Diabetes Initiative of South Carolina

2007 Annual Report

John A. Colwell, MD, PhD
Chairman, Board of Directors
Diabetes Initiative of South Carolina
January, 2008

To Governor Sanford and the General Assembly:

On behalf of The Board of Directors of The Diabetes Initiative of South Carolina, I am pleased to present our Thirteenth Annual Report (calendar year 2007). This report was requested in the Diabetes Initiative of South Carolina Act, Chapter 39, Section 44-39.

We have many active programs of patient education. Through our effective, ongoing collaboration with the Diabetes Control Program, SC DHEC, we have established 29 coalitions around the state, and SC DHEC is currently working to establish Nurse-Dietitian teams in underserved counties. These are primarily located in rural areas, and allow interested individuals who are affected by diabetes to share experiences, and develop and access educational programs. In collaboration with the National Library of Medicine, we have established computerized training programs in community libraries to improve diabetes. We continue to work with funding to decrease disparities for African Americans at risk and with diabetes. Funding was obtained from Centers for Disease Control and Prevention to establish a Center of Excellence to eliminate health disparities related to diabetes.

We assess progress by regular reviews of epidemiologic data by our Surveillance Council, and are currently evaluating our progress over the past 10 years. Significant reductions have occurred in amputations, hospitalizations for heart attacks and strokes in people with diabetes.

In 2006, we launched a new program: Intensive Management of Diabetes in the Hospital. Recent studies have clearly indicated that careful management of blood glucose (with a goal of normalization) will reduce mortality, morbidity, infections, and length of hospital stays for people who are hospitalized with diabetes and hyperglycemia. There is great interest in this statewide program.

Outside yearly funding of programs of education, care, and clinical research in diabetes now exceeds $7.1 million in 2007. We are grateful to the General Assembly for establishing this Initiative, and sincerely hope that you will find this to be an encouraging report. However, much more work is needed to decrease the tremendous burden of diabetes in South Carolina.

John A. Colwell, MD, PhD
Board Chair, Diabetes Initiative of SC
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EXECUTIVE SUMMARY
EXECUTIVE SUMMARY

In calendar year 2007, the Diabetes Initiative of South Carolina continues to focus on extensive educational activities for patients and health providers. It is our philosophy that individuals affected by diabetes and its complications must be informed about the many ramifications of this chronic disease to be proactive in prevention and care.

Many programs directed at patient education are now operative in our state. Under the leadership of the Diabetes Control Program, SC DHEC, 29 coalitions have been formed throughout South Carolina. These lay groups concentrate on informing people in their regions about diabetes and its complications. There is an Annual African American Day, attended by 690 people affected by diabetes, where multiple aspects of the disorder are presented and discussed. Several major extramurally funded grants focus on imparting information about diabetes to diverse audiences. An innovative program, supported by the National Library of Medicine, has established computerized diabetic patient education in 6 libraries and 5 community sites. Annually, approximately 202 diabetic children and youths with diabetes attend Camp Adam Fisher, where they learn the latest news about diabetes management from their peers and from volunteer health professionals.

Professional education is a major focus. Each year the Diabetes Initiative of SC conducts a pre-conference and 2 day diabetes symposium which is attended by close to 425 health professionals. Additionally, diabetes educational conferences are conducted annually by the DSC/USC site and by the Diabetes Prevention and Control Program, SC DHEC. DSC maintains several websites which highlight recent developments in diabetes research and care for health professionals, and continues with very successful programs to train more Certified Diabetes Educators in the state of South Carolina.

Pamela C. Arnold, MSN, APRN, continues to serve as the Clinical Director of the Diabetes Center of Excellence as well as the Diabetes Management Service (DMS) at MUSC. Ms. Arnold has distinguished herself as a mentor and expert resource for health care professionals throughout the state.

Dr. Kathie Hermayer and colleagues published 2 articles in peer reviewed journals relating to diabetes management in the hospital. A third publication is pending final approval.

Our 10 Year Strategic Plan (1998 – 2008) is nearing its completion, and we are currently evaluating our progress in meeting goals. A monograph on progress is under development for the coming year.

Our surveillance efforts have identified positive results from interventions and programs. Over the past decade, significant increases were detected in the frequency of diabetes-related monitoring including blood glucose, hemoglobin A1c, lipids, blood pressure, feet examination and eye examination from health professionals. As well, treatment rates of associated factors including hypertension and elevated blood lipids have dramatically improved. These trends have coincided with the downward trends in lower extremity amputations, and in heart attacks and strokes among people hospitalized with diabetes. Kidney failure leading to dialysis is increasing, however. This may partially be due to increased longevity of these patients; however, new preventive measures are expected to reduce this trend in future years.
HISTORICAL BACKGROUND
HISTORICAL BACKGROUND

In 1991, the Division of Diabetes Translation, Centers for Disease Control, Atlanta, Georgia, published updated trends in diabetes and in diabetic complications in the United States, between 1980 and 1989. Major trends included an increasing prevalence of diabetes and increasing hospitalization rates among diabetic individuals for the serious complications of amputations, end stage renal disease, myocardial infarctions and cardiovascular death. The prevalence of diabetes was doubled in blacks when compared with whites. There was an increase in all major cardiovascular complications among blacks with diabetes. Diabetes was the leading cause of blindness among adults, and women with diabetes were at an increase risk for adverse outcomes of pregnancy.

These issues were magnified in South Carolina, relative to most other states in the United States. Diabetes prevalence was estimated at 6.1%, 5th among 38 states surveyed. Diabetes as a contributor to mortality was increasing in incidence in South Carolina and diabetes accounted for approximately 11% of hospital admissions. Overall, 14% of hospital beds were occupied by people with diabetes. Longitudinal data in the decade of 1980-1990 revealed increases in the prevalence of excess weight, self-reported hypertension and high blood cholesterol in individuals known to have diabetes. Hospitalization rates for renal failure, amputation, and myocardial infarction were increasing and the mortality rate for diabetes as one of the listed causes of death in South Carolina was steadily rising, from 50.7/100,000 population in 1980 to 71.1/100,000 population in 1992.

Shortages of health care professionals involved in care for people with diabetes were recognized. In particular, there were inadequate numbers of primary care physicians, endocrinologists, nephrologists, certified diabetes educators, podiatrists, and pharmacists trained in the care of people with diabetes. Major physician health professional shortages were identified by the Office of Primary Care, S.C. DHEC in 50% of the 48 counties in South Carolina and 74% of the counties in the state were designated by the S.C. State Health and Human Services Commission as medically underserved.

Crude estimates of quality of care for people with diabetes were made. In one survey of type 2 diabetes patients in 1994, 24% had not seen a medical doctor in the past year for diabetes, only 34% reported that they checked blood glucose at least once a day, and a mere 28% had ever heard of HbA1c. Of these, only 18% had an A1C check in the past year. Approximately one quarter of the diabetes individuals reported eye examinations and less than half said they had a foot examination in the past year. It was found that diabetes education had been provided to less than 50% of diabetic individuals.

Evidence was appearing from large scale collaborative clinical trials that the risks of morbidity and mortality from such cardiovascular complications as myocardial infarction and stroke could be substantially reduced by intensive management of lipid profiles and elevated blood pressure. In 1993, the seminal report from the Diabetes Control and Complications Trial (DCCT) established that intensive glycemic regulation in type 1 diabetes would substantially decrease the risks for the progression of retinopathy, nephropathy, and neuropathy. Simple, inexpensive low dose aspirin therapy produced modest risk reductions for myocardial infarction as a secondary prevention strategy. Microalbuminuria was recognized as a risk marker for cardiovascular events and for renal failure, and it was predicted that intervention trials with angiotensin converting enzyme inhibitors (ACEI) would be effective in delaying progression of these serious complications.

Thus, a serious public health problem of diabetes and its complications was recognized in South Carolina and in the United States. An undersupply of qualified health professionals was on hand to deal with the increasing demands of more intensive education and health care for people with diabetes. Ominous upward trends in mortality and morbidity statistics were present, and an increasing incidence of markers of future cardiovascular events (hypertension, cholesterol, over weight/obesity) was occurring. It was evident that an action plan was needed.
The Diabetes Initiative of South Carolina (DSC) was created by legislative action and signed into law by the Governor of South Carolina in July, 1994. The law established a Board of Directors with members appointed by the top officials of key organizations with an interest in diabetes and its complications. The Board has met quarterly since that time and has annually submits this Report. It is referred for progress review by the Legislature and the Governor.

The Organization Chart of the Diabetes Initiative of South Carolina is shown below:

There are three Councils; the Center of Excellence, Outreach, and Surveillance Council. There is a Diabetes Center of Excellence, established in the original legislation, based at the Medical University of South Carolina. This Center is responsible for administering the many activities and programs of DSC and its Board and Councils. It is also responsible for developing and administering professional education programs for health professionals of all varieties in South Carolina, to improve their knowledge and abilities to care for people with diabetes in our state. The Outreach Council is responsible for community interface, with a broad goal of improving diabetes care and education directed at people affected by diabetes. The Surveillance Council is responsible for acquiring, analyzing and distributing epidemiologic information about diabetes including its prevalence costs, morbidity, and mortality. This Council works closely with the Diabetes Control Project of SC Department of Health and Environmental Control, and issues regular Burden Reports on the scope and impact of diabetes in South Carolina. A DSC site has been established in the School of Medicine at USC, and provides a critical mechanism for liaison between the two schools and for oversight of programs and activities in the midlands and upstate regions of South Carolina.

We also regularly interact with the American Diabetes Association, Carolinas Center for Medical Excellence, the Hypertension Initiative of South Carolina and the Area Health Education Consortium. Full reports from key components in the DSC structure are included in this Report.
10 YEAR STRATEGIC PLAN
The DSC Board developed a Long Range Strategic Plan in 1998, and has been monitoring results relating to its goals and objectives on a regular basis. The plan has 9 major goals, and The Board expects quantitative evidence of progress towards achieving these goals during the ten year time span of The Plan, 1998 - 2008. These goals are:

**Goal I:** To improve knowledge of diabetes, quality of life, and access to prevention and intervention services for people at risk and those affected by diabetes.

**Goal II:** To increase the utilization of short-term (surrogate) measures which lead to actions that will delay progression of complications of diabetes.

**Goal III:** To address the needs of persons at risk and with diabetes by increasing services and education in health professional shortage areas in South Carolina.

**Goal IV:** To reduce the morbidity rates from diabetes-related complications.

**Goal V:** To reduce the age-adjusted mortality rates from diabetes and its complications.

**Goal VI:** To decrease risks for select groups of people with diabetes where the prevalence and complication rates exceed those of others.

**Goal VII:** To reduce preventable hospital admissions and charges for diabetes.

**Goal VIII:** To reduce preventable visits to the emergency room by people with diabetes.

**Goal IX:** To improve the statistical basis for estimating the prevalence of diabetes in South Carolina.

The mechanisms by which these goals may be achieved are given in the following outline.
Diabetes Initiative of South Carolina

People at Risk or with Diabetes

Expand HMO/Insurance Coverage for Diabetes Care, Supplies and Education

Improve Knowledge and Access to Prevention, and Intervention Services for Diabetes

Utilization of Measures and Actions that Decrease Risks and Complications

Health Professional Education

Community-based & Patient Education

Costs for Complications

Unnecessary Hospital Admissions

Premature Deaths

Morbidities & Disabilities

ER Visits for Preventable Complications

Improve Quality of Life

Improve Public Awareness through Media Channels
In calendar year 2004, we completed a review of 5 years of progress which concentrated on the first 3 goals of the 10 Year Strategic Plan. We recognized that the legislation had created a uniquely successful statewide collaborative effort. Programs were generally on target and were productive. Examples were community outreach, professional and patient education programs, and surveillance of trends in diabetes care. It was recognized, however, that prevalence of diabetes and obesity was increasing, and that comorbidities such as hypertension and altered blood lipids complicated overall management. Major extramural grant funding for community-based programs and clinical trials had been acquired at MUSC and at USC. Overall, progress with that unique combination of public and private resources (federal, state, regional and local support) had been exciting.

Currently, we are evaluating our progress on the 10 Year Strategic Plan for improving diabetes in South Carolina. Programs have been operative for a sufficient time to begin to see trends in morbidity, mortality, hospitalizations, emergency room visits, and health disparities among people with diabetes in South Carolina. After this analysis by the Board, Councils, and major partners, we will publish a monograph at the 10 year mark in 2008. Areas of defined advances will be described as well as issues which require further attention. Since diabetes mellitus is a chronic disease with very long term complications, it is likely that another decade (or more) of work will be needed to be certain that promising trends are sustained and real.
BUDGET AND SUPPLEMENTAL SUPPORT
BUDGET

FY 2007 – 2008

State Appropriation $266,935

SUPPLEMENTAL SUPPORT

The establishment of the Diabetes Initiative of South Carolina has had a major objective to at least match state funding with outside grant support. We have consistently exceeded state support, each year since the Diabetes Initiative was created in 1994. We are pleased to report major success in this area in fiscal year 2007.

1. **EXPORT** Center on Metabolic Syndrome and Minority Health is funded by NIH’s National Center on Minority Health and Health Disparities. This five-year grant aims to promote research to reduce health disparities with supports for a partnership between MUSC and South Carolina State University. **EXPORT** focuses on diabetes, hypertension, obesity, and lipid abnormalities which are major contributors to health disparities. PI: Dr. Sabra Slaughter at MUSC, and Dr. James Walker, Jr. at SCSU.

2. **South Carolina Diabetes Control Program-DHEC (SC DCP-DHEC):** This is a grant continuation from the Centers for Disease Control and Prevention (CDC) for a statewide Diabetes Control Program. Its goal and objectives are to integrate and complement the Strategic Plan of the Diabetes Initiative of South Carolina. The DSC Board of Directors provides oversight. PI: Rhonda Hill, Ph.D.

3. **The Charleston and Georgetown Diabetes Coalition—Racial and Ethnic Approaches to Community Health (REACH) 2010,** is funded by the Centers for Disease Control and Prevention (CDCP). It is working with Charleston and Georgetown counties to reduce disparities of diabetes awareness, health care access, diabetes education, and complications of diabetes complications in African Americans. PI: Dr. Carolyn Jenkins at MUSC.

4. **Bridging Barriers to Diabetes Care with Telemedicine.** The goal of this randomized clinical trial is to evaluate the effectiveness of a comprehensive diabetes self-management intervention that utilizes telemedicine to improve adherence to American Diabetes Association Clinical Practice Guidelines for adults with Type 2 diabetes living in rural South Carolina. PI: Dr. Richard Davis at USC and project Co-PI: Dr. Elizabeth Mayer-Davis at USC.

5. **The Diabetes Prevention Program Outcomes Study (DPPOS) is a follow-up to the national controlled clinical trial which demonstrated that intensive lifestyle attention to exercise and diet would lower the risk of developing type 2 diabetes. PI: Elizabeth Mayer-Davis at USC**

6. **LOOK-AHEAD.** This study will address questions of macronutrient intake in relation to cardiovascular risk factors and clinical events in persons with type 2 diabetes under conditions of either usual care or intensive weight loss intervention. USC holds a subcontract for the study wide dietary assessment and is responsible for the collection, quality control, and analysis of dietary data from the 20 clinical centers nationwide. PI: Elizabeth Mayer-Davis at USC.

7. **Treatment Options for Type 2 Diabetes in Youth Study (TODAY) is a multicenter clinical trial designed to evaluate lifestyle and pharmacologic approaches to treatment of type 2 diabetes in multicultural adolescents. PI: Elizabeth Mayer-Davis at USC**

8. **Healthy Aging in Minority Populations: Measurement Core, a cooperative project funded by NIH/NIA. It focuses on health issues of aging and African Americans. PI: Dr. Barbara Tilley and Project Co-PI: Dr. Arch Mainous at MUSC**

9. **South Carolina COBRE for Oral Health is funded by the NIH. This grant is to develop a multidisciplinary and interactive oral health program, particularly among African Americans. PI: Dr. Steven London at MUSC**
10. **Epidemiology of Diabetes Intervention and Complications (EDIC)** is a follow-up study of the course of patients enrolled in the Diabetes Control and Complications Trial (DCCT) in Charleston. Along with patients from 27 other centers in United States and Canada, this is a study of vascular complications after long-term glycemic control in type 1 diabetes. Another 10 year follow-up (2006 – 2015) is approved. PI: Dr. John A. Colwell at MUSC

11. **Emergency Department (ED) Use by African Americans with Diabetes** is funded by NIH – National Institute for Nursing Research. This qualitative/quantitative study examines non-emergent use of the ED. PI: Dr. Carolyn H. Jenkins at MUSC

12. **Lowcountry Diabetes Initiative Exercise Grant** is funded by the SC DHEC - Diabetes Prevention and Control Program. This funding was awarded to provide exercise groups in 5 churches and a Health Ministry Training. It also supplements the Med 1 Assistant program which is utilized to help with prescription assistance. PI: Valerie Muehleman, MS, RD, CDE

13. **National Kidney Foundation of South Carolina** will evaluate whether cooperative medical care between the nephrologist and a team of diabetes experts improves glucose control while slowing down the progression of kidney disease in patients above age 55. It will also evaluate if this intensified team treatment approach leads to improved patient satisfaction. An important aspect of this study is to see if this approach is feasible and practical in community-based medical centers and practices across the state and leads to less complications, better patient satisfaction, and reduce health care costs related to diabetic kidney disease. PI: Dr. Ali A. Rizvi, MD

14. **The Effects of Ethnicity and Diabetes in Risk Factor and Genetic Clustering among Cardiovascular Disease** from the American Heart Association Mid-Atlantic Affiliate. The research focuses on racial disparities involved with cardiovascular disease. It is recognized that cardiovascular disease has a significant impact in the United States and is the leading cause of death for African Americans and Caucasians. The higher prevalence of cardiovascular disease and risk factors for cardiovascular disease such as hypertension and diabetes has been demonstrated in African Americans. This study focuses on evaluating long-term risk associated with major cardiovascular disease risk factors and determining if the excess burden of cardiovascular disease among African Americans is attributable to not only higher prevalence of disease risk factors, but also a more significant risk associated with the presence of risk factors among African Americans. PI: William K. Mountford, MS at MUSC.

15. **Intravenous Insulin Protocol in Diabetes and Renal Transplantation** from the American Diabetes Association. The purpose of this study is to provide tight blood sugar control using insulin given through the veins at the time of kidney transplantation and up to 3 days after surgery. After release from the hospital, the patient will control blood sugar with insulin injections or pills. With this approach, outcomes should improve for diabetic transplant patient such as longer life of the new kidney, fewer hospital readmissions, decreased associated infections, and other advantages. This study will significantly and positively effect kidney transplantation and diabetes outcomes. Presumably, good blood sugar control at the time of kidney transplantation will improve overall survival of the new kidney, and these results may reshape patient care in this setting. PI: Dr. Kathie L. Hermayer, MD at MUSC

16. **REACH US: Center of Excellence for Eliminating Disparities** is funded by the Centers for Disease Control and Prevention and will focus on community-based participatory approaches to eliminating disparities in African Americans at risk and with diabetes. Beginning in 2008, the Center will offer Legacy funding for 2/3 counties in the Carolinas and Georgia to address diabetes prevention and control in African Americans. DSC serves as the scientific review group for the Center. PI: Dr. Carolyn Jenkins at MUSC
17. **Impact of Maternal Obesity and Diabetes on Racial Disparities in Infant Health** is awarded from the Center for Health Disparities Research at MUSC to collect preliminary data to examine whether the prevalence of high birth weight infants and maternal diabetes during pregnancy has increased and whether race/ethnic group is associated with poor maternal and infant outcomes following the birth of a high birth weight infant or an infant exposed to maternal diabetes during pregnancy. PI: Kelly Hunt, PhD at MUSC

18. **SEARCH for Diabetes in Youth 2: South Carolina Site** was previously developed during the South Carolina Diabetes Child & Adolescent Registry (SEARCH) study. This study is awarded from CDC/NIDDK (NIH). The purpose of this project is to maintain a network of standardized surveillance systems of childhood diabetes that will be targeted towards accurate documentation of the prevalence and incidence of specific diabetic phenotypes among diverse populations. PI: Elizabeth Mayer-Davis at USC

19. **HHER Lifestyle Program for CVD Risk Reduction.** The major goal of this project is to advance our understanding of how to effectively promote CVD risk reduction in health care settings among financially disadvantaged African American women ages 35 years and older. PI: D. Parra-Medina at USC; Co-PI: Elizabeth Mayer-Davis at USC.
<table>
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<th>P.I.</th>
<th>YEARLY</th>
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<td>1. EXPORT</td>
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**TOTAL** $7,170,504 $35,197,922

**Comment**

Yearly funding of programs in education, care, and clinical research focus on improving outcomes for people with diabetes in SC. Total funding is now at $35.1 million, and yearly funding exceeds $7.1 million. This yearly extramural funding is more than 26 times our current state-appropriated budget. Thus, the modest investment that the state has provided for the Diabetes Initiative of South Carolina’s core funding has paid very impressive dividends in attracting extramural support for 19 long-term projects which address a wide variety of issues relating to diabetes and its complications.
Functions
As defined by Section 44-39-50 amendment to 1976 Code of Laws for South Carolina, the Diabetes Outreach Council shall oversee and direct efforts in patient education and primary care including:
1. Promoting adherence to national standards of education and care.
2. Ongoing assessment of patient care, costs, and reimbursement issues for persons with diabetes in South Carolina.
3. Preparing an annual report and budget proposal for submission to the Diabetes Initiative of South Carolina Board.

Outreach Council Meetings
The Outreach Council of the Diabetes Initiative of South Carolina met three (3) times throughout the year. Additionally, the Statewide Coalitions met two (2) times in Spring and Fall. Five of the Coalitions presented posters at the Annual DSC Primary Care Symposium in the Fall.

Prominent 2007 Activities
REACH: Charleston and Georgetown Diabetes Coalition
REACH US: SouthEastern African American Center of Excellence for Eliminating Disparities (SEA-CEED)
The REACH: Charleston and Georgetown Diabetes Coalition, a partnership between the Charleston and Georgetown communities and MUSC College of Nursing to decrease disparities for African Americans (AfA) with diabetes, received funding to establish a Center of Excellence for Eliminating Disparities for African Americans at risk and with diabetes. Our Coalition was one of nine Centers from the original 42 REACH Coalitions that received continued funding and Center status. SEA-CEED is focused on community and systems change related to diabetes. The Diabetes Initiative serves as the Central Coordinating Agency and will provide scientific guidance, advocacy, and will assist with dissemination of activities.

Responsibilities and tasks of other partners include:

- **MUSC College of Nursing and Grants Office** - provide programmatic coordination, administrative support, transfer of funds, accountability to CDC, and office space.
- **SC DHEC Region 7** - coordinate Diabetes Self-Management Support (DSMS) with CON.
- **SC DHEC DPCP and Epidemiology** - provide training, post Coalition activities on listserv, and network with CEED to obtain and share data throughout tri-state health departments.
- **Trident United Way** - maintain Community Issues Management System and 211 HELP Line.
- **Baptist Association, Association of Church of Our Lord Jesus Christ, Tri-County Black Nurses Association, Alpha Kappa Alpha Sorority, Trident Urban League** - develop and integrate diabetes prevention and control programs into their ministries or organizations and work to incorporate trainings for other groups throughout the tri-state region and nation.
- **East Cooper Community Outreach, Franklin C. Fetter Family Health Center, St. James Santee Family Health Center, Sea Island Health Center, South Santee St. James Senior and Community Center** - provide health care sites for ongoing diabetes, HTN, and stroke activities.
- **CG-ASH, ADA, & AADE Public Health SPG** - network with SC, GA and NC associated groups to disseminate activities and support Legacy Projects.

African Americans (AfA) in South Carolina (SC) and the neighboring states of Georgia (GA) and North Carolina (NC) have very high prevalence of diabetes and the accompanying risks of hypertension (HTN), stroke, and amputations. SC ranks second in the prevalence of diabetes and first in stroke mortality. More than ¾ of AfA with diabetes have HTN, and AfA with diabetes are 2-4 times more likely to experience a stroke.

Since 1999, the REACH **Charleston and Georgetown Diabetes Coalition** (CGDC) has worked to decrease health disparities for >13,000 AfA with diabetes. For the Action Community, the CGDC and two county coalitions (Charleston Diabetes Coalition and Georgetown Diabetes CORE) will continue to facilitate local
action and ownership within these communities. CGDC aims to reduce risks and prevent complications related to HTN, stroke, and amputations in AfA at risk or with diabetes. An expanded community chronic care model (Figure 1) grounds our activities. Additionally, successful and ongoing community and systems change, increased advocacy, and policy change strategies will be modified to include intergenerational activities to reduce modifiable risks. The community action plan (CAP) is guided by a collaborative model which stresses identification of change agents, involvement in health organizations and other community organizations, with a focus on policy and systems change to enable and encourage community behavior change. Strong science will be applied within a tailored and culturally appropriate community context – as evidenced in specific protocols for community programs and health organization quality improvement initiatives. A logic model identifies levels of activity and change with parallel plans for monitoring achievement of multi-level of objectives.

The proposed SEA-CEED partnership will expand the coverage area to counties in SC, GA, and NC that have > 30% AfA. The Carolinas and Georgia Chapter of the American Society of Hypertension (CG-ASH), American Association of Diabetes Educators Public Health Practice Group (AADE PHSPG), Urban League, Alpha Kappa Alpha Sorority, and Black Nurses Association have expanded our partnership in these high-risk areas in the region, and will network with their national organizations to decrease disparities. Previous and current community development strategies will be diffused via the Legacy Projects, and multiple trainings and activities related to eliminating disparities in AfA at risk or with diabetes.
Other programs networking with Outreach Council during 2007 to address diabetes include:

**SC Medicaid Diabetes Management Program:**
The primary objective of the Diabetes Management Program is to help the Medicaid recipient adapt to the chronic diagnosis of Diabetes, learn self-management skills, educate the recipient and families to the nature of diabetes, and make important behavioral changes in their lifestyles. The target population is any Medicaid eligible recipient with Diabetes who meets the criteria for participation in the Diabetes Education Program.

The following services are provided by licensed, SC Medicaid-enrolled diabetes educators:
- Individualized Assessments
- Individualized Educational Plans
- Educational Instruction Classes
- Post Assessments
- Follow up Classes

**Select Health Case Management and Diabetes**
Managed care arm – not-for-profit; Christian based with over 22 years work in Medicaid system
- Currently provides case management for Medicaid recipients with diabetes and has approximately 1,800 enrolled Medicaid patients with diabetes.

**National Partnership to Fight Chronic Disease (PFCH) Coalition**
The PFCD is a national coalition of patients, providers, community organizations, business and labor groups, and health policy experts, committed to raising awareness of policies and practices that save lives and reduce health costs through more effective prevention and management of chronic disease.

The PFCD's mission is to:
- Challenge policymakers - in particular, the 2008 presidential candidates - to make the issue of chronic disease a top priority and articulate how they will address the issue through their health care proposals;
- Educate the public about chronic disease and potential solutions for individuals, communities, and the nation; and
- Mobilize Americans to call for change in how policymakers, governments, employers, health institutions, and other entities approach chronic disease.

**Communicare**
Communicare has served 3,740 people with diabetes statewide dispensing 29,014 prescriptions. Persons without insurance coverage who are or have been recently employed, but are unable to afford medications may apply to Communicare for assistance with their prescriptions that are available through the Communicare formulary.

**For SC Diabetes Prevention and Control Program and DSC at USC, see their reports.**

Needs identified by people with diabetes in South Carolina include:
- Affordable and accessible diabetes self-management training and ongoing support for behavior change. (Note: Diabetes self-management training is currently not covered by SC State Employees Insurance Program and typical costs for the training is around $400.)
- Affordable monitoring supplies.
Major Accomplishments

1. Conducted the following professional education programs:

<table>
<thead>
<tr>
<th>No. Courses</th>
<th>No. Attendees</th>
</tr>
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<tbody>
<tr>
<td>Thirteenth Annual Diabetes Symposium and Preconference</td>
<td>2</td>
</tr>
<tr>
<td>Certified Diabetes Educator Programs</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Coordinated ongoing programs in specialized patient education and care:
   - Intensive Diabetes Education, Awareness, and Lifestyle (IDEAL) Program: Type 1 and Type 2 patients.

3. Presented the following Academic programs:
   - Third Year Medical Student Program: Third year medical students are rotated into defined communities, with monthly assignments in the offices of carefully chosen primary care physicians. They concentrate on diabetic patients in the assigned practice. They develop community projects directed for people with diabetes as part of the rotation. In 2007 all 3rd year students in South Carolina received this experience.

4. Entered 3rd decade of study in The Diabetes Control and Complications Trial (DCCT) and Epidemiology of Diabetes Interventions and Complications (EDIC).
   This is a landmark long term study of the effect of intensive glycemic control on vascular complications in 1551 individuals with type 1 diabetes. It began as the Diabetes Control and Complications Trial (1983 – 1993), which showed conclusively, and for the first time, that intensive glycemic control would reduce the risk for progression of retinopathy, nephropathy, and neuropathy in people with type 1 diabetes by 45 – 75%. The second phase of the study, EDIC, was started in 1994 and completed in 2005. It demonstrated that the previous six years of intensive management continued to have an effect in reducing progression or retinopathy and nephropathy.
   This was seen, even though the two groups had comparable glycemic control over the second 10 years of follow-up. Importantly, recent analyses have shown, for the first time, the period of intensive glycemic management was associated with a decreased risk in macrovascular events (heart attacks, strokes). Because of the invaluable contributions of this long term study to guidelines for diabetes care and to our understanding of how to prevent diabetic vascular complications, the NIDDK(NIH) has approved EDIC investigators for another 10 years of study.
   John A. Colwell, MD, PhD has been the principal investigator in Charleston for this trial since 1983. He was instrumental in its conception, planning and design.

5. ADA Research Grant:
   Intravenous Insulin Protocol in Diabetes and Renal Transplantation
   The purpose of this study is to provide tight blood glucose control using insulin given through the veins at the time of kidney transplantation and up to 3 days after surgery. After release from the hospital, the patient will control blood sugar with insulin injections or pills. With this approach, outcomes should improve for diabetic transplant patient such as longer life of the new kidney, fewer hospital readmissions, decreased associated infections, and other advantages.
   This study will significantly and positively affect kidney transplantation and diabetes outcomes. Presumably, good blood sugar control at the time of kidney transplantation will improve overall survival of the new kidney, and these results may reshape patient care in this setting. ($600,000 annually: 7/1/07 – 6/30/10)
6. Other accomplishments:

- Assisted in the development and ongoing development, implementation and evaluation of Hospital Protocols for Intensive Diabetes Management.

Posters and publications:


Colwell, JA The Diabetes Control and Complications Trial (DCCT)/Epidemiology of Diabetes Interventions and Complications (EDIC) Research Group. Intensive Treatment of Diabetes is Associated with a Reduced Rate of Peripheral Arterial Calcification in Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC) Accepted by Diabetes Care.


**Soule JB** The Diabetes Control and Complications Trial (DCCT)/Epidemiology of Diabetes Interventions and Complications (EDIC) Research Group. Intensive Treatment of Diabetes is Associated with a Reduced Rate of Peripheral Arterial Calcification in Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC.) Accepted by *Diabetes Care*.

**Abstracts and Presentations:**
- **Arnold, PC** An Opportunity for Nursing Excellence: Diabetes Management in the Hospital” 13th Annual Spring Pharmacology in Advanced Practice Conference. Charleston, SC
- **Arnold, PC** “Hospital Diabetes Management” Oklahoma University Health Sciences Center, Oklahoma Diabetes Center, 2007. Oklahoma City, OK
- **Arnold, PC** “Hypoglycemia” Oklahoma University Health Sciences Center, Oklahoma Diabetes Center, 2007. Oklahoma City, OK
- **Arnold, PC** “Hospital Diabetes Management Update” DSC Thirteenth Annual Diabetes Fall Symposium for Primary Health Care Professionals, Sept 2007. Charleston, SC
- **Arnold, PC** “Hospital Diabetes Management” (2 four hour programs) Greenville Hospital Systems, October, 2007. Greenville, SC
- **Arnold, PC** “An Opportunity for Excellence: Diabetes Management in the Hospital” Fall Nurse Practitioner Program, October, 2007. Hilton Head Island, SC
- **Lackland DT** “Calculating CVD Risks in the Clinic” Inter-American Society of Hypertension (2007)
- **Lackland DT** “Stroke rates by Hypertension Status for White and Black Men and Women” International Society of Hypertension in Blacks (2007).
- **Lackland DT** “Hypertension and Diabetes Risks in the Southeastern United States” Ground Rounds Hypertension Research Center of Excellence Tulane University. (2007)
- **Lackland DT** “The Fetal Origins of Adult End-Stage Renal Disease” Grand Rounds Department of Nephrology Tulane University (2007)


Soule, J.B. “Introduction to Insulin Pump Therapy”. Grand rounds, MUSC Division of Endocrinology, Diabetes and Medical Genetics. September, 2007


DIABETES INITIATIVE OF SOUTH CAROLINA
SURVEILLANCE COUNCIL ANNUAL REPORT
JANUARY 1, 2007 – DECEMBER 31, 2007
Surveillance Council  
Annual Report  

Functions  
The Surveillance Council was established in 1995 to develop and implement a state-of-the-art system for the assessment of diabetes in South Carolina, and to provide a mechanism to evaluate interventions and control programs. The Council consists of diabetes care providers, epidemiologist, program specialist and researchers, and is staffed by data specialists at the South Carolina Department of Health and Environmental Control and the Medical University of South Carolina. The Council operates with formal meetings and communications.

The Council has established the following objectives:

- Develop, implement and evaluate surveillance protocols and methodologies to assess diabetes awareness and knowledge, prevalence of diabetes, access to primary care, quality of diabetes self-management, and utilization of monitoring guidelines.
- Evaluate patient and professional education programs.
- Develop and maintain a mechanism to analyze mortality, morbidity, hospitalization and survey data in production of reports to describe the burden of diabetes in South Carolina.
- Analyze the effects of co-morbidities with diabetes.
  - Establish and maintain an ongoing evaluation of the role of insurance and managed care companies in control of diabetes.
  - Function as a central unit composed of multiple organizations and disciplines involved in the surveillance of diabetes in South Carolina.
  - Function as a data and information resource for DSC and DCP and other organizations involved in diabetes control.
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Specific accomplishments related to the DSC goals are:

**Goal I:** To improve knowledge of diabetes, quality of life and access to prevention and intervention services for people at-risk and those affected by diabetes.

- Working with working team, the Council has identified baseline estimates of clinical practices regarding HbA1c, microalbumin, eye examinations, foot examinations and lipid profiles.
- Utilization of primary care was identified from the Medicaid database.

**Goal II:** To increase the utilization of short-term measures which lead to actions that will delay progression of complications of diabetes.

- Working with Hypertension Initiative and other collaborators including State Health Plan, the Council has identified baseline estimates of clinical practices regarding A1c, microalbumin, eye examinations, foot examinations and lipid profiles.
- Diabetes data and information were reported to providers through the distribution of the second Burden report as well as via the Website.
- Information regarding diabetes in South Carolina was also distributed via Diabetes Centers of Excellence, Carolina Medical Review, DCP, and through HMOs.

**Goal III:** To address the needs of people at-risk and those with diabetes by increasing services and education in health professional shortage area in South Carolina.

- The Council worked with the Office of Research and Statistics and SC AHEC to identify areas of shortages based on providers per population.
- Areas of shortage were also identified by area of underutilization based on Medicaid and similar databases.

**Goal IV:** To reduce the mortality and disability rates from diabetes-related complications.

- The Council has established access to a variety of data sources including vital records, Hypertension Initiative of SC data base, Medicaid, Medicare, hospital billing, insurance claims, and the Southeastern Kidney Council in order to establish a comprehensive data system for diabetes.
• The Council has helped establish an inventory of diabetes researchers and projects in South Carolina. The various investigators and projects will be listed on the Webpage. The annual Symposium continues to function as a forum for the investigators to meet and exchange ideas regarding diabetes in South Carolina.

• The Council has prepared and published several reports and manuscripts focused on lower extremity amputations in South Carolina and associated trends in racial disparities in diabetes-related hospitalizations that identified a possible positive effect from DSC interventions.

Goal V: To reduce the age-adjusted mortality rates from diabetes and its complications.
• Council has identified and plotted trends in mortality associated with diabetes in a manner that can be monitored and used to predict outcomes.
• The Council established measures and data sources to plot the trends.

Goal VI: To decrease risks for select groups of people with diabetes where the prevalence and complication rates exceed those of others.
• Maps have been generated to identify areas of excess risks of diabetes based on self-report, hospitalizations, and Medicaid, as well as the locations of CDEs.

Goal VII: To reduce preventable hospital admissions and charges for diabetes.
• The Council has developed a system of measures based on hospital billing data that assesses costs associated with hospitalizations associated with diabetes.

Goal VIII: To reduce preventable visits to the emergency room by people with diabetes.
• The Council has developed a system of measures based on hospital billing data that assesses costs associated with emergency room use due to conditions associated with diabetes. These results were presented at Student Research Day and the 2007 Diabetes Symposium.

Goal IX: To improve the statistical basis for estimating the prevalence of diabetes and diabetes-related complications in South Carolina.
• Trends in hospitalizations for cardiovascular disease with and without diabetes have been identified to estimate the burden of diabetes.
• A major effort in 2007 was the collaboration with the Hypertension Initiative of SC data base that includes 300,000 outpatients in SC with clinical and laboratory measurements. This data resource will be used to assess control of diabetes and associated risk factors.
• A committee was established to identify measures that estimate prevalence based on clinical values. The committee will assess Medicare, Medicaid, insurance claims, and hospital discharges to refine the estimates currently based on self-report.
• The Council has established a working relationship with the Southeastern Kidney Council to quantify the impact of diabetes on end-stage disease.

Summary Annual Report
The Surveillance Council was involved with numerous major achievements during year 13. A primary objective was the development of the evaluation plan and report format for the first 10-year strategic plan followed with the development of the second 10-year strategic. An evaluation summit was hosted by DHEC in Columbia where numerous investigators and DCS participants reviewed each of the objectives, goals and strategies with the proposed evaluation measures from the 10-year strategic plan. The specific measures and data sources were identified for each objective and goal. A writing team was formed and a writing coordinator hired. The goals of the group are 1] the preparation of the evaluation technical report that will address the detail the evaluation measure and 2] the publication of a scientific manuscript that will describe the trends in outcomes measures associated with the DSC first ten-year period. In essence, both documents will focus on trends, changes and rates during the 10-year period. These measures will then be used to design the second 10-year strategic plan. The report and manuscript will be completed by June 2008.

Three areas of focus included the surveillance of diabetes-related outcomes trends, clinical practices related to diabetes, and the continued use of the DSC webpage as a source of information and data regarding diabetes in South Carolina.

The surveillance activities for outcomes trends identified several key findings focused on amputations, cardiovascular disease hospitalizations, stroke hospitalizations, cardiomyopathy and hypertension. From 1996-2002, there were significant downward trends in the number and rate of lower extremity amputations in South Carolina as well as the United States as a whole. However, the downward trend for South Carolina was significantly greater than the trends for the US indicting that the rate of improvement may be better than the country as a whole. Likewise during this time period, the rates for cardiovascular disease and stroke hospitalizations among individuals with diabetes have been declining. Equally important, the racial disparity
gap for whites and blacks has been narrowing with progress among African Americans with diabetes showing greater improvement than their white counterparts. Similarly, no differences in case-fatality rates between hospitalized white and black individuals were detected indicating similar treatment in hospital settings in South Carolina. Likewise, cardiomyopathy remains a major complication for diabetes with similar trends and racial disparities identified in the South Carolina population. These results were reported in the *Southern Medical Journal* and *Ethnicity and Disease*.

Assessments of hypertension and diabetes identified improvements regarding outcomes among individuals with both hypertension and diabetes. While the combination of both conditions increases the risk of adverse outcomes for all individuals, the risks continue to occur earlier in life for African Americans identifying the need for early diagnosis and aggressive treatment and prevention. Analyses of the outpatient primary care patient database form. The Hypertension Initiative of South Carolina identified some improvements in the hypertension, glycemic and hyperlipidemia control levels of patients with diabetes in South Carolina. However, these analyses also identified a significant racial disparity in the control level with less than 10% of the patients with all three conditions under control. Likewise, the assessment of the Medicare beneficiaries in South Carolina by Carolina Medical Review from 2005 to 2006 identified improvements in annual eye exams from 52.85% to 54.27%; annual lipid profiles from 70.45% to 76.17%; and annual hemoglobin A1c from 81.08% to 82.99%.

The Council continued to coordinate the scientific poster session for the Diabetes Symposium in 2007. This event continues to increase in numbers and quality of research findings, and functions as a forum for describing diabetes research in South Carolina. Finally, the DCS webpage continues to be a major resource for information and data regarding diabetes in South Carolina. The number of contacts increases each month and the addition of a dedicated webmaster has increased this use.
Camp Adam Fisher, Inc. is the Carolinas’ largest overnight camp for children with diabetes. This year the camp celebrated its 40th year of existence being held for one week each year on Lake Marion in Summerton, SC. The largest number of campers, 202 and staff, 60+ attended. Medical management is a collaborative team effort between the USC School of Medicine and MUSC. Numerous medical, nursing and pharmacy students from both schools have learned about managing diabetes in children.

Many of these campers have grown up attending this camp every year. The Camp Adam Fisher “family” of medical staff, counselors and campers meet throughout the year.

Contributions of Governing Committee Members:

Recognitions:

- Faculty of the Year, USC/Palmetto Health Richland Family Medicine Residency Program, 2007
- 2007 Pharmacist of the Year, South Carolina Pharmacy Association
- Trainer for Certificate in Diabetes Management Course and Ten Cities Challenge

Publications:

Ali Rizvi, MD, CDE – Chairman, Governing Committee

- Rizvi AA. Care of patients with diabetes who are undergoing surgery. JAAPA 2007; 20(4):36-46.
- Rizvi A., Grooms, W, Okereke N, Steadman MS. Physician survey of hospital hyperglycemia and the impact of standardized subcutaneous insulin order set use in inpatient teaching services. J SCMA 2007(July);101

Beth Mayer-Davis, PhD – Professor, USC, Department of Epidemiology & Biostatistics

**Research:**

**Beth Mayer-Davis, PHD - Distinguished Carolina Professor**

1 U01 DP000254 01 Mayer-Davis (PI) 10/01/2005 - 09/30/2010

CDC, Also supported by NIH / NIDDK

SEARCH for Diabetes in Youth 2: South Carolina Site

The purpose of this project is to maintain a network of standardized surveillance systems of childhood diabetes that will be targeted towards accurate documentation of the prevalence and incidence of specific diabetic phenotypes among diverse populations. This network was previously developed during the South Carolina Diabetes Child & Adolescent Registry (SEARCH) study. Dr. Mayer-Davis is also SEARCH 2 National Study Chair.

1R01 DK077131-01 Liese 12/01/2006 - 11/30/2009

NIH

Spatial epidemiology of diabetes in the SEARCH for Diabetes in Youth Study

Purpose: This ancillary study to the SEARCH for Diabetes in Youth Study and the SEARCH Case Control study aims to (1) describe and map the spatial distribution of incident pediatric diabetes; (2) evaluate the association of diabetes incidence with geographic and neighborhood characteristics; (3) to explore the extent to which geographical and neighborhood characteristics and established individual-level risk factors are similar or different with respect to their influence of Type 1 or Type 2 diabetes.

Role: Co-Investigator
DK067312  Mayer-Davis (Co-PI) (Davis, PI)  08/01/2004 - 06/30/2008
NIH/NIDDK
Bridging Barriers to Diabetes Care with Telemedicine
The goal of this randomized clinical trial is to evaluate the effectiveness of a comprehensive diabetes self-management intervention that utilizes telemedicine to improve adherence to American Diabetes Association Clinical Practice Guidelines for adults with Type 2 diabetes living in rural South Carolina.

R-04-0000  Mayer-Davis (PI)  05/01/2003 - 01/31/2008
NIH/NIDDK, Subcontract to George Washington University
Diabetes Prevention Program Outcomes Study (DPPOS)
Evaluate approaches to the primary prevention of non-insulin dependent diabetes mellitus. USC holds a subcontract for the study wide dietary assessment and is responsible for the collection, quality control, and analysis of dietary data from the 27 clinical centers nationwide.

Mayer-Davis (PI)  07/01/2001 - 08/31/2008
NIH/NIDDK, Subcontract to Wake Forest University
Look AHEAD (Diet Assessment Center)
This study will address questions of macronutrient intake in relation to cardiovascular risk factors and clinical events in persons with type-2 diabetes under conditions of either usual care or intensive weight loss intervention. USC holds a subcontract for the study wide dietary assessment and is responsible for the collection, quality control, and analysis of dietary data from the 20 clinical centers nationwide.

5 U01-DK061230-02  Mayer-Davis (PI)  06/01/2003 - 02/28/2009
NIH/NIDDK, Subcontract to Wake Forest University
Treat Options for Type 2 Diabetes in Adolescents and Youth (TODAY)
This multi-center clinical trial is designed to evaluate lifestyle and pharmacologic approaches to treatment of type 2 diabetes in multicultural adolescents. USC holds a subcontract for the study wide dietary assessment and is responsible for the collection, quality control, and analysis of dietary data from the 18 clinical centers nationwide.

Ali Rizvi, MD
Associate Professor, Department of Internal Medicine
Grant-in-Aid Award, Richland Memorial Hospital Research and Education Foundation, 2007. Resident Research Project: Evaluation of data regarding the current state of Glucose Control at Palmetto Health Richland, and Formulating Recommendations for improving Diabetes Management and qualifying for the Joint Commission/American Diabetes Association Certificate of Distinction for Inpatient Diabetes Care ($600,000)

Sallie Ruth Coleman, BS and Ali A. Rizvi. Calcium-parathyroid metabolism, vitamin D levels, and renal function in patients with diabetes without overt kidney Disease (research study in progress)

Principal Investigator, Diabetes Control and Kidney Disease (DCK): Aggressive management of diabetes in older adults with stage 3 or 4 kidney disease is a feasible, safe, and replicable model for translational care that improves glycemic control and slows the progression of diabetic nephropathy: 2007 – (investigator-initiated study to be funded by the National Kidney Foundation, $65,400)
Prominent 2007 Diabetes Related Activities

1. **In July 2007**, the South Carolina Department of Health and Human Services contracted with the DHEC on a two-year pilot project. The purpose of this project was to integrate proven, effective, preventive, health promotion and health risk reduction strategies within one of the state’s public health region areas for the purpose of (a) improving health for all and eliminating health disparities, and (b) assuring children and adolescents are healthy. The target region is the DHEC Region 5, which consists of Calhoun, Orangeburg, Bamberg, Allendale, Barnwell and Aiken counties. The work-plan associated with the formal agreement has five (5) specific goals:

   **Goal #1** - To increase community awareness of the obesity risk factors and related cardio metabolic risk factors as well as diabetes risk factors, need for early diagnosis and self-care to prevent complications of diabetes.

   **Goal #2** - To improve healthcare provider awareness of current standards of care and testing for people with obesity, cardio metabolic risk factors and diabetes.

   **Goal #3** - To implement evidenced-based nutrition, physical activity and obesity strategies targeting women in DHEC’s family planning clinics who are identified with metabolic syndrome risk factors.

   **Goal #4** - To facilitate the development of early Childhood Healthy Lifestyles by implementing the Color Me Healthy (CMH) curriculum and the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) program in child care centers.

   **Goal #5** – To implement a childhood asthma assessment and intervention program within each of the six (6) target counties of Public Health Region 5.

The effective dates of this agreement are July 15, 2007 through June 30, 2009.

2. **For the first time** ever the Department of Health and Environmental Control (DHEC) received new state dollars for disparities and diabetes - $763,000 in recurring funds and $120,000 in one time dollars. These dollars are to fund the following three program goals in rural or very rural counties across the state with a higher than state average of African Americans and people with diabetes/obesity:

   - Establish an ADA recognized diabetes education site within one year in targeted counties.
   - Promote community awareness with Diabetes 101 presentations in rural counties and coordination of Body and Soul programs (focus on nutrition and physical activity) in African American churches.
   - Collaborate with healthcare provider (MD offices and school nurses) to improve the current standards of care and testing for people with diabetes, obesity, and cardio-metabolic risk factors. The defined outcomes include the number of MD offices that implement changes in care in their office. Examples of these changes in care will be identified through a pre and post assessment of office practices/systems of care completed by staff and the Primary Care Physician. A second outcome is office staff satisfaction with changes in care.

3. **Diabetes 101 Trainings**

   Diabetes 101 is a community awareness program targeting the rural populations of SC through predominately the African American churches. It is a curriculum developed by the SC DPCP and SC DHEC’s ADA recognized program educators to reach the underserved populations with a consistent message regarding prevention and management of diabetes. The curriculum is set up as a two-prong approach. The first part is a community presentation for people with diabetes or at risk for the disease that want to learn more information. The second part is the train-the-trainer portion where individuals within their community can be trained as presenters of the curriculum.
The SC DPCP goal is to have at least two trained educators in each county. Evaluations show that participants gain knowledge from the Diabetes 101 workshops and that this initiative is an effective avenue in meeting diabetes awareness and prevention needs of the communities.

4. **South Carolina African American Conference on Diabetes**

The 2007 African American Conference on Diabetes entitled “The Changing Faces of Diabetes” was held on Monday, November 5, 2007. The conference was held at the Brookland Baptist Conference Center in West Columbia with 690 participants, 41 exhibits with 70 vendors, and 47 staff and volunteers. The keynote speaker was, “Mother Love”, national talk show host, ADA spokesperson, and humorist. Mother Love has diabetes, but is living well and had an awesome story to share. Drs. Ronald Johnson, endocrinologist, Charlie Devlin, cardiologist and Patricia Witherspoon, general practitioner presented on *The Language of Diabetes/Ask the Doctor*; Ms. Jeanette Jordon, a Registered Dietician and Certified Diabetes Educator spoke to the participants on diabetes and nutrition; Ms. Jada Hubbard, gave exercise and stretching tips; and Ms. Gloria McDonald from the Lt. Governor’s Office of Aging gave very timely and useful information on Medicare Plans.

One of the goals of the conference is to provide diabetes education opportunities to individuals with diabetes. We asked conference participants with diabetes at the 2006 conference to sign up if they were willing for us to call them four times a year to ask them about their diabetes care and what they learned from the conference. During the lunch hour of the 2007 conference, the 112, 2006 one-year follow-up participants were recognized and presented with certificates of recognition along with gray diabetes awareness pins. A new cohort of follow-up participants was solicited during this conference and will receive a phone call once a quarter concerning their diabetes care and how they are using what they learned from the 2007 conference.

5. **Local Diabetes Coalitions**

The SC DPCP continues to provide technical assistance to local coalition chapters related to skill building exercises, creative partnering and resource finding, grant writing workshops, and mini-grants. The SC DPCP is funding five coalitions for FY 07 – 08. All funded coalitions are past recipients of mini-grants offered by the DPCP.

Capacity building funding in the amount of $3000
- Lancaster County Diabetes Coalition (Region 3)
- Horry County Diabetes Coalition (Region 6)
- Charleston Diabetes Coalition (Region 7)

Basic implementation funding in the amount of $14,000
- Low Country Diabetes Initiative (Region 8)
- Williamsburg Diabetes Education and Control Coalition (Region 6)

*Coalition activities planned for this grant cycle include Diabetes Today Training, Diabetes 101, Health Ministry Training, implementation of the WiseMan and New Leaf Curriculums, developing or updating a diabetes community resource directory, conducting Diabetes Road Shows, hosting "Ask the Doctor" community sessions, hosting community mini-diabetes conferences, and developing physical activity and nutrition programs within local faith communities. The funding period began August 1, 2007 and will end March 29, 2008.*

6. **Statewide Coalition Meeting**

The South Carolina Diabetes Prevention and Control Program and the Diabetes Initiative of South Carolina (DSC) sponsored the Sixth Annual Statewide Diabetes Coalition Meeting on Wednesday, September 12, 2007 from 12:30 pm – 5:00 pm in Charleston, SC at the Embassy Suites Convention Center. The first part of the meeting reinforced with the funded coalitions a new structure that was put in place to ensure financial accountability. The second part of the meeting focused on Strategic/Program Planning, and how to successfully market their coalition. The presenter was Mrs. Tammy B. Washington, Health Education Specialist with Butler and Associates.

The Statewide Coalition meeting was held in conjunction with the 13th Annual Diabetes Fall Symposium for Primary Health Care Professionals, on September 13, 2007. In addition to the coalition meeting and the Symposium, the 8th Annual Scientific Poster Session was also held. All five
of the coalitions that are currently funded by the DPCP through mini-grants developed and submitted an abstract showcased their hard work within their community during the poster session. Each coalition received a certificate of participation and the top three posters – Williamsburg Diabetes Education and Control Coalition, Low Country Diabetes Initiative, and Horry County Diabetes Coalition respectively received monetary awards from DSC.

7. IMARA Woman Partnership (Media Campaign)
DHEC’s DPCP and the Office of Minority Health (OMH) have a collaborative partnership with the IMARA Woman Magazine, Inc., a personal lifestyle and growth magazine, targeting women of color. OMH provides health promotion advertisements and coordinates the development and inclusion of articles, which address their six health disparate areas. The DPCP also provides health promotion advertisements as well as articles in each issue on diabetes and other related chronic diseases and risk factors. The readership of the magazine is 60,000 and their distribution is statewide in South Carolina.

Both the DPCP and OMH help to co-sponsor the annual 3-city IMARA Health Ministry Empowerment Tour. The tour is an educational outreach initiative, which provides, in addition to other lifestyle and growth issues, interactive health related workshops and health screenings. The 2007 tour was held this past October in Hopkins (10/13), Denmark (10/20), and Spartanburg (10/27) and featured Dr. Tonea Stewart, an actress, educator, and motivational speaker.

The total attendance for all three stops was 748 participants. IMARA Woman is still compiling the overall evaluation summary and the results should be available around mid December. In addition, the DPCP developed and distributed surveys to the tour participants to assist us in determining new topics for the magazine’s health related ads and articles for 2008 as well as providing information to allow us to generalize the readership’s overall health status and risk behaviors.

8. Community Health Center Collaboration
SC DHEC’s South Carolina Diabetes Prevention and Control Program have Memorandum of Agreements (MOA) with 15 Community Health Centers (CHCs) that are involved in the HRSA health disparities collaborative. Our collective mission for this agreement is to work together in the counties where the CHCs have clinics to improve diabetes outcomes for people with diagnosed diabetes. The purpose of the MOA is to identify specific responsibilities of the center and to enhance diabetes outcomes and overall program success. Outcomes of interest that are obtained from the data that the CHCs provide include: A1C, eye exams, foot exams, flu shots, pneumonia shots, diabetes self-management education and patient demographic information. The CHCs that the program is currently working with include:

1. Beaufort-Jasper-Hampton Comprehensive Health Services, Inc. (Ridgeland)
2. Black River Healthcare, Inc (Manning)
3. CareSouth Carolina, Inc. (Hartsville)
4. Carolina Health Centers, Inc. (Greenwood)
5. Family Health Centers, Inc. (Orangeburg)
6. Health Care Partners of SC, Inc. (Conway)
7. Little River Medical Center, Inc (Little River)
8. Low Country Health Care Systems, Inc. (Fairfax)
9. Margaret J. Weston Medical Center, Inc. (Clearwater)
10. New Horizon Family Health Services, Inc. (Greenville)
11. Regenesis Community Health Centers, Inc. (Spartanburg)
12. Richland Community Health Care Association, Inc. (Columbia)
13. Sandhills Medical Foundation, Inc. (Jefferson)
14. St. James-Santee Family Health Centers, Inc. (McClellanville)
15. Sumter Family Health Center, Inc. (Sumter)

9. The Fifth Annual Diabetes/CVH Winter Symposium: Evidence-Based Management – Improving Diabetes & Cardiovascular Care: It Takes A Team was held on February 23 and 24, 2007 at the Crown Reef Resort and Convention Center in Myrtle Beach, SC. There were approximately 160 healthcare providers present and both days were filled with evidence-based information as well as how to work better as a team. This year's topics concentrated on improving diabetes & cardiovascular care using a team approach. The topic titles included:

   o State of the State of Diabetes & Cardiovascular Health
- What a Difference a T.E.A.M. Can Make
- Diabetes & Cardiovascular Care: How Much of What the Evidence Shows Are We Putting into Practice?
- Cardiometabolic Syndrome: How is it Related to Diabetes & Cardiovascular Diseases?
- Integrating the TEAM Approach for Diabetes & CVH Care: The Chronic Care Model.
- Implementing The Chronic Care Model: The TEAM Approach. Panel Discussion.
- Hospital Diabetes Care: Link to Provider/Out Patient Management.
- Cultural and Health Disparity Relevant Issues for African American Males with Diabetes & Cardiovascular Conditions.
- Pharmacology Update for Treatment of Diabetes & Cardiovascular Diseases

Recipients of the recognition awards were as follows:

- DHEC Regional Diabetes Educator of the Year – Joanna Bentley, RN, CDE; Trident Public Health District – Region 7
- Certified Diabetes Educator of the Year – Linda McDougal, RN, CDE; Edisto Savannah Public Health District – Region 5
- Health Care Provider of the Year Award – Olajide Balogun, MD; Apex Care
- Community Health Center of the Year – Margaret J. Weston Community Health Center in Clearwater, SC

Fourteen out of 19 invited Community Health Centers in the state participated in the event. Also, diabetes educators, nurses, dietitians, social workers, and health educators from the local health departments were in attendance. The make-up of the symposium attendees is significant because they are the ones who take care of the majority of indigent patients and people with low socioeconomic status who are disproportionately affected by diabetes/CVD and other chronic disease complications in the state. Continuing Education credits for physicians, nurses, dietitians, and social workers were provided.

10. The SC DPCP continues to focus on the five clinical areas in their CDC grant, to demonstrate success in achieving an increase in the percentage of persons with diabetes at the CHCs who receive recommended foot exams, eye exams, flu and pneumonia vaccines, dilated eye exams, and hemoglobin A1C tests. Below is a summary of the aggregated data from October 2006 – October 2007.
<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Site A</th>
<th>Site B</th>
<th>Site C</th>
<th>Site D</th>
<th>Site E</th>
<th>Site F</th>
<th>Site G</th>
<th>Site H</th>
<th>Site I</th>
<th>Site J</th>
<th>Site K</th>
<th>Site L</th>
<th>Site M</th>
<th>Site N</th>
<th>Site O</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number DM Patients in Registry</strong></td>
<td>12670</td>
<td>1427</td>
<td>205</td>
<td>3130</td>
<td>1839</td>
<td>612</td>
<td>413</td>
<td>929</td>
<td>NA</td>
<td>481</td>
<td>NA</td>
<td>699</td>
<td>250</td>
<td>2351</td>
<td>150</td>
<td>184</td>
</tr>
<tr>
<td><strong>Number DM Patients w one HbA1c (12 months)</strong></td>
<td>8375</td>
<td>570</td>
<td>176</td>
<td>2382</td>
<td>819</td>
<td>577</td>
<td>180</td>
<td>621</td>
<td>NA</td>
<td>136</td>
<td>NA</td>
<td>427</td>
<td>177</td>
<td>2000</td>
<td>143</td>
<td>167</td>
</tr>
<tr>
<td><strong>Percent DM Patients w one HbA1c (12 months)</strong></td>
<td>66.1%</td>
<td>39.9%</td>
<td>85.9%</td>
<td>76.1%</td>
<td>44.5%</td>
<td>94.3%</td>
<td>43.6%</td>
<td>66.8%</td>
<td>NA</td>
<td>28.3%</td>
<td>NA</td>
<td>94.3%</td>
<td>70.8%</td>
<td>85.1%</td>
<td>NA</td>
<td>95.3%</td>
</tr>
<tr>
<td><strong>DM Patients with Two HbA1c (12 months)</strong></td>
<td>4628</td>
<td>169</td>
<td>90</td>
<td>1306</td>
<td>206</td>
<td>390</td>
<td>32</td>
<td>234</td>
<td>NA</td>
<td>54</td>
<td>NA</td>
<td>270</td>
<td>114</td>
<td>1503</td>
<td>124</td>
<td>136</td>
</tr>
<tr>
<td><strong>Percent DM Patients with Two HbA1c (12 months)</strong></td>
<td>36.5%</td>
<td>11.8%</td>
<td>43.9%</td>
<td>41.7%</td>
<td>11.2%</td>
<td>63.7%</td>
<td>7.7%</td>
<td>25.2%</td>
<td>NA</td>
<td>11.2%</td>
<td>NA</td>
<td>38.6%</td>
<td>45.6%</td>
<td>63.9%</td>
<td>82.7%</td>
<td>73.9%</td>
</tr>
<tr>
<td><strong>Average HbA1c for DM Patients</strong></td>
<td>7.47</td>
<td>7.53</td>
<td>8.00</td>
<td>7.67</td>
<td>7.60</td>
<td>7.40</td>
<td>7.40</td>
<td>7.50</td>
<td>NA</td>
<td>7.70</td>
<td>NA</td>
<td>7.60</td>
<td>8.20</td>
<td>7.00</td>
<td>7.70</td>
<td>7.43</td>
</tr>
<tr>
<td><strong>Dilated eye exam in last year</strong></td>
<td>660</td>
<td>111</td>
<td>9</td>
<td>0</td>
<td>18</td>
<td>56</td>
<td>53</td>
<td>99</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>6</td>
<td>308</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Percent DM patients with dilated eye exam in last year</strong></td>
<td>5.2%</td>
<td>7.8%</td>
<td>4.4%</td>
<td>NA</td>
<td>1.0%</td>
<td>9.2%</td>
<td>12.8%</td>
<td>10.7%</td>
<td>NA</td>
<td>0.0%</td>
<td>NA</td>
<td>0.0%</td>
<td>2.4%</td>
<td>13.1%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Foot exam in last year</strong></td>
<td>4037</td>
<td>68</td>
<td>70</td>
<td>1417</td>
<td>872</td>
<td>332</td>
<td>111</td>
<td>351</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>96</td>
<td>592</td>
<td>128</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Percent DM patients with foot exam in last year</strong></td>
<td>31.9%</td>
<td>4.8%</td>
<td>34.1%</td>
<td>45.3%</td>
<td>47.4%</td>
<td>54.2%</td>
<td>26.9%</td>
<td>37.8%</td>
<td>NA</td>
<td>0.0%</td>
<td>NA</td>
<td>38.4%</td>
<td>25.2%</td>
<td>85.3%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td><strong>Influenza vaccination (12 months)</strong></td>
<td>1350</td>
<td>168</td>
<td>47</td>
<td>492</td>
<td>186</td>
<td>135</td>
<td>36</td>
<td>92</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>86</td>
<td>30</td>
<td>NA</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td><strong>Percent DM patients with influenza vaccination (12 months)</strong></td>
<td>10.7%</td>
<td>11.8%</td>
<td>22.9%</td>
<td>15.7%</td>
<td>10.1%</td>
<td>22.1%</td>
<td>8.7%</td>
<td>9.9%</td>
<td>NA</td>
<td>0.0%</td>
<td>NA</td>
<td>0.0%</td>
<td>34.4%</td>
<td>1.3%</td>
<td>0.0%</td>
<td>42.4%</td>
</tr>
<tr>
<td><strong>Pneumococcal vaccine</strong></td>
<td>1473</td>
<td>463</td>
<td>48</td>
<td>0</td>
<td>185</td>
<td>176</td>
<td>68</td>
<td>229</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>30</td>
<td>NA</td>
<td>128</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td><strong>Percent DM patients with pneumococcal vaccine</strong></td>
<td>11.6%</td>
<td>32.4%</td>
<td>23.4%</td>
<td>NA</td>
<td>10.1%</td>
<td>28.8%</td>
<td>16.5%</td>
<td>24.7%</td>
<td>NA</td>
<td>0.0%</td>
<td>NA</td>
<td>0.0%</td>
<td>12.0%</td>
<td>0.0%</td>
<td>85.3%</td>
<td>79.3%</td>
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</tbody>
</table>
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## Intensive Management of Hospitalized Diabetic Patients

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Sharm Steadman, PharmD, CDE  Department of Family/Preventive Medicine, USC School of Medicine
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
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<tbody>
<tr>
<td>Yaw Boateng, MS, MPH, RD, CDE</td>
<td>Health Systems Coordinator</td>
</tr>
<tr>
<td>Gwen A. Davis, MN, RN, CDE</td>
<td>Diabetes Self-Management Educator</td>
</tr>
<tr>
<td>Barbara Wright Downs</td>
<td>Lay Health Facilitator</td>
</tr>
<tr>
<td>Sandra Flynn, PhD, MSW</td>
<td>Community Health Evaluator</td>
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<td>Rhonda L. Hill, PhD, CHES</td>
<td>Division Director</td>
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<tr>
<td>Michelle Moody, BA, CHES</td>
<td>Statewide Coalition Coordinator</td>
</tr>
<tr>
<td>Patsy Myers, DrPH</td>
<td>Epidemiologist</td>
</tr>
<tr>
<td>Lanique Stepney</td>
<td>Program Assistant</td>
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