AGENDA

I. Call to Order
   J. Bruch

II. Minutes of December 5, 2014 meeting
    J. Bruch

III. Nominating Committee
    J. Bruch
    A. Nominations
    B. New representative for the DHEC Office of Minority Health
       Jacqlyn Baylis, MPH, CHES
    C. New representative for the SC Medical Association
       Bryce Nelson, MD

IV. Council Reports
    A. Outreach Council
       C. Jenkins/E. Heckel
    B. Diabetes Center Council
       P. Arnold
    C. Surveillance Council
       All

V. SC DHEC
   R. Hill

VI. Intensive Management of Diabetes in the Hospital Task Force
    K. Reeves

VII. Old Business
     A. Strategic Plan Update
        J. Benke-Bennett
     B. 2014 DSC Annual Report
        J. Benke-Bennett
     C. Diabetes Under the Dome2015
        J. Benke-Bennett
     D. SC Guidelines for Diabetes Care update for 2015
        P. Arnold

VIII. New Business

Adjournment

Future meetings:  
June 5, 2015 (Charleston)  
September 4, 2015 (Columbia)  
December 4, 2015 (Charleston)
December 30, 2014

John S. Bruch, M.D., FACE
Medical Director Diabetes Services
Endocrinology Specialists and Thyroid Center
University Medical Group
Greenville Health System
877 West Paris Road, Suite D
Greenville, SC 29605

Dear Dr. Bruch,

On behalf of the South Carolina Medical Association and its Board of Trustees, it gives me great pleasure to nominate Dr. Bryce A. Nelson for the vacant seat on the Diabetes Initiative of South Carolina Board.

Dr. Nelson is a member of the South Carolina Medical Association and currently practices at GHS Pediatric Endocrinology in Greenville. He is Board Certified by the American Board of Pediatrics and is currently affiliated with Greenville Hospital System. Dr. Nelson has demonstrated leadership through several distinguished leadership roles and honors, including: Pediatrician of the Year from Greenville Hospital System Children's Hospital and the John P. Matthews, Jr, MD Outstanding Faculty Teaching Award from Greenville Hospital System Children's Hospital.

We feel strongly that Dr. Nelson would make a great addition to the Diabetes Initiative of South Carolina Board and it is an honor to nominate him for such a position.

If you have any questions or concerns, please reach the SCMA directly at 1-800-327-1021 or by email at kcrooby@scmedical.org.

Sincerely,

[Signature]

H. Tim Pearce, MD
SCMA President
2014-15

HTP/gtc

cc Bryce A. Nelson, MD, PhD
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.

WEBSITE: www.musc.edu/diabetes

Prominent Activities this quarter:
Elizabeth Todd Heckel
- Family Practice Diabetes Education Groups; 1st and 3rd Tuesday of every month; Educators: Sharm Steadman, PharmD, CDE; Ramsey Makhuli, MPH; 6-12 participants.
- Individuals, 2nd and 4th Tuesday’s, Wednesday’s.
- Diabetes Today Advisory Committee (DTAC), 3rd Wednesday of every month; sponsor of SC Conference on Diabetes, Brookland Baptist Church, November 3, 2015.
- Planning Committee Member and Attendee, DHEC 13th Annual Diabetes/Heart Disease and Stroke Prevention Winter Symposium, Myrtle Beach, March 13,14, 2015.
Diabetes Initiative of South Carolina
Diabetes Center Council
Quarterly Report
March 6, 2015

Professional Education Activities:

- Diabetes Strategies; February 3 and 4, 2015, North Charleston Convention Center, North Charleston, SC. Day 1 = 86 attendees; Day 2 = 78 attendees.
- Diabetes Under the Dome: March 25, 2015
- 21th Annual Diabetes Fall Symposium for Primary Health Care Professionals; September 17th and 18th, 2015, North Charleston Convention Center, North Charleston, SC.
- Updated Diabetes Initiative of South Carolina Screening Forms:
  - Are You at Risk for Developing Diabetes?
  - Persons with Diabetes, What are Your Risks for Developing Complications or Problems?
- Updated South Carolina Guidelines for Diabetes Care 2015
- Conference call on DSC 10 year Strategic Plan
- DSC 2014 Annual Report completed

Meetings:

- MUSC Hospital Diabetes Task Force.
- Hospital Quality Committee.
- MUSC ADA Chair, Diabetes Advisory Committee
### South Carolina Guidelines for Adult Diabetes Care in the Hospital – 2015

**Key concepts:** documentation of diabetes diagnosis; written blood glucose monitoring protocols; order consistent carbohydrate diet; protocols for treatment of hypoglycemia and hyperglycemia, data collection; standardized order entry; staff education, patient education - hospital and post-discharge; special considerations and patient safety.

<table>
<thead>
<tr>
<th>Screening for Diagnosis of Diabetes:</th>
<th>Planning for Care</th>
<th>Preventing complications and severe hyperglycemia:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To test for diabetes or to assess risk of future diabetes, either Hemoglobin A1C, Fasting Plasma Glucose (FPG), or 2-h 75 g Oral Glucose Tolerance test (OGTT) are appropriate. An A1C level of 5.7% to 6.4% indicates increased risk for diabetes (pre-diabetes). The criteria for the diagnosis of diabetes (indicated by one of the following): 1. A1C level of 6.5% or higher 2. FPG level of &gt; 126 mg/dL 3. Two hour OGTT level of &gt; 200 mg/dL Prevention/delay of type 2 diabetes: refer to support program targeting weight loss of 7% of body weight and physical activity to at least 150 min/week (i.e. Diabetes Prevention Program). In those identified with prediabetes, identify, and if appropriate, treat other CVD risks. Reference: American Diabetes Association, Standards of Medical Care in Diabetes – 2015. Diabetes Care, Volume 38, Supplement 1, January 2015. <a href="http://care.diabetesjournals.org/content/38/Supplement1/toc">http://care.diabetesjournals.org/content/38/Supplement1/toc</a></td>
<td>Diabetes Diagnosis</td>
<td>Hemoglobin A1C</td>
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</table>

### Diabetes Diagnosis

Diagnosis should be clearly identified in the medical record (MR) by the physician using current classification:

- **Diabetes Type:** type 1, type 2, suspect type 1, suspect type 2, CF related diabetes, gestational, pre-diabetes or other (drug or stress induced)

### Hemoglobin A1C

Order A1C if not able to document level in MR within 90 days of admission (excluding gestational) and/or prior to elective surgery to assess glycemic control.

### Whole Blood Glucose (WBG) Point of Care (POC) Testing

Written protocols or orders for WBG POC testing to include frequency and individual plan for subsequent monitoring. WBG POC testing results should be available to all members of the health care team. WBG POC testing policy should include limitations of WBG POC testing in critically ill patients defined by the institution (i.e., hypothermia, anasarca, pressors, etc.).

### Diet Order

- **Diet orders** should be based on body weight and comorbidities (NPO, PO, Enteral and Parenteral Nutrition)
- **Consistent carbohydrate** should be provided or added to other diet orders
- **Written policy/protocol** for the coordination of WBG POC testing, insulin administration and meal tray delivery
- **Nutrition consult ordered,** if indicated

### Insulin Therapy

Insulin therapy should be initiated per written orders sets. Insulin therapy is the preferred method during hospitalization. In critical care units, IV infusion is the preferred route of insulin administration with goals for blood glucose levels of 140-180mg/dL. More stringent goals such as 110-140mg/dL may be appropriate in select patients. In non-critically ill patients, scheduled subcutaneous insulin with basal, nutritional and correctional components is the preferred method with a goal of 100-180mg/dL

- **Basal insulin:** to control glucose between meals and suppress overnight hepatic glucose production (NPH, glargine, detemir, U-500)
- **Prandial/nutritional insulin:** to cover carbohydrate load from meals or enteral nutrition - give as rapid acting insulin analog with meals (aspart, lispro, glulisine)
- **Correction insulin (give as rapid acting insulin analog):** to correct pre-meal hyperglycemia
- **The sole use of Written protocols and order sets to include:**

### Hypoglycemia

Written policy, protocol and/or order set for treatment of hypoglycemia. Hypoglycemia is defined as a blood glucose (BG) < 70 mg/dL. Severe hypoglycemia is defined as <50 mg/dL. Written nurse driven protocols and order sets to include:

- **Treatment for hypoglycemia:** and a plan for prevention of hypoglycemia for each patient
- **Treatment for hypoglycemia:** and a plan for prevention of hypoglycemia for each patient

### Treatment of hyperglycemia (Diabetic Ketoacidosis [DKA] and Hyperosmolar Hyperglycemic Syndrome [HHS])

Written protocols and order sets to include:

- Fluid replacement
- Correct electrolytes
- Low dose insulin therapy
- Hourly BG testing when patient is receiving IV Insulin infusion
- Policy for transitioning from IV Insulin Infusion to subcutaneous insulin regimen (i.e., basal insulin given 2 hours prior to discontinuing IV Insulin Infusion)

### Data Collection

Hospitals are encouraged to collect data on incidences of hypoglycemia and reasons as well as other identified opportunities for improvement.

### Standardized written protocols and order sets

Standardized written policies, protocols and order sets are recommended to integrate components of care, preserve the necessary complexity of management of diabetes, standardize order entry, protect the safety of the patient, facilitate patient individualization, and permit patient self-management, where appropriate. This includes:

- WBG POC Testing
- Hemoglobin A1C
- Consistent carbohydrate diet
- Hypoglycemia protocol
- Insulin Order Set: Basal, prandial/nutritional and correction
- IV Insulin Infusion, transition from IV Insulin Infusion to subcutaneous insulin administration and transition to home regimen prior to discharge
- Continuous Subcutaneous Insulin Infusion Pump Therapy (CSII)

### Staff Education

The following groups have education specific to policies, protocols, order sets and patient management related to diabetes: dietitians and others involved in medical nutrition therapy, staff involved in WBG POC testing, medical staff, nursing staff including advanced practice, pharmacists, physician assistants and interdisciplinary team.

### Transitioning for Discharge

Preparing the patient for discharge should include:

- Medication reconciliation including an explanation of medication changes, pending tests and studies with patient and caregivers
- Diabetes education (medication, nutrition, exercise, hypoglycemia, hyperglycemia, BG monitoring, sick day guidelines, discharge and contact information)
- Document in MR a diabetes follow-up appointment after hospital discharge and other provider appointments, if applicable
- Referral to ADA recognized or AADE accredited Diabetes Self-Management Education/Training (DSME/T) Program if applicable

### Specific Settings/Populations

Written protocols and order sets are recommended for the following patients with diabetes:

- Perioperative and pre-procedural
- Gestational

Adopted: March 6, 2015
Diabetes Initiative of South Carolina

2015 Strategic Plan Draft Priorities/Goals

1. Assess the impact and challenges related to the epidemic of diabetes and prediabetes in South Carolina.

2. Advance public policy to reduce morbidity and mortality associated with diabetes.

3. Promote culturally appropriate comprehensive programs and services for the prevention and control of diabetes.

4. Increase public awareness, promote community outreach, and deliver culturally appropriate education to reduce preventable hospital admissions, readmissions and emergency room use associated with diabetes.

5. Improve diabetes care and management by health care professionals to delay progression of diabetes-related complications and improve the quality of life.

6. Strive to improve access to high-quality care and to reduce the socioeconomic burden from diabetes and its complications in rural, underserved, diverse and minority populations.
South Carolina Guidelines for Diabetes Care – 2013

Key concepts: goals should be individualized; certain populations (children, pregnant women, and elderly) require special considerations; less intensive glycemic goals may be indicated in patients with severe or frequent hypoglycemia; more intensive glycemic goals may further reduce microvascular complications at the cost of increasing hypoglycemia; postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals.

<table>
<thead>
<tr>
<th>Screening for Diabetes</th>
<th>Diagnosis of Diabetes</th>
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<tbody>
<tr>
<td>To test for diabetes or to assess risk of future diabetes, either A1C, Fasting Plasma Glucose (FPG), or 2-h 75-g Oral Glucose Tolerance Test (OGTT)</td>
<td>(OGTT) are appropriate. An A1C level of 5.7% to 6.4% indicates increased risk for diabetes. The presence of diabetes is indicated by: A1C level of 6.5 % or higher; FPG level of ≥ 126 mg/dL; GTT level ≥ 200 mg/dL.</td>
</tr>
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</table>


| Prevention/delay of type 2 diabetes: refer to support program targeting weight loss of 7% of body weight and physical activity to at least 150 min/week. |
| In those identified with prediabetes, identify and if appropriate, |

<table>
<thead>
<tr>
<th>Exam/Test</th>
<th>Care of the Person with Type 1 Diabetes</th>
<th>Care of the Person with Type 2 Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete exam</td>
<td>To classify the patient, detect complications, develop a management plan, and provide a basis for continuing care.</td>
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<tr>
<td>Office visits</td>
<td>Quarterly, but dictated by severity of condition and response to treatment; if uncontrolled, visits may be more often.</td>
<td>Inform the relatives of patients with type 1 diabetes of the opportunity to be tested for type 1 diabetes risk, but only in the setting of a clinical research study.</td>
</tr>
<tr>
<td>Body Mass Index (Weight each visit; Height 1x/year) and/or Waist Circumference</td>
<td>Each visit with goal of reducing BMI to reasonable weight (Overweight 25-29.9; Obese ≥ 30) if you are a woman with a waist circumference of at least 35 inches (88 cm) or a man with a waist circumference of at least 40 inches (102 cm), you are at greater risk, regardless of your BMI. It is not necessary to take this measurement if your BMI is 35 or above. In Asian population, central (abdominal) obesity is defined as waist circumference ≥ 31 inches (80 cm) for a woman and ≥ 35 inches (90 cm) for a man.</td>
<td>Reference: International Diabetes Federation (IDF) Consensus Worldwide Definition of the Metabolic Syndrome</td>
</tr>
<tr>
<td>A1C: Goal: A1C &lt;7.0%</td>
<td>Quarterly (E), then 2x/year if meeting goal; more stringent goals (&lt;6.0%) may further reduce complications at the cost of increased risk of hypoglycemia and may be considered in individual patients (B). If older adult with hypoglycemia, goal may be 7.5% and avoidance of hyper/hypoglycemia episodes leading to autonomic complications. Goal &lt;8% if history of severe hypoglycemia, advanced complications or limited life expectancy. Use of POC testing provides opportunity for more timely treatment change.</td>
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<tr>
<td>Blood pressure</td>
<td>Each visit. Prescribe medication for BP ≥140/90mm Hg along with lifestyle change. ACE-I or ARB recommended for treatment of hypertension (A). If prescribed more than 3-4 anti-hypertensive medications to achieve target, then examine risks vs. benefits of goal of &lt;140/85 (E).</td>
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<td>Lipid profile: Goal levels:</td>
<td>Annual test and more often if needed:</td>
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<tr>
<td>&lt;100 mg/dL LDL</td>
<td>Treatment initiation and initial dose driven by risk status – not LDL-C level.</td>
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<tr>
<td>&lt;70 mg/dL LDL if very high risk (or overt CVD)</td>
<td>Age</td>
<td>Risk Factors</td>
</tr>
<tr>
<td>&gt;50 mg/dL HDL in men</td>
<td>-40</td>
<td>CVD risk factors</td>
</tr>
<tr>
<td>&lt;150 mg/dL in women</td>
<td>50-79</td>
<td>Overt CVD</td>
</tr>
<tr>
<td>Triglycerides to achieve goals: Every 2 years if low risk (LDL &lt;100, HDL &gt;50, triglycerides &lt;150) (E).</td>
<td>80-100</td>
<td>Overt CVD</td>
</tr>
<tr>
<td>Statin therapy should be added to lifestyle therapy, regardless of baseline lipid levels, for diabetic patients (A).</td>
<td>&gt;100</td>
<td>CVD risk factors</td>
</tr>
<tr>
<td>With overt CVD (A)</td>
<td>&gt;150</td>
<td>Overt CVD</td>
</tr>
<tr>
<td>Without CVD who are ≥40 years and have one or more other CVD risk factors (A).</td>
<td>&gt;200</td>
<td>CVD risk factors</td>
</tr>
<tr>
<td>Serum creatinine (regardless of albumin and calculated GFR)</td>
<td>Measure annually in all adults with diabetes and stage level of CKD if present (E).</td>
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<tr>
<td>Assessed urine albumin excretion with: Urine microalbumin/creatinine (RANDOM testing is preferred method)</td>
<td>Screening at diabetes diagnosis, initial medical evaluation, and/or at age 48. Every 1 – 2 years thereafter.</td>
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<td>Spot collection: &lt;30 mg Cr</td>
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<tr>
<td>Aspirin therapy 75-162 mg/day</td>
<td>For all with type 1 or type 2 (unless contraindicated) with increased cardiovascular risk for primary prevention, including most men &gt; age 50 and women &gt; age 60 with additional CVD risk factor; as secondary prevention for all with history of CVD (A).</td>
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<tr>
<td>Dilated eye exam by an ophthalmologist or optometrist knowledgeable and experienced in diagnosing and managing diabetic retinopathy</td>
<td>Within 3-5 years after onset of diabetes once patient is age 10 years or older, then annually; less frequent exams (q 2-3 years) may be considered when eye exam normal (B).</td>
<td>Shortly after diagnosis of diabetes; less frequent exams (q 2 – 3) years may be considered when eye exam normal.</td>
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<tr>
<td>Foot examination</td>
<td>Visual inspection at each visit. Comprehensive exam annually to include vascular (pulses, temperature, color, digital capillary refill, ABI if abnormal exam cephalic or high risk), neurologic (at least 2 of following: monofilament, vibratory perception, tactile sensation, reflexes), dermatologic (general skin turgor/texture) focal lesions, interdigital calluses, maceration, nails) musculoskeletal (ROM, foot type, digits, bony prominences), &amp; footwear (E).</td>
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<tr>
<td>Self-monitored blood glucose</td>
<td>Three or more times daily for patients using multiple insulin injections or insulin pump therapy (A), including before meals or snacks, and occasionally postprandially, at bedtime, and prior to exercise. May be helpful to guide treatment/self-management for patients using less frequent insulin injections or non-insulin therapies (E).</td>
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<tr>
<td>Goals for plasma values</td>
<td>Preprandial glucose ≤180 mg/dL</td>
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<tr>
<td>Peak post-prandial glucose ≤130 mg/dL</td>
<td>Review self-management goals</td>
<td>Each visit emphasize glycemic and hypertension control; weight loss is recommended for all overweight or obese individuals at risk for or with diabetes (A) using Mediterranean, low fat/calorie restricted or low-carbohydrate diet. At least 150 minutes per week of moderate-intensity aerobic physical activity (A)*; if there are no contraindications, people with type 2 diabetes should be encouraged to perform resistance training 3 times/week (A); review eating patterns with emphasis on carbohydrate, sodium (if hypertensive), and saturated fats; monitoring carbohydrate is a key strategy in glycemic control (A); Saturated fat should be &lt; 7% of total calories (A); minimize intake of trans fat (E); substitute monounsaturated fat for saturated and trans fat (AACE). Encourage dietary fiber of 14 g of fiber/1,000 kcal and whole grain foods (at least one-half of grain intake) (B). Limit daily alcohol to 1 drink or less for women and 2 drinks or less for men (E). For lipid management, increase omega 3 fats, viscous fiber, and plant stanols/sterols; reduce saturated fat, trans fat and dietary cholesterol (A). In patients with hypertension, encourage DASH** style dietary pattern including reducing sodium and increasing potassium intake (B).</td>
</tr>
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<table>
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<tr>
<th>Exam/Test</th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycemia</td>
<td>The preferred treatment is glucose (15-20 grams) for a conscious individual, however any glucose containing carbohydrate is appropriate. If SMBG fifteen minutes after treatment demonstrates persistent hypoglycemia, then repeat treatment. When SMBG returns to normal, the person should eat a meal or snack to prevent hypoglycemia recurrence.</td>
<td>Prescribe glucagon 1 mg SC/IM for all individuals at significant risk of severe hypoglycemia. If patient drives, assess patient's medical history for loss of consciousness and ability to drive.</td>
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<tr>
<td>Self-care education</td>
<td>At least once, update as needed to reach/maintain goals; (Subcommittee recommends to: use AACE 7 Guidelines) Education should be individualized, based on the National Standards for DSME [B] and include:</td>
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</tbody>
</table>
| Diabetes self-management education and training (DSME/T) | - Being Active - Importance of regular physical activity and a healthy diet [A], and working towards an appropriate BMI.  
- Problem Solving - Assessment of patient knowledge, attitudes, self-management skills and health status; strategies for making health behavior changes and addressing psychosocial concerns [C].  
- Taking Medication - Description of diabetes disease process and treatment; safe and effective use of medications; prevention, detection and treatment of acute and chronic complications, including recognition of hypoglycemia [A].  
- Healthy Eating - Importance of nutrition management and regular physical activity [A].  
- Monitoring - Role of self-monitoring of blood glucose in glycemic control [A].  
- Reducing Risks - Cardiovascular risk reduction, smoking cessation intervention (B) and secondhand smoke avoidance (C), sexual dysfunction, self-care of feet (B), preconception counseling (D), encourage patients to receive dental care (D).  
- Healthy Coping - Set achievable behavioral goals and provide encouragement and coping strategies (E).  
Individuals with pre-diabetes or diabetes should receive individualized Medical Nutrition Therapy (MNT) by registered dietitian (RD) (A). Those with type 1 diabetes should be educated how to match prandial insulin dose to carbohydrate intake, pre-meal blood glucose and anticipated activity. |                                                                                                                                          |
| Assessment of patient's psychological & social situation | Initial and ongoing part of medical management of diabetes. |                                                                                                                                          |
| Depression screen                             | All adult members with a diagnosis of Diabetes will be screened for depression (E) using any screening method that the provider prefers *** or asking the following two questions: 1. “Over the past 2 weeks have you felt down, depressed, or hopeless?” 2. “Over the past 2 weeks have you felt little interest or pleasure in doing things?” (If positive for the 2 questions, screen further for depression.) | **Zung, Beck, PHQ-9, CES-D                                                                                                                                 |
| Influenza immunization                         | Annually after 6 months of age (C) |                                                                                                                                          |
| Pneumonia immunization                        | All persons with diabetes > 2 years old. Once unless given more than 5 years before age 65 or immunocompromised (C). |                                                                                                                                          |
| Hepatitis B immunization                      | Hepatitis B vaccination should be administered to unvaccinated adults with diabetes mellitus who are aged 19 through 59 years (A). Hepatitis B vaccination may be administered at the discretion of treating clinician to unvaccinated adults with diabetes mellitus who are aged ≥60 years (B). [A]. [B]. | [A]. [B].  
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6104a9.htm                                                                                                                                 |
| Smoking cessation                              | Advise smoking/tobacco cessation counseling and other forms of treatment (B). Advise all patients not to smoke (A) Refer to SC Quit Line available at 1-800-QuitNow, E-cigarettes should not be used as an alternative to smoking. |                                                                                                                                          |
| Oral Health                                    | Oral exam every 6 months (E). |                                                                                                                                          |
| Preconception and family planning counseling   | Preconception counseling for all women of childbearing age. Women with gestational diabetes should be screened for diabetes 6 to 12 weeks postpartum and should have subsequent screening for the development of diabetes or prediabetes at least every 3 years (E). |                                                                                                                                          |
| Hypothyroidism screening                      | Screen for TSH in persons with type 1, dyslipidemia, or woman > 50 years old. TSH should be rechecked every 1-2 years or with symptoms of thyroid dysfunction (E). Free T4 should be measured if TSH abnormal. |                                                                                                                                          |
| Liver function tests                           | Liver Function Tests annually. |                                                                                                                                          |
| Celiac disease, Pernicious Anemia             | Children with type 1 should be screened for celiac disease soon after diagnosis of diabetes by measuring tissue transglutaminase or antiendomysial antibodies with documentation of normal serum IgA levels (E). Consider screening adults with type 1 Diabetes as appropriate. |                                                                                                                                          |

Key concepts: goals should be individualized; certain populations (children, pregnant women, and elderly) require special considerations; less intensive glycemic goals may be indicated in patients with severe or frequent hypoglycemia; more intensive glycemic goals may further reduce microvascular complications at the cost of increasing hypoglycemia; postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals.

Reference unless otherwise noted:


http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6104a9.htm

Liver function tests annually.

Hypothyroidism screening

Screen for TSH in persons with type 1, dyslipidemia, or woman > 50 years old. TSH should be rechecked every 1-2 years or with symptoms of thyroid dysfunction (E). Free T4 should be measured if TSH abnormal.

Liver function tests annually.

Celiac disease, Pernicious Anemia

Children with type 1 should be screened for celiac disease soon after diagnosis of diabetes by measuring tissue transglutaminase or antiendomysial antibodies with documentation of normal serum IgA levels (E). Consider screening adults with type 1 Diabetes as appropriate.
S.C. takes baby steps toward better health

Social factors a hurdle as we pull up one notch to No. 42 in nation

Reginald Ellington, a fitness specialist, leads a group through exercises during a strength training and resistance bands class Tuesday at Roper St. Francis Cancer Center.

Top 10
1. Hawaii
2. Vermont
3. Massachusetts
4. Connecticut
5. Utah
6. Minnesota
7. New Hampshire
8. Colorado
9. North Dakota
10. Nebraska

BY LAUREN SAUSSER
lsausser@postandcourier.com

For a second year in a row, South Carolina inched up one spot in the annual America's Health Rankings. Small gains are good news, but the Palmetto State still could make significant improvements. Since the rankings were first released in 1990, South Carolina has never scored highly — bouncing between 41st and 48th. This year, it ranks 42nd healthiest among all states (or ninth unhealthiest, depending on your point of view) up from 43rd in 2013 and 44th in 2012.

"When you have ranking systems like this, for us to move up one, (it) means someone else moved back one," said Lillian Smith, the

Poll
What factor do you think is most important in determining an area's overall health rating? Go to postandcourier.com/polls to vote.

Please see HEALTH, Page A8

Bottom 10
41. Indiana
42. South Carolina
43. Alabama
44. West Virginia
45. Tennessee
46. Oklahoma
47. Kentucky
48. Louisiana
49. Arkansas
50. Mississippi
State takes baby steps toward better health

Health, from A1

assistant dean for practice and community engagement at the University of South Carolina's Arnold School of Public Health.

"Does that mean that we improved or someone else got worse? You've got to take these things with a grain of salt."

The report, which is released every December, is sponsored by United Health Foundation, the American Public Health Association and Partnership for Prevention. Hawaii earned the top spot in this year's rankings. Mississippi was named the least healthy state. Most states in the bottom 10 are in the South.

Nationally, there is also room for improvement. Obesity rates and the percentage of adults who aren't physically active increased between 2013 and 2014. Meanwhile, infant mortality and the number of Americans who are smoking decreased slightly year over year, while the percentage of adolescents who were adequately immunized increased.

"We applaud hard-won advances in several key measures, including smoking prevalence, even as this year's America's Health Rankings is a sobering reminder that we have a lot more work ahead of us," said Dr. Reed Tuckson, senior medical adviser for the United Health Foundation, in a prepared statement.

The rankings take into account obvious health measures — obesity, diabetes and binge drinking rates — but they also consider some of the so-called "social determinants of health," including education and public safety.

For example, social factors contributing to this state's overall ranking include a low high school graduation rate and a high violent crime rate. South Carolina ranks 46th in the country in both categories.

"If you have high violence in your neighborhood, you're less likely to go out and take walks. It can also cause higher levels of stress that your body has to deal with," said Smith, the USC public health expert.

Social factors, such as a low high school graduation rate and a high violent crime rate, contribute to South Carolina's low overall health ranking.

How S.C. stacks up
46th for high school graduation rate
46th for violent crime
46th for cases of chlamydia
44th for number of dentists per 100,000 residents
47th for diabetes rate
42nd for premature deaths
44th for infant mortality
14th for binge drinking
10th for cases of pertussis
20th for preventable hospitalizations

— Source: America's Health Rankings 2014 Edition

You can put someone on a diet, but if they aren't able to exercise and they don't have access to healthy foods, they are not able to follow the suggested regime."

Lillian Smith, University of South Carolina's Arnold School of Public Health

South Carolina leaders can make meaningful progress by working together, she said.

"What I mean by that, we have very good programs, we have well-intended projects, but they work in isolation and that if we really want to move the needle, we have to work collectively towards the same goals," Smith said.

A good example of collaboration, she said, is the South Carolina Health Coordinating Council. It includes private businesses, health insurance companies, state agencies — all of them working toward a handful of priorities, including reducing obesity, improving access to mental health and health care services and improving birth outcomes.

"The more folks we can get working together on these common goals, the better off we'll be," said Graham Adams, chairman of the Health Coordinating Council. "If we can get the Legislature to start focusing on these goals — both attention and resources on how to achieve these goals — we're going to reach them that much faster."

Reach Lauren Sausser at 937-5598.
PREVALENCE OF CHRONIC KIDNEY DISEASE, DIABETES AND HYPERTENSION IN RURAL TANZANIA

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Non-communicative diseases (NCD) including chronic kidney disease (CKD) and usually related conditions including, diabetes mellitus (DM), hypertension (HTN) and cardiovascular disease represent increasing public health challenges in low- and middle-income countries. The present study was conducted to explore the hypothesis that there are previously underappreciated and interrelated epidemics of CKD, DM, and HTN in rural Tanzania. To explore this hypothesis we assessed the prevalence in a probability-based sample of 740 subjects who were randomly sampled from households in a geographic area in Kisarawe District of rural Tanzania, which has a population of 21,205.

Prevalence estimates for DM were obtained by measuring HbA1c. Blood pressure was measured in accordance with American Heart Association guidelines. We assessed kidney function by measuring serum creatinine in blood samples obtained at the time of interview in the home. Estimation of glomerular filtration rate (eGFR) was computed with the CKD-Epi equation. The diagnostic criteria and prevalence estimates for these conditions are shown in the table.

<table>
<thead>
<tr>
<th>NCD</th>
<th>Diabetes</th>
<th>Pre-diabetes</th>
<th>HTN</th>
<th>Pre-HTN</th>
<th>CKD Stage 3 to 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria</td>
<td>HbA1c &gt;6.5%</td>
<td>HbA1c &gt;5.9 to &lt; 6.5</td>
<td>BP &gt; 140/90 mm Hg</td>
<td>BP 120-130/80-89 mm Hg</td>
<td>eGFR &lt; 60 ml/min/1.73 m²</td>
</tr>
<tr>
<td>Prevalence</td>
<td>14.7%</td>
<td>30.5%</td>
<td>17.5%</td>
<td>40.0%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Prevalence Males</td>
<td>13.0%</td>
<td>28.4%</td>
<td>14.3%</td>
<td>43.8%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Prevalence Females</td>
<td>16.0%</td>
<td>31.9%</td>
<td>19.6%</td>
<td>37.4%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

The prevalence of CKD stages 3 to 5 was associated with increasing age (p<0.05) and male gender (p<0.05). The prevalence of CKD stage 5 among those aged 18-26 years was surprisingly high (5.7%). The unexpected high prevalence of CKD stage 5 observed among young participants suggests a possible role for infectious agents in the pathogenesis of CKD in rural Tanzania. The prevalence of all stages of
HTN increased with advancing age (p<0.05). Surprisingly, in contrast to findings in high income countries, we did not detect an association of either DM or HTN with CKD.

In summary we observed unexpectedly high prevalence estimates for CKD, HTN and DM in a probability based sample in rural Tanzania. The higher than expected prevalence of these NCD's will likely contribute to rapidly accelerating rates of cardiovascular morbidity and mortality in these areas. Additional studies are desperately needed to expand the characterization and define the causality of the CKD, HTN and DM that we observed in this rural setting. It is imperative that as these additional studies are performed, the prevalence and incidence of these non-communicative diseases be monitored in response to prevention and treatment paradigms directed at reducing of the risk of kidney disease, DM, HTN and cardiovascular disease in order to prevent a major public health threat in Tanzania.