Session 1: 
Keynote Address: The Role of Culturally Competent Medicine in Prevention, Diagnosis, and Management of Diabetes and Cardiometabolic Risk

Learning Objective

1. Assess and apply culturally competent preventive, diagnostic, and treatment strategies to the care of patients with type 2 diabetes and cardiometabolic risk, in order to facilitate early identification and intervention to reduce risk for adverse health outcomes.
Session 1

Keynote Address:
The Role of Culturally Competent Medicine in Prevention, Diagnosis, and Management of Diabetes and Cardiometabolic Risk

Faculty

Brent M. Egan, MD
Professor of Medicine & Pharmacology
Medical University of South Carolina
Senior Medical Director, Hypertension Initiative/OQUIN Network
Charleston, South Carolina

Brent M. Egan, MD, is professor of medicine and pharmacology at the Medical University of South Carolina (MUSC). He received his medical degree (1978), and training in medicine (1981) and hypertension (1983), at the University of Michigan. Dr Egan has had continuous extramural research funding since 1984 with 19 NIH grants and 43 funded by other public and private sources. He has over 150 peer-reviewed articles, 88 chapters and books, and 140 published abstracts primarily in cardiometabolic disease-related topics. Dr Egan’s current professional interests center on translating efficacy in clinical trials to effective practices in the community. To that end, he has been active in community outreach programs including “Heart & Soul,” “Lighten Up,” “Commun-I-Care,” the Hypertension and Stroke Belt Initiatives, and SE VIEW. The Outpatient Quality Improvement Network (OQUIN) Hypertension Initiative is now working with more than 2500 primary care providers at 200 practices in the Southeast with over 1,500,000 adult patients. The goal is to facilitate the transition of South Carolina and the Southeast from a leader in cardiovascular disease to a model of heart and vascular health through more effective prevention and control of hypertension, hyperlipidemia, and diabetes. The U.S. Department of Health and Human Services (DHHS) recognized the Hypertension Initiative as a national Best Practice Model in 2004. In July 2004, during the 40th anniversary of the Civil Rights Amendment, Tommy Thompson, Secretary of DHHS, presented the Initiative with an award for its efforts to reduce health disparities. Dr Egan is active in numerous professional societies and serves on the editorial board of several peer-reviewed journals. Dr Egan received a Distinguished Faculty Service Award from MUSC and a Distinguished Researcher Award from the International Society of Hypertension in Blacks in 2005, as well as recognition on the U.S. “Best Doctors” list for 1998–2012.

Faculty Financial Disclosure Statement
The presenting faculty reports the following:
Dr Egan receives consulting fees from Medtronic, Daiichi-Sankyo, AstraZeneca, and Blue Cross Blue Shield SC.

Suggested Reading List


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Learning Objective

- Assess and apply culturally competent preventive, diagnostic, and treatment strategies most appropriate to the care of your patients with type 2 diabetes and cardiometabolic risk factors in order to advance prevention and early identification in those patients at greatest risk for adverse outcomes.

Pre-Test Question #1:

A diabetes diagnosis can be made when HbA1C levels are consistently above:

1. 5.5%
2. 6.0%
3. 6.5%
4. 7.0%
5. 7.5%

Pre-Test Question #2:

Tight glycemic control in type 2 diabetes has the greatest impact on:

1. MI risk reduction
2. Stroke risk reduction
3. Microvascular disease reduction
4. All of the above are similarly impacted

Pre-Test Question #3:

What is a culturally competent approach to communicating with a Hispanic patient in your office?

1. Address the patient by his/her last name
2. Greet with a firm handshake
3. Encourage direct eye contact
4. All of the above
Diabetes, Obesity, Pre-Diabetes: Scope of the Problem

The Diabetes Epidemic: Annual Number of New Cases of Diabetes Diagnosed Among US Adults, Aged 18-79; 1980-2010


Geography Matters: Age-adjusted Percentage of U.S. Adults with Obesity or Diagnosed Diabetes

*Body mass index \( \geq 30 \). CDC surveillance data. 2006-2008.


“Diabetes Belt” – United States

Prevalence of Population With Diagnosed Diabetes
- Diabetes Belt = 11.7%
- Rest of U.S. = 8.5%

The Prevalence of Diabetes Is Higher in Certain Racial and Ethnic Groups

Estimated Age-Adjusted Total Prevalence of Diabetes in People \( \geq 20 \) Years by Race/Ethnicity, US

Data from Behavioral Risk Factor Surveillance System (BRFSS) for 2007 and 2008


http://www.cdc.gov/diabetes/statistics


Diabetes in the United States, 1980–2010

Features of the Diabetes Belt vs Rest of United States

ARS Question
What percentage of your patients are African American?
1. <10%
2. 10%-24%
3. 25%-49%
4. ≥50%

ARS Question
What percentage of your patients are Latino or Hispanic?
1. <10%
2. 10%-24%
3. 25%-49%
4. ≥50%

Diabetes Affects Minorities to Different Degrees

Complications from Diabetes: Differ by Patient Profile
Decrease in Rates of Initial Lower Extremity Amputation Across All Groups But Vary Between Racial Groups (VA Health System Users, 2000-2004)
Chronic Disease Risk Factors (28 REACH US Communities, 2009)

Weight Assessments: BMI and Waist Circumference

<table>
<thead>
<tr>
<th>Weight Definition</th>
<th>BMI (kg/m²)</th>
<th>Waist Circumference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt; 18.5</td>
<td>Men &gt;102 cm (40 in.)</td>
</tr>
<tr>
<td>Healthy Weight</td>
<td>18.5-24.9</td>
<td>* Women &gt;88 cm (35 in.)</td>
</tr>
<tr>
<td>Overweight</td>
<td>25-29.9</td>
<td></td>
</tr>
<tr>
<td>Obese Class 1</td>
<td>30.0-34.9</td>
<td></td>
</tr>
<tr>
<td>Obese Class 2</td>
<td>35-35.9</td>
<td></td>
</tr>
<tr>
<td>Obese Class 3</td>
<td>≥ 40 or higher</td>
<td></td>
</tr>
</tbody>
</table>

Weight Assessments: BMI and Waist Circumference

Visceral Fat Distribution: Insulin Sensitive vs Resistant


Overweight and Obesity Increase the Risk of Cardiovascular Disease Mortality

Dietary Challenges to Weight Reduction

African Americans: “soul food”
- Some are healthy (collards, okra, rice, legumes, and sweet potatoes)
- Many are not: meats with high fat content, especially pork prepared with lard or other animal fats
- Fat intake may comprise close to 50% of calories
- Mean daily intake of fruits and vegetables may be very low (0.88 and 1.64 servings per day)
Dietary Challenges to Weight Reduction: Hispanics (by country of origin)

- **Caribbean**
  - Rice, beans, starchy root vegetables, coconut, adobo sofrito

- **Central America**
  - Corn, beans, chiles, hearty stews, moles, chocolate

- **South America**
  - Potato, corn, rice, annatto, coriander, onions, beef in Brazil/Argentina

SCREENING FOR DIABETES AND PREDIABETES
Intersection of Risk Factors, Co-morbidities and Disease Progression

Adults Who Should Be Screened for Diabetes and Prediabetes

- Symptoms consistent with diabetes
- Anyone over age 45
- Overweight (BMI ≥ 25) and at least one additional risk factor
  - Physical inactivity
  - First degree relative with diabetes
  - Member of high-risk ethnic population
  - Known previous prediabetes

If results are normal, testing should be repeated every 3 years, with consideration of more frequent testing depending on initial results and risk status.

Diagnostic Measures of Hyperglycemia

<table>
<thead>
<tr>
<th>Test</th>
<th>&quot;Prediabetes&quot;</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random plasma glucose (mg/dL) in patient with classic symptoms of hyperglycemia</td>
<td>NA</td>
<td>≥ 200</td>
</tr>
<tr>
<td>Fasting plasma glucose (mg/dL)*</td>
<td>100-125 Impaired fasting glucose</td>
<td>≥ 126</td>
</tr>
<tr>
<td>Two-hr glucose during OGTT (mg/dL)*</td>
<td>140-199 Impaired glucose tolerance</td>
<td>≥ 200</td>
</tr>
<tr>
<td>Hemoglobin A1C (%)*</td>
<td>5.5-6.4 High risk</td>
<td>≥ 6.5</td>
</tr>
</tbody>
</table>

*Should be confirmed by repeat testing on a separate day

Obesity and Cardiometabolic Disease

Pre-diabetic States
1. Prediabetes
   i. IFG
   ii. IGT
   iii. HbA1C
2. Metabolic Syndrome

Cardiovascular Disease

Insulin Resistance

Types 2 Diabetes

IFG = impaired fasting glucose; IGT = impaired glucose tolerance; HbA1C = glycosylated hemoglobin.
Clinical Manifestations of Insulin Resistance

- Type 2 diabetes and glycemic disorders
- Dyslipidemia
  - Low HDL
  - Small, dense LDL
  - ↑ triglycerides
- Hypertension
- Endothelial dysfunction/inflammation (hsCRP)
- Impaired thrombosis

Metabolic Syndrome: NCEP (ATPIII) Criteria [must have 3 or more risk factors]

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Defining Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Waist circumference</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>&gt;102 cm (40 in.)</td>
</tr>
<tr>
<td>Women</td>
<td>&gt;88 cm (35 in.)</td>
</tr>
<tr>
<td>II. Triglycerides</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>&gt;150 mg/dL (or on Rx)</td>
</tr>
<tr>
<td>Women</td>
<td>&gt;150 mg/dL (or on Rx)</td>
</tr>
<tr>
<td>III. HDL-C</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>&lt;40 mg/dL</td>
</tr>
<tr>
<td>Women</td>
<td>&lt;50 mg/dL</td>
</tr>
<tr>
<td>IV. Blood pressure</td>
<td></td>
</tr>
<tr>
<td>≥130/85 mm Hg (or on Med)</td>
<td></td>
</tr>
<tr>
<td>V. Fasting glucose</td>
<td></td>
</tr>
<tr>
<td>≥100 mg/dL (or on Med)</td>
<td></td>
</tr>
</tbody>
</table>

Post Load Glycemia in Patients with Acute CAD and No Previous Diabetes Diagnosis

![Image of glycemia levels](image)

Diabetes Can Be Prevented or Delayed

- In patients with impaired glucose tolerance:
  - Lifestyle modification
  - 5-10% weight loss if overweight
    - Diet, pharmacotherapy
  - Moderate physical activity (150 minutes/week)
  - Combined diet and exercise can improve glucose tolerance and prevent progression from IGT to T2DM

Goal: Tight Glycemic Control in All Patients With Type 2 Diabetes

According to the United Kingdom Prospective Diabetes Study (UKPDS) 35, every 1% decrease in A1C resulted in:

- Decrease in risk of microvascular complications (P = 0.0001)
- Decrease in risk of myocardial infarction (P < 0.0001)
- Decrease in risk of stroke (P = 0.04)
- 21% decrease in any diabetes-related endpoint (P < 0.001)

*The study population was 82% White, 10% Asian Indian, and 8% Afro-Caribbean.

References:
- NCEP = National Cholesterol Education Program; ATPIII = Adult Treatment Panel III; NCEP ATP III.
Modifiable Variables Impact Treatment and Glycemic Control of T2DM

Three Modifiable Variables Accounted for 48% Variance in Diabetes Control and about 60% of black-white differences
• Initial A1C
• Therapeutic inertia
• Visit frequency

Greater attention to
➢ early diagnosis and treatment
➢ ensuring regular healthcare visits
➢ overcoming therapeutic inertia
→ could improve diabetes control and health equity

Rates of Glycemic Control Vary by Race, Ethnicity, and Education Level


Gaps Between Good Processes of Diabetes Care and Poor Intermediate Outcomes: TRIAD Study

Patients with poor control of vascular disease risk factors (A1C ≥ 8%; SBP ≥ 140 mm Hg; LDL-cholesterol ≥ 130 mg/dL):
• Younger, female, African American, lower education, lower income (P < 0.001 each)
• Lower general health
• Higher BMI
• On insulin
• Smokers
• Physically inactive
• Depressed, hopeless
• Concerned about costs of medications/care
• Less trust in physician

Conclusion
- Clinical, socioeconomic, psychosocial and behavioral factors independently associated with poor control

Potential Barriers to Adequate Diabetes Care in Diverse Populations

• Limited knowledge about disease
• Language barriers
• Literacy problems
• Lack of insurance
• Poor patient-physician relationship
• Limited culturally relevant educational programs
• Cultural beliefs
• Future discounting

Breaking Down the Barriers to Glycemic Control

Cultural and Ethnic Considerations

Patient Centered Care

“Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions”

Institute of Medicine Committee on Quality of Health Care in America

**Cultural Insights: Hispanics and Diabetes**

- Accept that diabetes as biomedical causes such as heredity
- Traditional or folk beliefs such as susto-concept of strong emotions
- Strong religious beliefs
  - may adopt a fatalistic approach to diabetes management, “It's in God's hands.”
- Value of herbal medicines
- Negative cultural attitudes toward insulin
- Patients fear being “scolded” by clinician


**Cultural Insights: African Americans and Diabetes**

- Etiology:
  - Belief that “sugar” or “sweet blood” is caused by imbalance in eating (too much sugar and starchy foods)
  - Belief that legacy of slavery and segregation may play a role in onset of diabetes
- Severity:
  - Continuum of intensity
    - A diagnosis of “sugar” being less serious than one of diabetes
    - Stress or worry may worsen sugar
- Common treatments:
  - Prayer, trusting in God
  - Use of bitter foods and herbs (lemon juice, garlic, juniper berries) to neutralize blood


**Hispanic Culture: Communication Implications**

- Use “Senor” and “Senora” or proper names during interview, rather than first name
- Avoid firm hand shakes, which imply that the doctor is overpowering
- The patient’s indirect eye contact is a show of respect for the physician
- Physician shows respect by sitting or standing near patient


**African Americans’ Beliefs About Diabetes and Self-Management**

- Spirituality is an important factor in general health, disease adjustment, and coping
- General life stress and multi-caring responsibilities interfere with daily disease management
- The impact of diabetes is manifested in feelings of dietary deprivation, physical and emotional “tiredness,” “worry,” and fear of diabetes complications
- The difficulties experienced that affect behavioral outcomes include:
  - Limited access to care
  - Cost of medications and testing supplies
  - Making nutritional changes
  - Do not stand while interviewing patient. Maintain eye level to minimize appearance of cultural superiority


**Successful Strategies to Improve Diabetes Outcomes in African Americans and Hispanics**

- Utilize interpersonal (rather than computer-based) skills
- Use social networks (family members, peer support groups, one-on-one interactive education, community health workers)
- Use culturally tailored interventions
- Emphasize cognitive behavioral education, self-care management, and adaptations of the Diabetes Prevention Program (DPP)
- Focus on improving patient resilience to stressors
- Provide multidisciplinary patient diabetes education
- Ensure timely availability of treatment algorithms, factoring in HbA1C and random blood glucose, at patient appointments


**Successful Strategies to Improve Diabetes Outcomes in African Americans and Hispanics (cont'd)**

- Use of case management, community health workers (CHWs), and non-physician providers:
  - CHW (can be RNs) serve as a patient adjunct to the primary care team
  - Assists case management
  - Helps overcome social, cultural, linguistic barriers
  - Acts as a powerful change agent
  - Pharmacist-led medication management
- Use of medical (or medication) assistance programs (MAPs)

Diabetes Self-Management Support (DSMS) Intervention in African Americans: Sustaining Improvements Over the Long Term

60 African-American adults with T2DM

Pre-intervention mailings: weekly diabetes self-management education (DMSE) newsletters coupled with clinical feedback x 6 months

Intervention
- 88 weekly group-based sessions
- Guided by participants' self-management questions; emphasized experiential learning, coping, goal setting, problem solving

Results
- Post 6-months: improvements in BP ($P < 0.05$), serum cholesterol ($P < 0.001$), healthy diet ($P < 0.01$), blood glucose monitoring ($P < 0.05$), foot examinations ($P < 0.01$)
- Post 24-months: Sustainment of 6-month improvements, plus healthy diet ($P < 0.05$), carbohydrate spacing ($P < 0.01$), insulin use ($P < 0.05$), quality of life ($P < 0.05$)


Successful Strategies to Improve Diabetes Outcomes in African Americans and Hispanics

Educational Programs
- Bilingual educators facilitate the class
- Provide food models common to Mexican-American diets
- Education materials in Spanish

Group visits for underinsured
- Sense of trust in physician
- Coordination of care
- Cultural competency of care


Does it Work?
Engage Community Churches

- Community-based African American churches successfully implemented diabetes prevention programs (DPP) and diabetes self-management programs
  - Lowered fasting glucose, 108.1 mg/dL to 101.7 mg/dL ($P=0.037$), and weight, BMI 33.2 to 32.9 ($P<.05$), in at-risk participants
  - Lowered A1C (0.5% difference, $P<.001$), weight, and diabetes related quality of life in participants with T2DM


Does it Work?
Fit Body and Soul Feasibility Study in Atlanta African-American Church Community

- Percentage of adult members of the church at high risk for diabetes who lost weight

<table>
<thead>
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<tbody>
<tr>
<td>5%</td>
</tr>
<tr>
<td>7%</td>
</tr>
<tr>
<td>10%</td>
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Improvements in A1C ($P = 0.001$) and systolic blood pressure ($P = 0.006$), diabetes knowledge, exercise, healthy eating, foot care, glucose self-monitoring, medication adherence


Does It Work?
Community-Based Diabetes Education for Hispanics: The Diabetes Empowerment Education Program

In nonclinical locations, trained CHWs collected data on diabetes knowledge, self-care behaviors, depression, A1C, weight, and blood pressure.

Applying participatory techniques, 2-hour group sessions conducted over 10 weeks.

Results
- Improvements were significant for A1C ($P = 0.001$) and systolic blood pressure ($P = 0.006$).
- Other positive outcomes: diabetes knowledge, physical activity, spacing carbohydrates, healthy eating, foot care, glucose self-monitoring, medication adherence


Health Literacy

- ...the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.
- ...the ability to read, understand, and use health information to make appropriate healthcare decisions and follow instructions for treatment.

AMA & AMA Foundation, 2003
(originally developed by Ratzan & Parker, 2000).

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Practical Tips for Culturally Competent Care

• Ask your patients about their health beliefs
• Ask your patients about their medications (including ones prescribed by other physicians)
• Discuss traditional healing remedies
• Discuss the role of advice from family members and friends in making healthcare decisions
• Offer to include family members in health discussions


Teach-Back

• Method to confirm that you have explained to the patient what they need to know in a manner that the patient understands
• Explain to the Patient what they need to know. Then have the Patient explain it back to you
  - Those who can: Success!
  - Those who can’t: Explain again, ensuring you are using appropriate communication methods and terms. Repeat the Teach-Back as necessary until goal achieved
• This method can also aid staff members in identifying explanations and communication strategies that are most commonly understood (and misunderstood) by patients

Talking With Patients and Their Families

• Use plain language
• Slow down
• Break it down into short statements
• Focus on the 2 or 3 most important concepts
• Check for understanding using the teach-back method

The Five “A”的s of Healthcare Interactions

Sequential series of steps to use during healthcare interactions, which facilitate patient-centered care and patient self-management

Assess → Advise → Agree → Assist → Arrange

Emphasizes:
• Collaborative goal setting
• Patient skill building to overcome barriers
• Self-monitoring
• Personalized feedback
• Systematic links to community resources

Some Resources

American College of Physicians (http://www.acponline.org/)
• Patient Registries Tutorial – Overview
• Identifying Your Concerns: Guide for Clinicians (and one for patients)
• Patient Education Video: Living With Diabetes: A Guide for African Americans
• Patient Guide for Hispanic Americans (in English and Spanish)

Ethnomed (http://ethnomed.org/patient-education/diabetes)
Offers patient materials in:
• Amharic
• Khmer
• Oromo
• Somali
• Spanish
• Tigrinya
• Vietnamese
• Korean
• Chinese
• Japanese
• Filipino

Some Resources
Other Helpful Information and Resources

• National Diabetes Information Clearinghouse (http://diabetes.niddk.nih.gov/)
• American Diabetes Association (http://diabetes.org)
• American Association of Diabetes Educators (http://www.diabeteseducator.org/)

Where to Find:

A Registered Dietitian:

• www.eatright.org
Downloadable professional and patient education materials such as:
• ADA toolkit: http://professional.diabetes.org/GlucoseCalculator.aspx
• NIH toolkit: http://www.betterdiabetescare.nih.gov/TOOLBOXpatienteducation.htm
• 10,000 Steps, Shape Up America: http://www.shapeup.org/shape/steps.php

Post-Test Question #1:

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Thank You