), Union (0.5%), Hudson (0.4%) and Passaic (0.4%) counties.
- NJ FamilyCare had approximately a 10% increase in diabetes members under 20 years of age from 2013 (2,766 members) to 2015 (3,036 members).

*Note: "Members" include individuals with a paid fee-for-service claim or managed care encounter with a primary ICD-9 diagnosis code between 250.00 & 250.93.*

**Table 5 – Estimates of Diagnosed Diabetes Incidence for New Jersey Adults, 2013**

County	Number	Percentage	Crude Rate (per 1,000 population)
Atlantic	1,751	3.8	9.5
Bergen	4,040	8.8	6.2
Burlington	2,395	5.2	7.7
Camden	2,994	6.5	8.7
Cape May	561	1.2	8.2
Cumberland	1,038	2.3	10.0
Essex	4,995	10.9	9.6
Gloucester	1,807	3.9	9.4
Hudson	3,050	6.6	6.4
Hunterdon	469	1.0	5.2
Mercer	2,040	4.4	8.1
Middlesex	4,659	10.1	8.2
Monmouth	3,039	6.6	7.0
Morris	2,097	4.6	6.1
Ocean	3,158	6.9	8.1
Passaic	2,298	5.0	6.8
Salem	419	0.9	9.6
Somerset	1,562	3.4	6.9
Sussex	696	1.5	6.9
Union	2,389	5.2	6.4
Warren	541	1.2	7.3
	45,998	100.0	6.9

Source: Estimates derived by the Centers for Disease Control and Prevention using BRFSS. Available: <https://www.cdc.gov/diabetes/data/countydata/countydataindicators.html>

**Key Point**

- The 2013 estimated diabetes incidence rate ranged by county from 5.2 cases per 1,000 population (Hunterdon) to 10.0 cases per 1,000 population (Cumberland).

## **Prediabetes Awareness**

According to national estimates, about 37% of adults 20+ years have prediabetes while only 8.1% of New Jersey adults have been diagnosed with the prediabetes (BRFSS 2014). This represents an increase from the previous estimate of 6.3% (BRFSS 2012).

## **Diabetes Preventative Care Practices**

**Table 6 – Preventative Care among Adults with Diabetes, 2015 BRFSS NJ and United States**

<b>Preventative Care Practice</b>	<b>New Jersey</b>	<b>United States*</b>
Had Professional Foot Exam in Prior Year	69.2%	71.9%
Had Annual Dilated Eye Exam in Prior Year	70.3%	69.0%
Had 2+ A1C Tests in Prior Year	75.9%	74.1%
Performs Daily Self Foot Exams	60.5%	58.5%
Performs Daily Self Blood Glucose Monitoring	61.2%	61.7%
Had Flu Vaccine in Prior Year	55.5%	56.2%
Ever Had Pneumonia Shot	57.4%	61.1%
Ever took a Self-Management Class	39.2%	53.9%

*\* 38 States*

### **Key Point**

- The proportion of New Jersey adults with diabetes who have ever taken a self-management class is about 39.2%, which is below the national estimate of 53.9%. It is unknown whether this percentage of adults attended a recognized course such as an American Diabetes Association (ADA)-recognized, American Association of Diabetes Educators (AADE)-accredited, or Stanford licensed Diabetes Self-Management Education program. During 2012-2014, only about 4.3% of people with diabetes were engaged with these programs in New Jersey.

## **Diabetes Complications**

In 2015:

- About 145,625 adults with diabetes were told by a doctor that the disease affected their eyes or that they had retinopathy, representing 23.9% of New Jersey adults with Diabetes (BRFSS, 2015).
- About 3,089 lower limb amputations related to diabetes were performed among residents at general acute care hospitals in New Jersey (New Jersey Uniform Billing Data, 2015).
- Diabetes was reported as the primary cause of renal failure in 42.7% of incident end stage renal disease (ESRD) patients in New Jersey during 2014 representing 1,518 resident cases in one year alone (Quality Insights Renal Network 3 Annual, 2014).

## **Diabetes Hospitalizations**

**Table 7 – Hospital Discharges for Diabetes Among NJ Residents by Diagnosis, 2015**

<b>Primary Diabetes ICD-9-CM Diagnosis Code</b>	<b>Number</b>	<b>Percent</b>	<b>Average Stay in Days</b>
(250.0) Without mention of complication	1,435	9.4	3.2
(250.1) Ketoacidosis	4,091	26.7	3.7
(250.2) Hyperosmolarity	760	5.0	4.3
(250.3) With other coma	62	0.4	7.7
(250.4) With renal manifestations	397	2.6	7.4
(250.5) With ophthalmic manifestations	22	0.1	3.6
(250.6) With neurological manifestations	1,793	11.7	5.2
(250.7) With peripheral circulatory disorders	1,669	10.9	9.9
(250.8) With hypoglycemic manifestations	5,062	33.0	6.4
(250.9) Unspecified complications	46	0.3	2.9
	15,337	100.0	5.5

*\*Excludes out of state hospitalizations*

### **Key Point**

- The most common diagnosis reported for 2015 diabetes hospitalizations was diabetes with hypoglycemic manifestations (33.0%) followed by diabetes with ketoacidosis (26.7%).

**Table 8 – Hospital Discharges for Diabetes among NJ Residents  
by County of Residence, 2015**

County	Number	Percent	Rate (per 100K population)
Atlantic	641	4.2	234
Bergen	968	6.3	103
Burlington	934	6.1	207
Camden	1,259	8.2	246
Cape May	187	1.2	197
Cumberland	489	3.2	314
Essex	1,892	12.3	237
Gloucester	427	2.8	146
Hudson	1,417	9.2	210
Hunterdon	113	0.7	90
Mercer	748	4.9	201
Middlesex	1,178	7.7	140
Monmouth	914	6.0	145
Morris	450	2.9	90
Ocean	1,050	6.9	178
Passaic	875	5.7	171
Salem	126	0.8	196
Somerset	293	1.9	88
Sussex	200	1.3	139
Union	1,006	6.6	181
Warren	170	1.1	159

*\*Excludes out of state hospitalizations*

**Key Point**

- The 2015 diabetes hospitalization rate ranged by county from 314 hospitalizations per 100,000 population (Cumberland) to 88 hospitalizations per 100,000 (Somerset).



**Table 9 – Hospital Discharges for Select Chronic Conditions among NJ Residents by Diagnosis, 2015**

Primary Diagnosis	Number	Rate (per 100K population)	Average Stay in Days
Diabetes	15,337	171	5.5
Adult Asthma	8,371	120	4.2
Child Asthma	2,896	145	2.3
Chronic Obstructive Pulmonary Disease (COPD)	16,264	182	5.1
Ischemic Heart Disease	30,623	342	4.8
Heart Failure	30,903	345	6.0
Hypertension	10,733	120	5.4
Chronic Kidney Disease	19,560	218	5.9
Stroke	19,603	219	5.8

*\*Excludes out of state hospitalizations*

**Key Point**

- The average length of stay for diabetes hospitalizations in 2015 was 5.5 days, which is longer than the corresponding average for adult asthma, child asthma, chronic obstructive pulmonary disease (COPD), ischemic heart disease, and hypertension hospitalizations.

**Table 10 – Hospital Discharges for Chronic Conditions among NJ Residents With and Without Diabetes, 2015**

Primary Diagnosis	With Diabetes			Without Diabetes		
	Number	Percent	Average Stay in Days	Number	Percent	Average Stay in Days
Ischemic Heart Disease	12,854	42.0	5.3	17,769	58.0	4.5
Heart Failure	14,207	46.0	6.2	16,696	54.0	5.9
Hypertension	4,756	44.3	6.1	5,977	55.7	4.9
Chronic Kidney Disease	7,873	40.3	6.2	11,687	59.8	5.7
Stroke	7,044	35.9	5.7	12,559	64.1	5.9

*\*Excludes out of state hospitalizations*

**Key Point**

- A high percentage of residents, who were hospitalized for other chronic conditions in 2015, also had diabetes. For example, 46.0% of all hospitalizations for heart failure were for residents who also had diabetes. Heart failure hospitalizations among residents with diabetes had an average stay of 6.2 days and this compares to 5.9 days for heart failure hospitalizations among residents without diabetes. For ischemic heart disease, hypertension, and chronic kidney disease hospitalizations, length of stay was also longer for residents with diabetes.

**Table 11: Comparison of Overall and Per Member Diabetes Costs and Other Chronic Disease Costs among NJ FamilyCare Members, FFY 2015**

CHRONIC CONDITIONS	TOTAL MEMBERS WITH CHRONIC CONDITION	TOTAL COST PER CHRONIC CONDITION	COST PER MEMBER	PERCENTAGE
Asthma	119,472	\$77,799,137	\$651	7%
Congestive Heart Failure	58,217	\$219,066,121	\$3,763	21%
Coronary Heart Disease	41,566	\$124,850,546	\$3,004	12%
COPD and Allied Conditions	55,941	\$69,812,499	\$1,248	7%
Chronic Back	123,738	\$55,484,681	\$448	5%
Diabetes Mellitus Complications only	93,989	\$91,655,079	\$975	9%
Hypertension	195,087	\$361,010,162	\$1,851	35%
Osteoarthritis	7,971	\$19,437,942	\$2,439	2%
Overweight/Obesity	46,086	\$23,243,383	\$504	2%
<b>Total:</b>		<b>\$1,042,359,549</b>		<b>100%</b>

*Source: Actual Cost Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.*

### Key Points

- NJ FamilyCare spent more than \$1 billion for these chronic conditions, 35% of which was associated with hypertension, and 21% with congestive heart failure, while diabetes mellitus complications were only associated with 9% of these costs.
- Total cost of diabetes mellitus complications decreased 22% from 2013 (\$118,128,016) to 2015 (\$91,655,079).

*Note: The 2013 data was modified from the first DAP report to exclude the capitation rate, as has been done with the 2015 data, to more accurately reflect true costs.*

## Diabetes Emergency Department Visits

**Table 12 – Emergency Department (ED) Visits for Diabetes  
Among NJ Residents by Diagnosis, 2015**

Primary Diabetes ICD-9-CM Diagnosis Code	Number	Percent
(250.0) Without mention of complication	8,781	57.5
(250.1) Ketoacidosis	387	2.5
(250.2) Hyperosmolarity	91	0.6
(250.3) With other coma	27	0.2
(250.4) With renal manifestations	63	0.4
(250.5) With ophthalmic manifestations	78	0.5
(250.6) With neurological manifestations	1,063	7.0
(250.7) With peripheral circulatory disorders	39	0.3
(250.8) With hypoglycemic manifestations	4,491	29.4
(250.9) Unspecified complications	250	1.6
	15,270	100.0

*\*Excludes out of State ED visits and visits that result in hospital admission*

### **Key Point**

- In 2015, the most common diagnosis reported for diabetes ED visits was diabetes without mention of complication (57.5%) followed by diabetes with hypoglycemic manifestations (29.4%).

**Table 13 – ED Visits for Diabetes Among NJ Residents by County of Residence, 2015**

County	Number	Percent	Crude Rate (per 100K population)
Atlantic	699	4.6	255
Bergen	856	5.6	91
Burlington	618	4.1	137
Camden	1,127	7.4	221
Cape May	122	0.8	129
Cumberland	722	4.7	463
Essex	2,174	14.2	273
Gloucester	470	3.1	161
Hudson	1,305	8.6	193
Hunterdon	105	0.7	84
Mercer	950	6.2	256
Middlesex	1,010	6.6	120
Monmouth	936	6.1	149
Morris	354	2.3	71
Ocean	869	5.7	148
Passaic	1,138	7.5	223
Salem	133	0.9	207
Somerset	241	1.6	72
Sussex	194	1.3	135
Union	1,092	7.2	196
Warren	155	1.0	145

*\*Excludes out of State ED visits and visits that result in hospital admission*

**Key Point**

- The 2015 diabetes ED visit rate ranged by county from 463 visits per 100,000 population (Cumberland) to 71 visits per 100,000 (Morris).

**Table 14 – ED Visits for Chronic Conditions Among NJ Residents by Diagnosis, 2015**

Primary Diagnosis	Number	Rate (per 100K population)
Diabetes	15,270	170
Adult Asthma	34,916	502
Child Asthma	18,287	915
COPD	24,642	275
Ischemic Heart Disease	5,204	58
Heart Failure	3,971	44
Hypertension	23,675	264
Chronic Kidney Disease	4,701	52
Stroke	5,941	66

*\*Excludes out of State ED visits and visits that result in hospital admission*

**Key Point**

- The diabetes ED visit rate in 2015 was 170 visits per 100,000 population, which is higher than the corresponding rate for ischemic heart disease, heart failure, chronic kidney disease, and stroke.

**Table 15 – ED Visits for Chronic Conditions Among NJ Residents With and Without Diabetes, 2015**

Primary Diagnosis	With Diabetes		Without Diabetes	
	Number	Percent	Number	Percent
Ischemic Heart Disease	1,375	26.4	3,829	73.6
Heart Failure	1,386	34.9	2,585	65.1
Hypertension	3,830	16.2	19,845	83.8
Chronic Kidney Disease	1,101	23.4	3,600	76.6
Stroke	1,372	23.1	4,569	76.9

*\*Excludes out of State ED visits and visits that result in hospital admission*

**Key Point**

- A high percentage of residents, who visited the ED for other chronic conditions in 2015, also had diabetes. For example, 34.9% of ED visit for heart failure in 2015 were among residents with diabetes.

**Table 16: Total Service Cost for Diabetes and Related Complications  
for NJ Family Care Members, FFY 2015**

DIAGNOSIS CODE ICD-9	TOTAL MEMBER COST	MEMBERS	PERCENT OF COST
DIABETES MELLITUS WITHOUT COMPLICATION	\$122,707,065	136,116	59%
DIABETES MELLITUS WITH KETOACIDOSIS	\$11,541,423	3,834	6%
DIABETES MELLITUS WITH HYPEROSMOLARITY	\$1,992,837	1,092	1%
DIABETES MELLITUS WITH OTHER COMA	\$1,073,371	199	1%
DIABETES MELLITUS WITH RENAL MANIFESTATIONS	\$2,065,369	2,664	1%
DIABETES MELLITUS WITH OPHTHALMIC MANIFESTATIONS	\$13,345,216	19,751	6%
DIABETES MELLITUS WITH NEUROLOGICAL MANIFESTATIONS	\$16,478,141	31,646	8%
DIABETES MELLITUS WITH PERIPHERAL CIRCULATORY DISORDERS	\$8,088,358	7,297	4%
DIABETES MELLITUS WITH OTHER SPECIFIED MANIFESTATIONS	\$24,728,382	17,811	12%
DIABETES MELLITUS WITH UNSPECIFIED COMPLICATION	\$4,633,916	4,682	2%
<b>TOTAL:</b>	<b>\$206,654,078</b>		<b>100%</b>

*Source: Actual Cost Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.*

**Key Point**

- NJ FamilyCare had approximately an 8% decrease in total cost for diabetes related costs from 2013 (\$223,937,248) to 2015 (\$206,654,078).

*Notes: "Members" include individuals with a paid fee-for-service claim or managed care encounter with a primary ICD-9 diagnosis code between 250.00 & 250.93.*

*The 2013 data was modified from the first DAP report to exclude the capitation rate, as has been done with the 2015 data, to more accurately reflect true costs.*

**Table 17: Total Cost of Diabetes among NJ FamilyCare Members by County and Per Member, FFY 2015**

COUNTY	MEMBER	COST PER COUNTY	COST PER MEMBER
ATLANTIC	5,104	\$5,057,501	\$991
BERGEN	8,780	\$12,446,851	\$1,418
BURLINGTON	4,788	\$6,229,274	\$1,301
CAMDEN	10,512	\$12,200,279	\$1,161
CAPE MAY	1,277	\$1,503,943	\$1,178
CUMBERLAND	3,503	\$4,263,653	\$1,217
ESSEX	20,589	\$20,523,700	\$997
GLOUCESTER	2,938	\$2,562,436	\$872
HUDSON	20,957	\$20,872,816	\$996
HUNTERDON	513	\$450,320	\$878
MERCER	5,184	\$6,439,130	\$1,242
MIDDLESEX	11,074	\$16,167,590	\$1,460
MONMOUTH	5,083	\$6,931,473	\$1,364
MORRIS	3,395	\$4,052,040	\$1,194
OCEAN	5,529	\$6,520,583	\$1,179
PASSAIC	15,513	\$14,592,620	\$941
SALEM	1,270	\$1,617,583	\$1,274
SOMERSET	2,545	\$4,141,201	\$1,627
SUSSEX	956	\$1,618,074	\$1,693
UNION	10,009	\$11,144,053	\$1,113
WARREN	1,111	\$2,172,675	\$1,956
<b>Total</b>	<b>140,630</b>	<b>\$161,507,794</b>	<b>\$991</b>

*Source: Actual Cost Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.*

**Key Points**

- Diabetes total cost is highest in Hudson (\$20,872,816), followed by Essex (\$20,523,700) and Middlesex (\$16,167,590).
- Diabetes highest total per member cost is Warren (\$1,956), followed by Sussex (\$1,693), and Somerset (\$1,627) counties.

*Notes: "Members" include individuals with a paid fee-for-service claim or managed care encounter with a primary ICD-9 diagnosis code between 250.00 & 250.93.*

*The 2013 data was modified from the first DAP report to exclude the capitation rate, as has been done with the 2015 data, to more accurately reflect true costs.*

## **Diabetes and Pregnancy**

- Approximately 11.0% of New Jersey women 18-44 years who had a live birth were diagnosed with gestational diabetes (PRAMS 2013)
- Approximately 2.8% of New Jersey women 18-44 years who had a live birth were diagnosed with Type I or Type II diabetes prior to pregnancy (PRAMS 2013)

**Table 18 – Vaginal Deliveries and C-Sections Performed by Maternal Diabetes Status, 2015**

	Vaginal Delivery		Cesarean Section	
	Number	Percent	Number	Percent
With Gestational Diabetes	3,358	49.7%	3,403	50.3%
With Diabetes Complicating Pregnancy	306	37.1%	518	62.9%
<b>All Maternal Delivery Stays</b>	<b>57,905</b>	<b>62.5%</b>	<b>34,735</b>	<b>37.5%</b>

### **Key Point**

- Among 2015 maternal delivery hospital stays, both women with gestational diabetes and women with pre-existing diabetes that complicated pregnancy had a higher proportion of cesarean section births relative to all maternal delivery hospital stays.



**TABLE 19: COST OF NJ FAMILYCARE PREGNANT WOMEN WITH  
PRE-EXISTING DIABETES COMPARED TO GESTATIONAL DIABETES,  
FFY 2015**

Pregnancy Complications	Member Count	Total Cost	Average Cost Per Member	Grand Total Cost Per Member
Pregnant Women with Pre-existing Diabetes	1,661	\$1,451,419	\$874	\$9,715
Pregnant Women with Gestational Diabetes	4,136	\$10,323,337	\$2,496	\$11,338

Member Count of Pregnancy	Total Cost	Cost Per Member
55,996	\$495,090,872	\$8,842

*Source: Actual Cost Paid fee-for-service claims and managed care encounters for services provided to NJ FamilyCare eligible individuals between 10/1/2014 and 9/30/2015.*

**Key Point**

- Among pregnant NJ FamilyCare members, the highest total cost per member in FFY 2015 was \$11,338 for women with gestational diabetes, followed by \$9,715 for women with pre-existing diabetes.

*Notes: "Members" include individuals with a paid fee-for-service claim or managed care encounter with a primary ICD-9 diagnosis code between 250.00 – 250.93, 648.80 – 648.84 and V22.00 - V23.9 & V91.00 - V91.99.*

*The 2013 data was modified from the first DAP report to exclude the capitation rate, as has been done with the 2015 data, to more accurately reflect true costs.*

## Diabetes Deaths

- Diabetes is the sixth leading cause of death in NJ and seventh in the United States.

**Table 20 – Diabetes Deaths Among NJ Residents, 2014**

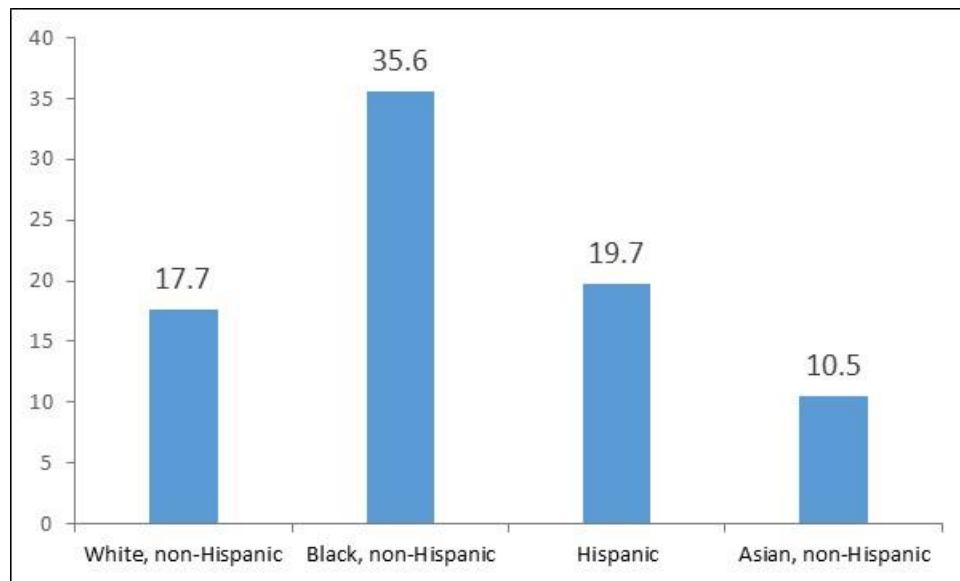
County	Number	Percent	Crude Rate (per 100K population)	Age-Adjusted Rate (per 100K standard population)
ATLANTIC	3373	3.6%	26.5	21.6
BERGEN	161	7.9%	17.3	13.1
BURLINGTON	109	5.3%	24.2	19.1
CAMDEN	142	6.9%	27.8	23.8
CAPE MAY	29	1.4%	30.4	17.7
CUMBERLAND	56	2.7%	35.6	32.4
ESSEX	207	10.1%	26.0	25.4
GLOUCESTER	72	3.5%	24.8	21.6
HUDSON	156	7.6%	23.3	26.6
HUNTERDON	24	1.2%	19.1	15.2
MERCER	81	4.0%	21.8	19.5
MIDDLESEX	166	8.1%	19.8	18.0
MONMOUTH	141	6.9%	22.4	17.7
MORRIS	79	3.9%	15.8	12.5
OCEAN	156	7.6%	26.6	17.0
PASSAIC	119	5.8%	23.3	21.9
SALEM	22	1.1%	34.0	27.3
SOMERSET	79	3.9%	23.8	20.4
SUSSEX	29	1.4%	20.0	17.4
UNION	119	5.8%	21.5	20.0
WARREN	30	1.5%	28.1	20.8

*\*NJSHAD Data Source: NJ Death Certificate Database, Office of Vital Statistics and Registry, NJ Department of Health  
NJSHAD Population Estimates: NJ Department of Labor and Workforce Development, State Data Center*

### Key Point

- In 2014, a total of 2,050 adults died from diabetes. The age-adjusted death rate ranged from 12.5 deaths per 100,000 standard population (Morris County) to 32.4 deaths per 100,000 standard population (Cumberland County).

**Figure 12 – New Jersey Age-Adjusted Diabetes Death Rate by Race/Ethnicity, 2014**



**Key Point**

- Age-adjusted diabetes death rate is highest for black followed by Hispanic residents.

## **Progress Towards Diabetes Prevention and Control**

The first DAP report contained several proposed recommendations (see Appendix B) and next steps for the State of New Jersey to address the burden of diabetes. The recommendations focused primarily on increasing diabetes screening, increasing provider patient communication and linking people at-risk for, or with, diabetes to educational resources. Since the development of the first DAP, the Department of Health, the Department of Children and Families, the Department of Human Services and many other organizations in New Jersey have made strides in the areas of prevention, early detection, and evidence-based management of diabetes in line with the recommendations set forth in the plan.

### **Department of Children and Families**

The New Jersey Department of Children and Families (DCF) Child Health Unit and the NJ evidence-based Home Visitation Program provide services to children and family members diagnosed with diabetes. These programs have adopted new protocols that increase reach to individuals with diabetes.

#### ***Child Health Unit***

Within DCF's Division of Child Protection and Permanency (DCPP), healthcare case management is provided by Child Health Unit (CHU) nurses. CHU nurses increase awareness through health education and guidance to children, caregivers and caseworkers. Their work with children and caregivers directly impacts the family, and their guidance to caseworkers expands the workforce to address the impact of diabetes on the community. When children enter out-of-home care, they receive a Comprehensive Medical Exam (CME). Health Care Providers (HCP) are encouraged to measure the child's height, weight and BMI to screen for diabetes for children entering out of home placement. A copy of the child CME is sent to a CHU nurse. Nurses from the CHU document these parameters in New Jersey's Child Welfare Statewide Automated Child Welfare Information System (SACWIS). Providers are encouraged to share the results of the screening with the caregiver and child at the time of the exam. Overweight, obese, prediabetic, and diabetic children receive guidance on nutrition and activity from their health care provider. CHU nurses reinforce this guidance through additional education of children and caregivers on healthy eating choices and activity. CHU nurses are aware of the evidenced-based resources in their areas. CHU nurses advocate for children to see nutritionists and attend activity programs within the community.

#### ***NJ Evidence-based Home Visitation (NJ EBHV) Program***

The NJ Evidence-based Home Visitation (NJ EBHV) Program within the Division of Family and Community Partnerships (FCP), Office of Early Childhood Services, is committed to improving maternal and child health, child and family well-being, eliminating health disparities and preventing child neglect and abuse. The NJ EBHV Program utilizes research and medically based curricula to educate families about the potential risks and resources available to maternal and child health related to diabetes and gestational diabetes. Beginning at pregnancy, the program provides families that have members diagnosed with type 2 diabetes or gestational diabetes referrals to local services that provide evidence-based diabetes self-management education, training, and services. Evidence-based diabetes prevention education and CDC-

recognized lifestyle change programs are also made available to families that have a member diagnosed with pre-diabetes or those at high risk for type 2 diabetes.

The EBHV Program currently funds three evidence-based home visiting models. While diabetes management is not a primary function of home visiting, one of these three models employs nurse home visitors who track data for gestational diabetes mellitus (GDM) and help to facilitate access to prenatal care to ensure that women with GDM receive appropriate medical care and adhere to health and nutritional recommendations. The Nurse Family Partnership (NFP) program, managed by FCP’s Office of Early Childhood Services, had 975 families enrolled in FY16 (per the NFP data system). Of these, seventeen women (1.7%) were identified as having GDM.

**Table 21 - DCF Family & Community Partnerships and Nurse Family Partnership (NFP) Programs, 2015-2016**

Program	Population Served	Participants with Diabetes
Family & Community Partnerships (FCP) Home Visiting - Nurse Family Partnership (NFP)	First-time pregnant women enrolled during the second trimester of pregnancy and participate until the child reaches age 2.	17 pregnant (1.7%) women enrolled in NFP had a report of GDM

Source: DCF New Jersey NFP program data, 2015-2016

### **Department of Health**

The mission of the Department of Health’s Community Health and Wellness is to control and prevent disease through leadership efforts that address evidence-based policies, systems and environmental change. The Diabetes Prevention and Control Program (DPCP) addresses diabetes in New Jersey through the support of population-based and evidence-based strategies to increase community-clinical linkages and health systems interventions to support the prevention and management of diabetes.

### ***Community-Clinical Linkages***

The New Jersey Diabetes Prevention and Control Program (DPCP) continues to fund several Diabetes Resource Coordination Centers (DRCCs). Supported by federal funding from the Centers of Disease Control and Prevention (CDC), the DRCCs partner with healthcare systems and providers to create policies to refer patients diagnosed with diabetes into evidence-based diabetes self-management education, including the American Diabetes Association (ADA), American Association of Diabetes Educators (AADE), and Stanford model programs. The DRCCs also refer patients at risk for diabetes into evidence-based diabetes prevention programs, including the National Diabetes Prevention Program (NDPP).

The DPCP also partnered with NJ211, the statewide non-emergency, information call center and website, to 1) promote ADA-recognized, AADE-accredited and/or Stanford licensed diabetes self-management education, along with NDPP-accredited prevention programs, and 2) to direct callers to local programs. 100% of all NJ 211 callers that are screened for their interest in diabetes self-management and prevention resources are referred to a local CDC-recognized self-management or prevention program.

### ***Health Systems Interventions***

The DPCP also continues to partner with health systems to improve quality of care. The DPCP, in partnership with twelve Federally Qualified Health Centers (FQHCs), has conducted assessments of clinical workflows, team based care models and Electronic Health Record (EHR) functionality. These assessments identified strategies, such as the implementation of an EHR-based clinical decision support system, to screen for prediabetes and to promote awareness of prediabetes among people at high risk for type 2 diabetes. Several of these facilities leveraged this partnership to enhance their EHR functionality by implementing strategies to educate patients identified as prediabetic about the potential risks of the disease and available resources to slow its development and reduce complications.

### ***Faith in Prevention***

Faith in Prevention is a pilot program that employs the Faithful Families Eating Smart, Moving More framework to expand the role of faith-based organizations in the delivery of an evidence-based health prevention curriculum in Trenton, Camden, and Newark. The program links faith-based organizations to the healthcare delivery system and provides training to lay leaders to curb obesity through increased physical activity and nutrition education. Moreover, grantees link congregants with (or at-risk for) diabetes to chronic disease prevention and control resources, such as diabetes self-management tools. The program also measures impact by screening participants for hemoglobin A1C, blood pressure, and body-mass index, prior to participation in the 6-week curriculum, at the conclusion of the curriculum and 3 months following the curriculum.

### ***Office of Minority and Multicultural Health, Community Health Disparity Prevention Program***

The Office of Minority and Multicultural Health (OMMH) provides funding to various evidence-based intervention / prevention programs through its Community Health Disparity Prevention Grant Program. Among those funded are minority-serving Community and Faith-Based Organizations (CBOs/FBOs) that provide the CDC National Diabetes Prevention Program (NDPP) and/or the Stanford University Diabetes Self-Management Program (DSMP) to minorities identified at risk for, or diagnosed with prediabetes or diabetes.

Grantees using the NDPP administer ADART tests at health fairs and other local community events at no cost. Those identified at high risk of developing diabetes, pre-diabetes or diagnosed with diabetes can enroll into one of the intervention/prevention programs and may benefit from one or more of the following services; transportation, educational workshops to raise awareness about the importance of routine checkups, referral and linkage to a community provider, print materials about healthy eating and meal preparation, health insurance information and orientation, physical activity and, information about local clinics and health departments.

Grantees facilitating the DSMP must adhere to the requirements of Stanford's "Train the Trainer System" which is a comprehensive training program held in California and other locations across the country (and abroad). The DSMP is a program designed to help people with type 2 diabetes and/or their caregivers to overcome daily challenges and maintain an active, fulfilling life. The six-week community workshops are held in settings such as libraries, churches, recreation centers and senior activity centers. Participants develop weekly action plans, share experiences and help each other solve problems as part of the self-management program. One on one counseling may be available upon request.

Diabetes intervention/prevention programs may also employ the resources of local clinical partners, train staff members as Master Trainers or Peer Leaders, and/or hire part time registered nurses, nutritionists, physical fitness instructors and other allied health professionals. To ensure cultural and linguistic appropriateness, diabetic program information, brochures and ADARTS tests are published in English, Spanish, Korean, Chinese and other languages to assist those with Limited English Proficiency (LEP). Bilingual resources may also be available on the Grantees' websites.

Performance metric outcomes and outputs are reported to OMMH annually and may include monitoring changes through A1C testing, changes in Body Mass Index, glucometers' self-tests, and/or electronic or paper self-trackers and other behavioral changes. Additionally, self-monitoring and charting progress is encouraged, and participants have an opportunity to share experiences through monthly group sessions that focus on self-improvement goals.

### ***Delivery System Reform Incentive Payment***

The Delivery System Reform Incentive Payment (DSRIP) Program is a major component of New Jersey's Comprehensive Medicaid Waiver as approved by the Centers for Medicare & Medicaid Services (CMS). DSRIP is a demonstration program designed to result in better care for New Jersey's low-income individuals (including access to care, quality of care, health outcomes), better health for the general population, and lower costs by transitioning hospital funding to a model where payment is contingent on achieving health improvement goals. As part of DSRIP, hospitals may choose one of eight chronic diseases or medical conditions on which to focus improvements. Hospitals have chosen among the following diseases and conditions: HIV/AIDS, Cardiac Care, Asthma, Diabetes, Obesity, Pneumonia, Behavioral Health and Substance Abuse. Thirteen hospitals are implementing demonstration projects aimed at improving diabetes control, including increasing the overall quality of care for patients diagnosed with diabetes mellitus and hypertension; and increasing opportunities for patient, provider, and community education.

The NJ DSRIP program has 2 diabetes projects:

- Diabetes Group Visits for Patients and Community Education
- Improve Overall Quality of Care for Patients Diagnosed with Diabetes Mellitus and Hypertension

The Group Visits project has six participating hospitals. The Diabetes Mellitus and Hypertension project has seven participating hospitals. Between the two projects, hospitals represent ten counties. The projects encompass a range of twelve quality measures established by various quality improvement measure stewards. Progress is tracked by performance in achieving these measures. Nine of the measures can result in incentive payments for attainment.

**Table 22 – New Jersey DSRIP Quality Measures, Demonstration Year 4**

The measures are:	Achieved	Attempted	% Attained
1. Lipid Management	These basic measures are not associated with an incentive payment.		
2. Foot Examination			
3. Comprehensive Diabetes Care (CDC): Hemoglobin A1C (HbA1C) testing			
4. Hemoglobin A1C (HbA1C) Testing for Pediatric Patients			
5. Eye Examination			
6. Uncontrolled Diabetes Admission Rate (PQI 14)	1	1	100%
7. Diabetes Short-Term Complications Admission Rate (PQI 1)	4	13	31%
8. Hypertension Admission Rate	5	13	38%
9. Controlling High Blood Pressure	2	7	29%
10. Diabetes Long-Term Complications Admission Rate (PQI 3)	5	13	38%
11. Adherence to Chronic Medications for People with Diabetes Mellitus: Statins	6	13	46%
12. Medical attention for nephropathy	1	3	33%
13. Diabetes Mellitus: Daily Aspirin or Antiplatelet Medication Use for Patients with Diabetes and Ischemic Vascular Disease	1	2	50%
Total	26	67	39%

Demonstration Year 4 results for the 13 hospitals hosting diabetes projects varied widely, from a low of 0% to a high of 80%. The distribution was also widely dispersed along this range. The average percent attainment for all 13 hospitals was 39%.

In addition to the specific measures for hospitals participating in the two diabetes projects, all 49 participating DSRIP program hospitals are measured by 12 universal performance standards, one of which is the Diabetes Short-Term Complications Admission Rate. Of the 49 participants, 25 achieved their goals for short-term diabetes complication admissions, for an overall 51% achievement rate, compared with 39% achievement on this goal for the 13 diabetes project hospitals.

**ShapingNJ**

ShapingNJ is the statewide public/private partnership for nutrition, physical activity and obesity prevention. The goal of this partnership is to implement obesity prevention strategies that improve the health of New Jersey’s most vulnerable populations.

In addition to the partnership, strategy implementation is happening across 6 settings: Early Care and Education, Schools, Worksites, Healthcare, Communities and Faith-based Organizations.

In the community setting, the DOH is part of a funding collaborative, using a *collective impact* model to support policy, environmental and systems change at the local level. Forty-three NJ communities are funded, including nineteen funded directly by the DOH. The other funders include Partnership for Healthy Kids (RWJF), Atlantic Health System, Partners for Health Foundation and Salem Health & Wellness Foundation. In addition to these funding sources 6, grantees leveraged an additional \$247,000. Grantees are required to implement evidence-based strategies that increase access to healthy food and routine physical activity in an effort to improve health outcomes across high risk populations. This work is



evaluated by the Center for Research and Evaluation on Education and Human Services at Montclair University.

Grantees reported the following outcomes for *Opportunities for Healthy Nutrition*:

- 80% of grantees improved environments; 60% improved policies
- 13 implemented healthy corner store initiatives
- 11 implemented healthy food policies/programs
- 11 implemented point of purchase modifications
- 9 implemented community or school gardens
- 8 worked to improve or develop farmer's markets
- 3 conducted environmental food audits
- 2 worked to improve organizational policies
- 1 implemented healthy vending

Grantees reported the following outcomes for *Opportunities for Active Living*:

- 74% of grantees improved environments; 53% improved policies
- 13 implemented active transportation installations
- 12 developed physical activity spaces
- 9 implemented organizational policies
- 7 made park improvements
- 7 implemented Complete Street policy or street design changes
- 3 implemented street use changes
- 3 implemented Safe Routes to School programs
- 3 conducted community assessments

ShapingNJ also utilizes funds to support HealthCorps sites at Memorial High School in West New York, New Jersey (Hudson County); Admiral William F. Halsey Leadership Academy in Elizabeth, New Jersey (Union County); and Millville Senior High School in Cumberland County. HealthCorps is a nationwide movement founded by heart surgeon Dr. Mehmet Oz to combat the childhood obesity epidemic. This funding supports schools to recruit and hire a school-based youth coordinator to serve as a peer mentor to address nutrition, physical activity and healthy lifestyles with students, teachers and the external school community

DOH also convenes the **New Jersey Council on Physical Fitness and Sports**. The council is dedicated to good health, nutrition, regular physical activity and recreation. Comprised of Governor-appointed volunteers from a variety of wellness, fitness, sports and nutrition agencies and entities throughout the State, the Council works to promote public awareness and to ensure that all residents of New Jersey have the opportunity to pursue healthy lifestyles.

### ***Worksite Wellness Toolkit for Employers***

The **Working Well in NJ** Toolkit was developed to specifically address heart healthy strategies that employers can adopt in the workplace. The program now includes obesity prevention and smoking cessation components. Employers continue to electronically obtain the toolkit from the NJ DOH after

completing a baseline survey and are offered technical assistance four to six weeks post-receipt of the toolkit.

As of February 2017:

- 166 NJ businesses have completed registration/pre-test & received copies of toolkit
- At baseline, 45.4% of respondent's report having no physical activity promotion strategies in place at the workplace. The remainder report providing environmental supports such as the use of point-of-decision prompts (signage); other strategies like standing desks and wellness contests; or some combination of the above.
- At baseline, 70.91 % report having a formal policy banning tobacco use in the workplace; 64.55 % of respondent's report displaying signage in the workplace about their smoking policies (of the 110 responses to the question)

Businesses report the following as being 'useful' relative to utilizing the toolkit and/or increasing physical activity: 1) leadership support or high-level "champions", 2) employee interest, 3) strategies and tools in **Working Well in NJ**, 4) a staff person with time dedicated to workplace wellness, 5) environmental supports for recreation or physical activity (e.g. onsite exercise facilities; subsidized memberships to offsite exercise facilities; organizational, individual or group physical activity programs like employee walking clubs or sports teams), and 6) signage encouraging physical activity (e.g. posters near the elevators encouraging employees to take the stairs).

In addition to marketing and disseminating the **Working Well in NJ** toolkit, the NJ DOH directed funding to increase physical activity levels of employees "during work". The targeted county, Salem, has documented high rates of obesity, diabetes, heart disease and tobacco use. Beginning in October 2016, NJDOH, with funding support from the US Centers for Disease Control and Prevention (CDC), began implementing a physical activity initiative through the Salem Health and Wellness Foundation (SHWF). SHWF has a long-standing, strong leadership position within Salem County. SHWF partners with the county Chamber of Commerce to recruit businesses to implement evidence-based physical activity strategies at no charge to the organizations. Seven businesses (total of 1205 employees) signed on for the first year of the project (2016-2017) and received *quality improvement incentives* to sustain physical activity levels beyond the grant period. A new contract (2017-2018) has been negotiated for a minimum of six more businesses with a minimum of 100 employees each to be engaged in the initiative. The project goal is to increase awareness of the impact of physical activity on decreasing the risk of chronic debilitating diseases including diabetes, heart disease, obesity, stroke and other related illnesses. The participating businesses must complete the **Working Well in NJ** toolkit registration which serves as a baseline for data collection. During recruitment and implementation NJ DOH requires that SHWF promote awareness of prediabetes among people at high risk for type 2 diabetes and incorporate information on prediabetes and the benefits of CDC-recognized lifestyle change programs at the participating sites and Salem County Chamber of Commerce website.

## **Department of Human Services**

### ***Division of Medical Assistance and Health Services***

NJ FamilyCare is the single program for all public medical assistance in New Jersey, which includes adults and children eligible for services under any state or federal authority. The Department of Human Services' Division of Medical Assistance and Health Services (DMAHS) is the state entity that administers the NJ FamilyCare program. NJ FamilyCare enables access to and delivery of care to more than 1.7 million beneficiaries in New Jersey. Healthcare is coordinated by one of the five managed care organizations contracting with DMAHS, including Aetna Better Health of New Jersey, Amerigroup New Jersey, Horizon NJ Health, United HealthCare Community Plan and Wellcare.

NJ FamilyCare's managed care organizations' (MCOs') diabetes care management begins with the early identification of members with special needs and a risk evaluation. A comprehensive assessment further identifies enrollee-centered, goal-oriented, culturally-relevant and logical steps to assure that an enrollee receives needed services in a supportive, timely and cost-effective manner.

As per NJ FamilyCare's Managed Care Contract, its MCOs must provide evidence-based disease prevention programs or care manager referrals and linkages to community providers. In addition, care managers are trained to demonstrate a working knowledge of evidence-based disease prevention programs. Health promotion topics include, but are not limited to, smoking cessation programs, nutrition counseling, signs and symptoms of common diseases and complications, and early intervention and risk reduction strategies to avoid complications of chronic illness. Examples of self-management programs include: Stanford University's *Chronic Disease Self-Management Program (CDSMP)*, the *Tomando Control de su Salud* program (a version of CDSMP delivered in Spanish), and the *Diabetes Self-Management Program (DSMP)*.

Since the publication of the initial Diabetes Action Plan there has been a heightened awareness and an increased effort by the NJ FamilyCare MCOs to enhance their individual diabetes prevention, screening and treatment programs, in order to improve outcomes and care access for these members. Each MCO also has its own unique method for addressing chronic disease. An overview of these individual programs is detailed below.

#### **MCO A**

MCO A's Disease Management Program provides services to members with selected chronic conditions, including diabetes. The services are offered through a team of Disease Managers (Registered Nurses (RN) or Licensed Clinical Social Workers) and Health and Wellness Coaches. The Diabetes Management Program is an opt-out design which employs a population-based strategy that focuses on providing care across the continuum for these members and addresses their co-morbid conditions to ensure a more holistic approach. Elements of the program include member education about their diabetes and co-morbidities, empowering self-management, and monitoring the member for adherence to a treatment plan. The Disease Manager will conduct a comprehensive assessment, and findings will be documented at the time of the initial assessment, followed by the development of a care plan utilizing clinical expertise with member-specific goals. With the member's consent, information regarding the member's condition and treatment plan is shared with the member's caregiver. An Individualized Care Plan (ICP) is developed

by the member and their Primary Care Provider (PCP) and specialist(s), as appropriate, to include identified problems, prioritized goals and suggested interventions.

#### MCO B

MCO B offers a diabetes self-management program to assist providers in managing members who are diagnosed with diabetes. The program also provides support for members with co-morbid conditions such as asthma, coronary artery disease, chronic obstructive pulmonary disease, heart failure, hypertension and depression. These targeted illnesses have been shown to respond to coordinated management strategies. A variety of data sources are utilized to identify members who may qualify for the program.

When members are identified with diabetes, the care management of their diabetes is included as part of the comprehensive care model. The objectives of the diabetes integrated care model are to obtain improved outcomes by encouraging members and providers to collaboratively manage identified chronic diseases or conditions, monitor the effectiveness of the interventions, improve provider and member satisfaction, and utilize resources more efficiently.

All pregnant members are care managed. Any pregnant member with diabetes, gestational or otherwise, is considered high risk and is managed at the most intensive level. A member will receive an Initial Health Screening (IHS) when her pregnancy is identified.

#### MCO C

Members with diabetes are identified through the administration of an Initial Health Screen (IHS) and/or Comprehensive Needs Assessment (CNA) upon enrollment. Any member scoring a 5 or above on the IHS is further outreached by Care Management to complete a CNA. The CNA is reviewed to determine if the member could benefit from enrollment in Care Management. A chronic disease, such as diabetes, increases the likelihood that a member will be eligible for Care Management services when the member is identified as having gaps in care, uncontrolled HbA1C levels and/or other needs.

The Disease Management Department identifies members with diabetes from low to moderate levels of risk. This risk-ranking methodology prioritizes members for outreach based on condition-specific gaps in care. The member receives a variety of interventions suited to their risk level. Members enrolled in passive management are considered lower risk and receive non-interactive interventions including condition-specific educational mailings. Members enrolled in active management have complex, comorbid conditions and work collaboratively with a nurse case manager to establish holistic goals, develop a plan of care and track progress. MCO C's Care Management (CM) Program consists of several levels based upon the member's complexity and minimum frequency of contact. Based upon the review of the CNA, the inpatient census, referrals and other sources, a member with diabetes will be assigned an appropriate care management level.

Services offered through the Care Management Program for diabetics include, but are not limited to:

- Initial and ongoing assessment and disease management using evidence-based clinical practice guidelines
- Direct telephonic contact and coordination of care with the member, provider and others involved in the member's care

- Problem-based, comprehensive care planning which includes measurable prioritized goals and interventions tailored to the complexity level of the member as determined by initial and ongoing assessments
- Care coordination with planned interventions driven by the care manager's diabetic care plan
- Member education on the importance of a dilated eye exam, necessary diabetes testing, foot care, cholesterol monitoring, and other topics related to member needs
- Member empowerment and self-care management strategies using motivational interviewing techniques

During the CM process, all diabetic gaps in care are identified. The Care Manager is alerted to discuss any identified gaps with the member and assist with obtaining recommended services, such as hemoglobin A1C and nephropathy testing, dilated retinal exam, foot exams, and blood pressure monitoring. In instances in which a member is unable to be reached or is not engaged, the CM department initiates the face-to-face care management services of Integra to locate these members in the community and connect them to their PCP and CM services.

Members with gestational diabetes are identified through any of the following: the Perinatal Risk Assessment provided by the obstetrician's office, provider notification of the pregnancy, High Risk Screeners, claims reviews, medication reviews and/or referrals to Care Management. Any member identified as having gestational diabetes is considered high risk and has access to Care Management.

#### MCO D

MCO D's care management program utilizes an Initial Health Screening (IHS) tool to quickly identify a member's immediate needs, as well as the need for more extensive screening. A Comprehensive Needs Assessment (CNA) and care plan are then developed to address complex members' needs.

The American Diabetes Association (ADA) Clinical Practice Guidelines, updated annually, are evidence-based standards of care that act as the basis for MCO D's members' special diabetes program. The Diabetes Management Program helps members control their diabetes by learning about the disease and the long-term effects. The Diabetes Management Program provides educational materials and a Diabetes CorePack covering topics such as meal planning, insulin and medication use and diabetic specialists and nutritionists. The "Take 5 if You Have Diabetes!" health promotion program informs members of five important things needed to manage their disease: Hemoglobin A1C (HbA1C) blood test at least twice a year; blood test for cholesterol at least once a year; urine micro albumin test at least once a year to identify kidney damage early; dilated retinal eye exam at least annually; and foot exams at every primary care provider office visit and referrals to a podiatrist at least once a year. Telephonic outreach is conducted via Interactive Voice Recognition (IVR) calls. The calls are designed to close gaps in care, as well as educate members on the purpose of diabetes care.

MCO D hosts community events throughout the state and provides Diabetes Workshops. Every few months, MCO D hosts a Community Health Advisory Committee with members, community health advocates and community leaders. The Community Health Advisory Committee talks about ways to improve member services, health education and outreach activities.

The Getting Early Maternity Services (GEMS) program for pregnant women mirrors American College of Gynecology (ACOG) guidelines. This program uses the Perinatal Risk Assessment (PRA) form through which a plan of care is developed and referrals are made when the level of risk is identified. Members

identified with gestational diabetes have a risk stratification survey completed and are assigned to a Case Manager. Member outreach is conducted providing education and program resources.

### MCO E

Care Management services at MCO E are known as the Person-Centered Care Model (PCCM). The PCCM is for all members with complex needs and chronic conditions. Special health needs are identified through an Initial Health Screen (IHS), a complete Comprehensive Needs Assessment (CNA) and a Diabetes Assessment report as appropriate, to establish a level of risk and need for additional services.

MCO E's Disease Management (DM) Program offers member education, self-management techniques, caregiver support, coordination of the provider's treatment plan and informed decision making. The program identifies members with diabetes, stratifies their risk and designs interventions to address their needs. MCO E uses the American Diabetes Association (ADA) Standard of Medical Care in Diabetes as the clinical practice standard of care for the diabetes management program.

The Healthy First Steps (HFS) program engages community health workers to identify pregnant members who do not respond to traditional outreach. Members engaged are screened for targeted high risk clinical conditions that indicate the need for referral to the maternity RN. Those cases will be referred to and managed by the RN throughout the pregnancy. Tobacco cessation is part of the HFS program for all pregnant members.

Planned community events with network providers are offered to members with diabetes to keep them up to date with diabetes educational information and provide on-site testing for HbA1C, cholesterol and vision exams. Selected special needs members with diabetic retinopathy are assisted in obtaining referrals for appropriate follow-up evaluation and treatment.

### ***Community Resources, Education and Wellness Unit***

The Office of Community Resources, Education and Wellness within the Division of Aging Services (DoAS) established the capacity for statewide delivery of a number of Stanford University's chronic disease self-management education programs, including its Diabetes Self-Management Program (DSMP) and its Spanish-language version. This network was built with the support of multi-year federal grants and strong partnerships with state and local governmental and non-profit agencies committed to providing evidence-based disease prevention and health promotions programs in their communities. As the holder of a multi-site license from Stanford, DoAS provides ongoing support to DSMP providers by maintaining staff trained as DSMP master trainers; creating and sustaining an in-state database of active master trainers and peer leaders; providing technical assistance; updating programmatic and reporting forms accessible to the network on the DoAS website; promoting DSMP availability via its website, HealthEASE e-newsletter and a toll-free number. In 2016, DoAS renewed the agency partner agreements with its providers, requiring them to collect participant information surveys and submit these to DoAS, for entry into both national and state databases. DoAS also required partners to execute business associate agreements defining confidentiality responsibilities.

Statewide partners include Healthcare Quality Strategies Incorporated (HQSI), the DOH Office of Minority and Multicultural Health (OMMH), and the DOH Division of Family Health Services (FHS). HQSI is participating in a regional grant from CMS that will include increasing the number of trainers for DSMP, and the number of Medicare beneficiaries among DSMP workshop participants (2,000 in five years).

## **Community Partners**

### ***American Diabetes Association***

The American Diabetes Association (ADA) advocates for New Jersey families and individuals by working to cure and prevent diabetes and to improve the lives of those living with diabetes. In NJ, more than 37% of the population has pre-diabetes, and most are unaware.

One of the Association's priority investment areas is Total Wellness. This work focuses on the improvement of the quality of life for people who have diabetes, or who are at risk for diabetes, through educational programs, literature and lifestyle programs and services. The Association's effectiveness is directly related to its ability to bring together partners of all kinds, from community institutions, to local leaders, to researchers and healthcare providers. All working together to deliver quality prevention and management programs.

The Association has ensured that trusted information and resources are available for people to access at any time in multiple formats. The Association has websites, print materials, and a toll-free Call Center that can be accessed for information.

The Association is a powerful national and local voice for people with diabetes. With the help of a network of hundreds of local advocates, the Association is leading the way in the call for increased federal and state funding for research and prevention programs; improving access to affordable, quality healthcare; fighting discrimination in schools and the workplace; and promoting the power of prevention.

By setting the standards of care and providing resources to health practitioners, the Association continues to extend the reach of high-quality diabetes care, creating a powerful community of care that is grounded in strong science and innovative thinking.

### ***New Jersey Primary Care Association***

Since 1989, the New Jersey Primary Care Association (NJPCA) has been providing Training and Technical Assistance (T/TA) to New Jersey's Federally Qualified Health Centers (FQHCs). NJPCA's mission and primary goal is to provide for the expansion and provision of quality, cost-effective and efficient primary healthcare through community health centers by providing effective training and technical assistance while seeking new and expanded revenue sources for health center services. The NJPCA membership consists of each of the twenty-three (23) FQHCs in the State of New Jersey.

Collectively, New Jersey's 23 FQHCs operate 128 satellite community-based ambulatory healthcare facilities throughout the state, including school-based and mobile sites in each of the 21 counties of New Jersey. Annually, FQHCs serve over 494,990 of New Jersey's uninsured, underinsured and medically underserved residents. Eighty percent of FQHCs in New Jersey are patient-centered medical home accredited.

As per 2014 UDS data, there were 26,880 FQHC patients who have been diagnosed with diabetes and utilized the FQHCs for managing this chronic care condition. Among these 26,880 patients, 42.8% are identified as Hispanic/Latino, 57.0% as Non-Hispanic/Latino, and 0.2% as unreported. Among those who were identified as Non-Hispanic (15,325), African Americans were the largest group with the prevalence of diabetes (56.8% or 8,711) followed by Whites (33.5% or 5,140) and Asians, Native Hawaiians and Pacific Islanders at 6.5%.

Through the DRCC project as well as our ongoing Training and Technical Assistance efforts, NJPCA continues to address the burden of diabetes on New Jersey's most vulnerable populations.

***Novo Nordisk, Inc.***

Novo Nordisk (NNI) works for a future where fewer people get diabetes, individuals with diabetes are diagnosed and those who are diagnosed receive adequate treatment and can live a life with as few limitations as possible.

For more than 90 years, since its founding in Denmark, Novo Nordisk has been changing diabetes. Since establishing a presence in NJ in 1992, and in 2013, opening its US headquarters in New Jersey, these efforts have taken various forms. For example, Novo Nordisk conceived and initiated the Community Health Collaborative (CHC) in 2015. The CHC is a grant program that supports organizations to address the prevalence of type 2 diabetes and obesity in Trenton, specifically among the youth. The initial work of the CHC fundamentally influenced the organization, recognizing that improving the health of a community requires working with people when they are young and still learning about healthy lifestyles. This program is targeted to 1<sup>st</sup> to 3<sup>rd</sup> grade students. The programming touches on topics ranging from improved access to healthy, affordable foods; greater physical activity; and healthy lifestyle education for parents and guardians.

The CHC's collaborative element is its most important element. When Novo Nordisk conceived this program, trusted community organizations were sought out that shared the organization's commitment and have the know-how and capacity to foster wellness in Trenton's youth through community programs that are practical, tangible and measurable. In addition to the Mayor and the City of Trenton, the collaborative includes the Trenton Health Team, Boys & Girls Club of Trenton, Trenton YMCA and State Alliance, NJ Partnership for Healthy Kids, Isles, The College of NJ, Wellness in the Schools, GoNoodle, and The Food Trust. With Novo Nordisk's leadership in diabetes and obesity, and its partners' collective knowledge, history and proven success in working to make the city of Trenton a better place to live, there is a collective stake in the Collaborative's goals and programming, as well as its evaluation.

Novo Nordisk believes that when organizations pull together, they can transform communities into healthier places to live, work and play. For Novo Nordisk, the CHC fully captures the spirit of the Novo Nordisk Way, the company's set of values and principles which helps guide every decision made. Rather than focusing merely on a short-term goal, the vision is working together to create sustainable and meaningful change on issues that matter to the people of Trenton.

Beyond this signature initiative, NNI has sponsored Diabetes Awareness activities with Rutgers Athletics including featuring ADA honorees at the last home basketball game in March 2016.

Novo Nordisk participated in two diabetes expos that were held in Jersey City and Newark in December 2016, that also included the Newark Department of Health, YMCA of Newark and Horizon BCBS NJ. NNI provided diabetes education materials to attendees and brought actor Ben Vereen to these expos to spread his motivational message and raise awareness about diabetes. Many additional local community stakeholders participated in the events to provide health screenings and diabetes information, including the ADA, the Diabetes Foundation, local health systems, the Urban Health Initiative Program (UHIP), ShopRite, Eli Lilly and Sanofi.



For the last two years, Novo Nordisk has also partnered with the New Jersey Education Association (NJEA) as part of the health component of the NJEA Annual Convention, and participated to provide diabetes information and risk –screening and celebrity chef demonstrations of healthy diet and food preparation.

## Diabetes Action Plan Committee Proposed Recommendations

### **Recommendation 1**

***Support professional diabetes education of primary healthcare providers and their staff to promote the American Diabetes Association (ADA) standards of care.***

The ADA “Standards of Medical Care in Diabetes” has for over 25 years, developed and disseminated the diabetes care standards, guidelines, and related documents that provide healthcare providers and interested personnel with the components of diabetes care, treatment goals and evaluation tools. The ADA updates the Standards of Care to ensure that healthcare providers can rely on them as the most authoritative and current guidelines for diabetes care.

### **Recommendation 2**

***Ensure all state departments promote evidence-based DSME and NDPP, with support from external stakeholders.***

- *(American Diabetes Association (ADA), American Association of Diabetes Educators(AADE), Stanford-based and Centers for Disease Control(CDC)-recognized programs)*

The Community Guide to Preventive Services Task Force (Community Guide) recommends the promotion of diabetes self-management education (DSME) for people with diabetes and the National Diabetes Prevention Program (NDPP) for those at risk for developing prediabetes. The Community Guide is a resource for state health departments as a cache of data and expert reviewed material. The task force, established in 1996, is an independent group of public health and prevention experts whose members are appointed by the Director of the CDC. The NDPP and DSME programs support the knowledge and self-care skills needed to effectively manage diabetes and encourage a healthy diet and physical activity for people with prediabetes. The long-range outcomes of these programs can include effective self-management of diabetes, weight loss, a reduction in risk for developing type 2 diabetes, cost savings, and ultimately, better clinical outcomes for patients. To take advantage of these benefits, state departments and external stakeholders (hospitals, professional organizations) should promote these programs.

### **Recommendation 3**

***Continue to encourage diabetes surveillance and evaluation throughout the state to monitor the impact of diabetes and interventions:***

- *Guide data-driven policy development to inform, prioritize, deliver and monitor diabetes interventions at state and community levels.*
- *Promote the reporting of health quality measures (such as National Quality Forum Measure 59 (NQF 59) and HEDIS measures) at health systems level.*

Policy development should take surveillance and evaluation findings into account in order to adequately address the needs of the population that will be impacted by the policy. As shown in this plan, the state already maintains a comprehensive surveillance system for diabetes. Review of the most recent

surveillance data is important in order to identify appropriate policies and to tailor them to the appropriate population. Evaluation findings can help identify policies that will be effective.

The universal reporting of NQF 59 and HEDIS measures would provide policymakers access to aggregate data at the health systems level. This would enable policymakers to identify people with higher levels of poorly controlled diabetes (HbA1C levels >9.0%), allowing for the identification of higher morbidity health systems within the state and the ability to more readily monitor the effectiveness of policy change.

#### ***Recommendation 4***

##### ***Encourage providers to promote and provide comprehensive diabetes prevention services:***

- *Provide screening to aid in early detection of disease;*
- *Communicate the results and implications of diabetes screenings with patients as part of medical record; and*
- *Refer patient to evidence-based diabetes prevention education and CDC-recognized lifestyle change programs.*

According to national estimates, approximately 37% of adults over 20 years of age have prediabetes. Only 8.1% of New Jersey adults have been diagnosed with prediabetes (2014 BRFSS). An estimated 15 % to 30% of people with prediabetes will go on to develop type 2 diabetes within five years (CDC 2014). According to the CDC, CDC-led lifestyle change programs can help to reduce the risk of people with prediabetes developing type 2 diabetes by as much as 58%.

The encouragement of improved screening measures would increase the percentage of New Jersey adults aware they have prediabetes to coincide with national estimates. These patients could then be referred to lifestyle change programs to lower their risk level and possibly delay or prevent the onset of type 2 diabetes. In 2013, the average cost of diabetes per member among NJ Family Care members was \$1,660.

#### ***Recommendation 5***

##### ***Encourage providers to promote and provide services that improve Hemoglobin A1C control and prevent complications for persons with diabetes:***

- *Ensure Hemoglobin A1C testing at least twice annually;*
- *Ensure that patients receive at least annual visits with a podiatrist and ophthalmologist; and*
- *Refer to evidence-based diabetes self-management education (ADA, AADE, Stanford models)*

In 2015, the American Diabetes Association (ADA) released an update to the Standards of Medical Care in Diabetes. This report provided specific guidelines that healthcare providers should follow when caring for a person with diabetes. Among those guidelines were directives to providers to conduct comprehensive foot exams and risk assessments at least annually and to perform a hemoglobin A1C test at least twice a year in patients who have stable glycemic control.

In New Jersey, 9% of adults or more than 600,000 people have diabetes. This correlates to significant costs in the care of those individuals. According to the Community Guide Preventive Services Task Force, diabetes Self-Management Education (DSME) held in community gathering places has shown to be an effective strategy for improving glycemic control, health status and quality of life for adults with type 2 diabetes.

**Recommendation 6**

***Promote and maintain access to evidence-based treatment and comprehensive case management for children and adults with a diagnosis of prediabetes, diabetes, or gestational diabetes.***

Many children and pregnant women who come to the attention of child welfare, behavioral health, mental health or other social services in NJ, and who also have a diagnosis of diabetes or prediabetes, are often working to address multiple risk factors which may complicate or compromise their ability to engage with and maintain appropriate diabetes-related care, and often require additional supports and follow-up in order to begin and follow through with the self-management and lifestyle changes that are required to maintain an effective regimen of care.

## Next Steps

### **Identify and leverage new legislation**

- Many New Jersey residents can benefit from recent legislation concerning Medicare coverage for Diabetes Prevention Programs (DPP). The DAPC will seek opportunities to promote this benefit among stakeholders.

### **Continue to identify stakeholders and resources within the state**

- The DAPC will continue to identify new stakeholders, program models and resources within the state which may benefit residents.

### **Improve screening for prediabetes and diabetes**

- The DMAHS will inform Medicaid MCOs and providers of the most recent diabetes screening guidelines adopted by the United States Preventive Services Task Force, which increases the criteria for screening and works to identify more patients from underserved areas, enabling interventions to prevent the onset or progression of diabetes in vulnerable populations.

## References

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8. MCO Care Management Workbook DMAHS definition (revised July 2015)
9. National Diabetes Prevention Program Site (2015, April 17). Retrieved February 3, 2017, from <https://www.cdc.gov/diabetes/prevention/about/index.html>

## Technical Notes

1. The data source for hospitalization and ED visits is the 2015 New Jersey UB data file
2. Diabetes was defined in hospital and ED discharge records using ICD-9 codes 250.x
3. Diabetes related lower limb amputations were defined in hospital discharge records using ICD-9 procedure code 841.x as any-listed procedure and ICD-9 diagnosis code 250.x as any-listed diagnosis with transfers and maternal hospitalizations excluded.
4. Chronic conditions were defined in hospital and ED discharge records as follows:

Condition	ICD-9 Diagnosis Code*
Asthma	493
COPD	490 - 492, 494, 496
Ischemic Heart Disease	410, 411, 412, 413, 414.0, 414.12, 414.2, 414.3, 414.4, 414.8, 414.9
Heart Failure	398.91, 402.01, 402.11, 402.91, 404.01, 404.11, 404.91, 404.03, 404.13, 404.93, 428
Hypertension	362.11, 401, 402, 403, 404, 405, 437.2
Chronic Kidney Disease	16.0, 095.4, 189.0, 189.9, 223.0, 236.91, 249.4, 250.4, 271.4, 274.10, 283.11, 403.01, 403.11, 403.91, 404.02, 404.03, 404.12, 404.13, 404.92, 404.93, 440.1, 442.1, 572.4, 580, 581, 582, 583, 584, 585, 586, 587, 588, 591, 753.12, 753.13, 753.14, 753.15, 753.16, 753.17, 753.19, 753.2, 794.4
Stroke	430, 431, 433.01, 433.11, 433.21, 433.31, 433.81, 433.91, 434.00, 434.01, 434.10, 434.11, 434.90, 434.91, 435.0, 435.1, 435.3, 435.8, 435.9, 436, 997.02

*\*Centers for Medicaid & Medicare Services, Chronic Condition Warehouse Categories, September 2014. Available: <https://www.ccwdata.org/web/guest/condition-categories>*

5. Gestational diabetes was identified in hospital records using ICD-9 diagnosis code 648.8x as any-listed diagnosis. Diabetes complicating pregnancy was identified using ICD-9 diagnosis code 648.0x as any-listed diagnosis. Non-delivery maternal hospital stays were identified using ICD-9 diagnosis codes 630-679 as any-listed diagnosis. Maternal delivery hospital stays for cesarean section were identified using MS-DRG codes 765 and 766. Maternal delivery hospital stays for vaginal delivery were identified using MS-DRG codes 767, 768, 774, and 775.
6. Population estimates for calculating hospitalization and ED visit rates were taken from the United States Census Bureau's annual estimates (Vintage 2015, Release Date: June 2016). Available: <http://factfinder.census.gov/>

## Appendix A N.J.S.A. §26:2-142.1

AN ACT concerning diabetes and supplementing Title 26 of the Revised Statutes

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

C:26:2-142.1 Diabetes action plan, report to Governor, Legislature

1. a. The Department of Health, in consultation with the Department of Human Services and the Department of Children and Families, shall develop a diabetes action plan to reduce the impact of diabetes in the State of New Jersey. The plan shall identify goals and benchmarks related to reducing the incidence of diabetes in New Jersey, improving diabetes care, and controlling complications associated with diabetes.

b. The Department of Health, in consultation with the Department of Human Services and the Department of Children and Families, shall, no later than 24 months after the effective date of this act and biannually thereafter, present a report to the Governor, and to the Legislature pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), on the following:

(1)The financial impact and reach of diabetes of all types on the Department of Health, the Department of Human Services, and the Department of Children and Families, as well as the population Statewide and in specific areas of the State. The report shall include: (a) the number of people with diabetes receiving services provided by each department; (b) the number of people with diabetes and family members impacted by diabetes prevention and control programs implemented by each department; (c) the financial impact of diabetes and its complications on each department; and (d) the financial impact of diabetes and its complications on each department in comparison to other chronic diseases and conditions;

(2)The benefits of implemented programs and activities aimed at preventing or controlling diabetes. This assessment shall document the amount and source of any funding directed to each department for programs and activities aimed at reaching those with diabetes;

(3)The level of coordination among the three departments and the divisions and agencies thereof on activities, programmatic activities, and messaging related to the management, treatment, or prevention of all forms of diabetes and its complications;

(4)The development or revision of a detailed action plan for preventing and controlling diabetes with a range of actionable items for consideration by the Legislature. The plan shall identify proposed actions to reduce the impact of all forms of diabetes, pre-diabetes, and complications related to diabetes; identify expected outcomes of the proposed actions in the following biennium; and establish benchmarks for preventing and controlling relevant forms of diabetes, reducing the incidence of diabetes, improving diabetes care, and controlling complications associated with diabetes; and

(5)The development of a detailed budget blueprint identifying needs, costs, and resources required to implement the plan pursuant to paragraph (4) of this subsection. This blueprint shall include a budget range for each proposed action presented in the plan pursuant to paragraph (4) of this subsection for consideration by the Legislature.

Approved August 7, 2013



## **Appendix B**

### **2017 Diabetes Action Plan Proposed Recommendations**

#### **Recommendation 1**

**Encourage providers to establish, maintain, and implement as part of normal operating procedures a verifiable system to:**

- Screen patients with risk factors for prediabetes and diabetes according to the latest clinical guidelines set forth by the American Diabetes Association;
- Encourage immediate communication regarding the results and implications of said screenings with patients as part of the patient's electronic medical record; and
- Educate patients identified as prediabetic about the potential risks to their health and available resources for further education.

#### **Recommendation 2**

**Communicate the results and implications of diabetes screenings with patients as part of the medical record.**

- Educate patients identified as prediabetic about the potential risks and available resources.
- Refer at-risk individuals to appropriate prevention and treatment programs.

#### **Recommendation 3**

**Encourage evidence-based diabetes self-management education, training, and services for patients diagnosed with type 2 diabetes and gestational diabetes.**

#### **Recommendation 4**

**Encourage evidence-based diabetes prevention education and CDC-recognized lifestyle change programs for the primary prevention of type 2 diabetes among patients diagnosed with prediabetes or those at high risk for type 2 diabetes.**

#### **Recommendation 5**

**Work to reduce the cost of diabetes mellitus in the community by providing education for families and providers, and by specifically targeting diabetics over the age of 65.**