Overview

- Diabetes epidemiology
- Key elements of the VA/DoD Diabetes practice guideline
- How to integrate the guideline into primary care

Diabetes Population

- World-wide 366 million people have diabetes
- 18.8 million Americans are known to have diabetes
- Another 7 million Americans have the disease but have yet to be diagnosed
- That totals nearly 26 million Americans

DoD Diabetes Population

- Military Health System provided diabetes care to over 1.1 million beneficiaries
- Active duty
  - Army – 2818 Soldiers with diabetes
  - Air Force – 1398 Airmen with diabetes
  - Navy – 1942 Sailors with diabetes

VA Diabetes Population

- VA has about 8 million enrollees
- Diabetes is present in 1 in 4 enrollees
- Nearly 2 million people with diabetes are eligible for care in the VA system

VA/DoD Diabetes Guideline

- Designed for primary care
- Evidence-based rather than consensus-based
- Establishes individual target goals for glycemic control
- Algorithms help guide practitioners through management
- Promotes continuity between DoD and VA

Why Changes in the Guideline?

- The number of individuals with diabetes has increased dramatically
- Increased responsibility for diabetes management in primary care
- Movement towards team-based care

Why Changes in the Guideline?

- Intensive control is not always best
- Several new diabetes medications
- New approaches and technologies
  - Inpatient management
  - Digital retinal imaging

Diabetes Risk Factors

- Obesity
- Hypertension
- Race and ethnicity
- Genetics
- Dyslipidemia
- Other factors
  - Polycystic ovarian syndrome (PCOS)
  - Gestational Diabetes

Diagnosis of Pre-Diabetes

- Fasting glucose ≥100 and <126 mg/dL on two occasions
- A1c > 5.7% and Fasting glucose ≥100 and <126 mg/dL

Prevention

- Diet and Exercise
  - Impact validated in the Diabetes Prevention Program
  - So effective that the study was stopped a year early
  - The effects of the DPP have persisted for 10 years
- Medications also reduce risk

Prevention

- Several weight management programs help achieve weight loss success
  - VA MOVE!
  - Army Move!
  - Navy ShipShape
  - Air Force Health and Wellness Centers (HAWCS)

Diagnosis of Diabetes

- Reliance on fasting glucose
  - ≥ 126 mg/dL on 2 occasions
- A1c can be used with caveat
  - ≥7% on two occasions
  - ≥ 6.5% and FPG >126 mg/dL
- Classic signs and symptoms with random ≥ 200 mg/dL

Goals and Therapies

- The ABCs of diabetes care:
  - Individualized **A**1c target range
  - Control **B**lood pressure to < 140/80
  - Control **C**holesterol

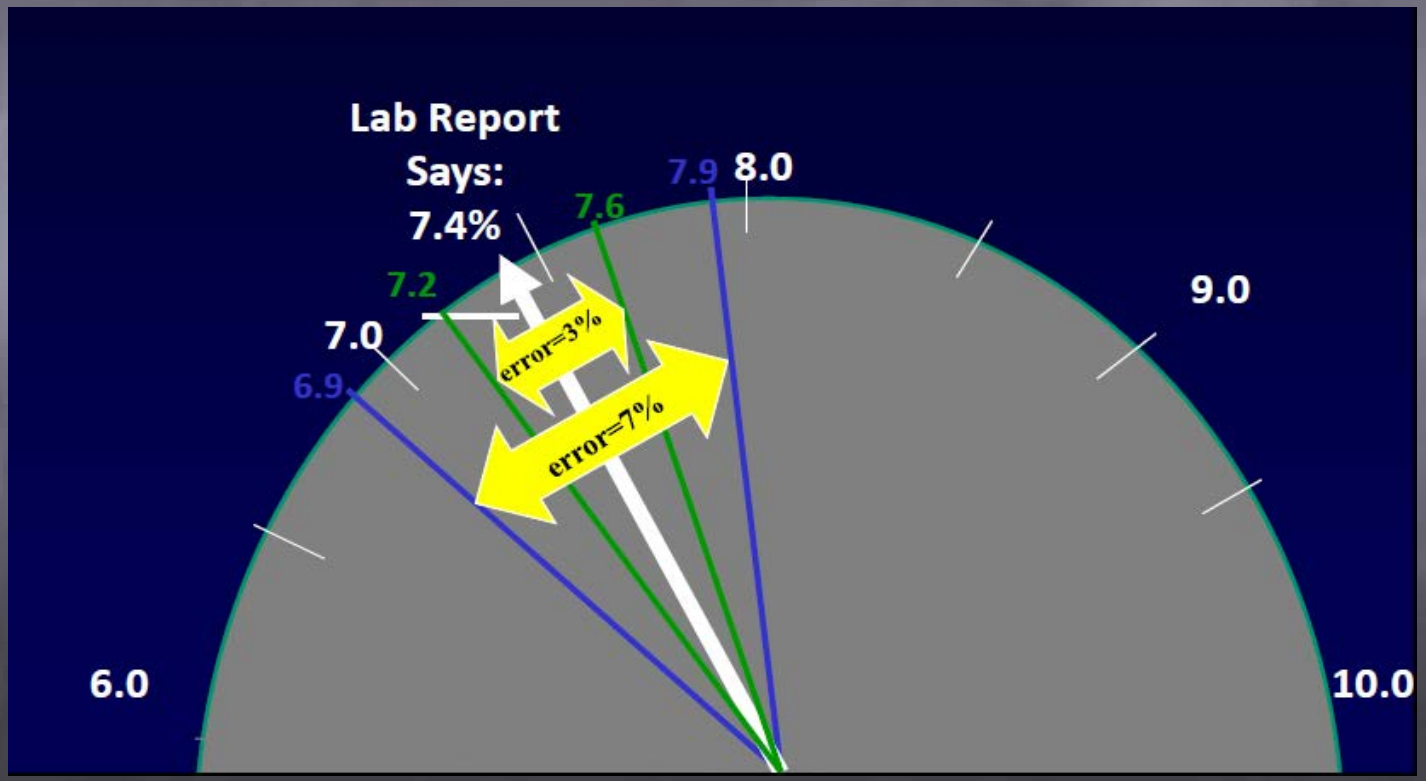
Additional Key Recommendations

- Screen for complications
  - Eye exam every 12-24 months
  - Annually for kidney disease
  - Annual comprehensive lower extremity assessment
- Aspirin to reduce the risk of fatal cardiovascular events
- Smoking cessation
- Influenza vaccination
- Pneumococcal vaccine

Establishing A1c Range

- Know the limits of A1c
- Risk stratification
- Risk of hypoglycemia should be considered in recommending a target goal
- Consider:
  - Risk versus benefit
  - Patient's preferences

A1c Variability “Speedometer”



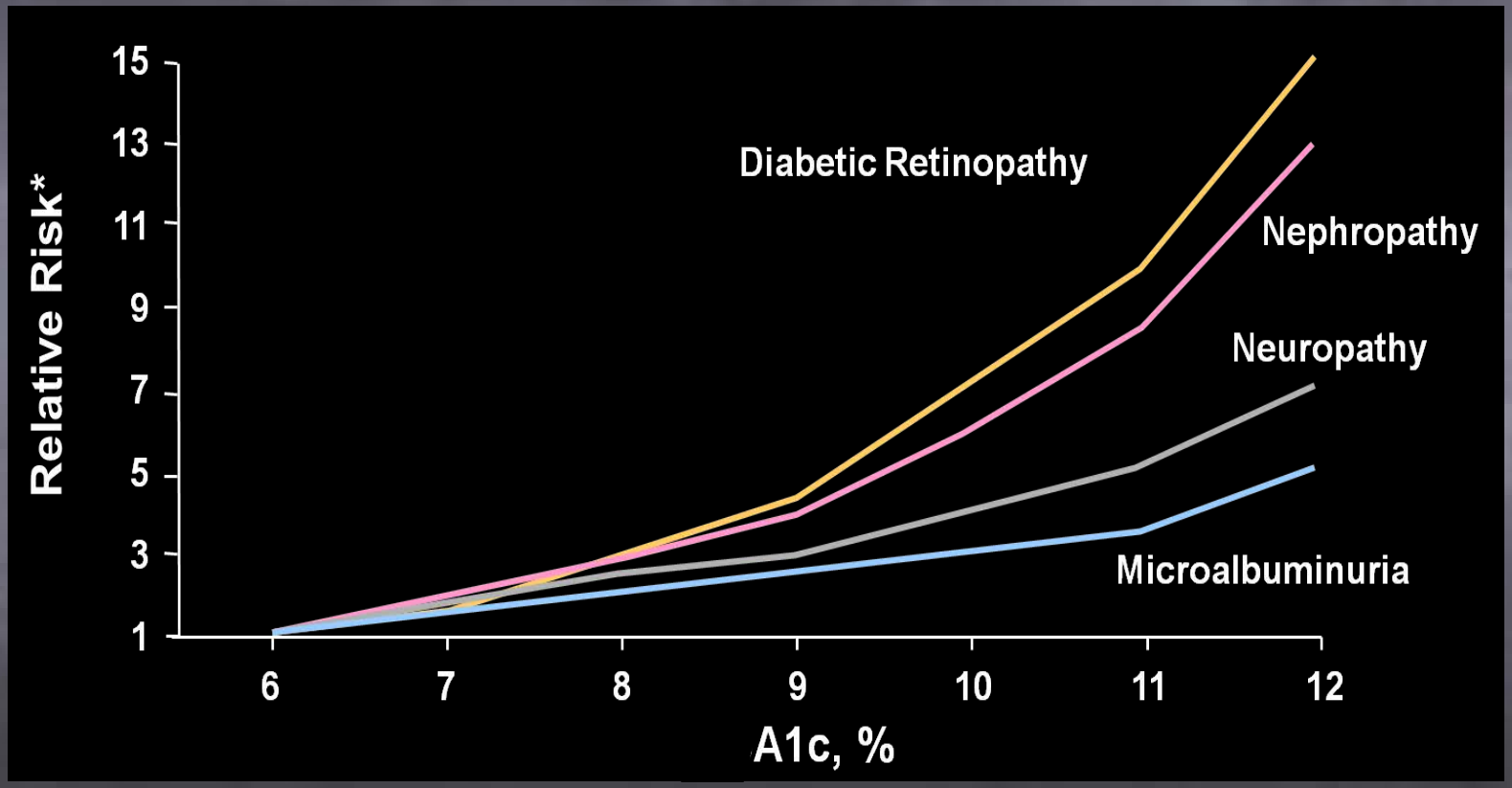
Sources of Error – A1c testing

- Assay methodology
  - Technician, instrument, analytic bias
- Age (primarily in non-diabetics)
- Race (Blacks have 0.39% higher A1c)
- Winter variation
- Other confounders
  - CKD, anemias

A1c Variability

- Point of care testing (i.e. fingerstick testing) has a large variance and is not recommended for use in diagnosis

Risk of Progression of Complications by A1c



*Relative risk set to 1 for A1c of 6%.

A1c Targets: Risk Stratification

- <7%, if achievable without undue risk
  - Mild or no microvascular complications, no major concurrent illnesses, and life expectancy >10-15 years
- < 8%
  - Longer diabetes duration (>10 years) or co-morbidities
    - AND
  - Multiple diabetes medications including insulin

A1c Targets: Risk Stratification

- 8-9%
  - Patients with advanced microvascular complications and/or major co-morbidities or life expectancy <5 years
- <9%, any patient – to avoid symptoms of hyperglycemia

Risk Stratification: Case 1

- 77 year-old woman with severe aortic stenosis and congestive heart failure
  - Average home glucose is 165 mg/dL, which she thinks is too high based upon something she read in her AARP magazine
  - Diabetes for 12 years and moderate chronic kidney disease with proteinuria
  - Takes 12 units of insulin glargine at bedtime
  - Most recent A1c 8.1%

Risk Stratification: Case 2

- 46 year old overweight man with hypertension
  - Recent diagnosis of diabetes
  - No clinical evidence of cardiovascular, renal or nerve-related complications
  - Taking metformin twice daily
  - Last A1c 8.1%

Shared Decision Making

- The importance of self management is obvious – there are 525,600 minutes in a year; health care professionals only interact with a patient for a few hours per year
- A patient-centered process that uses a motivational interviewing style to:
  - Weigh benefits and harms
  - Consider literacy and numeracy
  - Communicate effectively
  - Incorporate patient preferences
  - Arrive at clear and achievable goals

Shared Decision Making Case

- 38 year-old woman
  - BMI 36 kg/m2 with
  - type 2 diabetes for 5 years
  - A1c 9.0%, an increase of 1.3% from 8 months ago
  - On metformin and does not feel that she can make further lifestyle modifications
  - When asked, "Why have you come to see me today?" she responds "I want to do something to lose this weight"

Pharmacotherapy for Diabetes

Insulin should be considered in any patient with extreme hyperglycemia or significant symptoms -- even if transition to therapy with oral agents is intended as hyperglycemia improves

Sequential Approach

- Lifestyle modification
- Metformin (preferred) or sulfonylurea as first line agents unless contraindicated
- Alternative monotherapy reserved for patients with contraindications or unable to tolerate metformin or sulfonylurea
- Combination therapy with two agents
  - Second oral agent or insulin
  - Triple oral therapy discouraged

Self-Monitoring of Blood Glucose

- Self-monitoring of blood glucose (SMBG) is indicated for persons on insulin
- SMBG may be use to identify periods of hyperglycemia when A1c is elevated
- Stable patients not on insulin:
  - Routine SMBG not supported by evidence
  - Short-term use may be appropriate to adjust therapy

Guideline Implementation

- Local diabetes champions at facilities
  - Strategies to monitor adherence and compliance
  - Self-knowledge assessments/questionnaires
  - Channels for process improvement
- Pocket cards
  - General information
  - Shared decision making
- Broadcasts/Podcasts

Additional Information

Implementation Tools at:

healthquality.va.gov

Diabetes Guideline

Guideline Summary

Pocket Card

Shared Decision Making Card

Motivational Interviewing Podcast

CPG Shopping Cart

- Provider Tools
  - Guideline Summary
  - Pocket Card
  - Shared Decision Making Card
  - Diabetes Teaching Flip Chart
  - Diabetes Teaching Checklist
  - Link to CPG in EMR
  - Monofilaments
  - DVD on Self-Management Couching
- Patient Tools
  - Self-Care Skills for the Person with Diabetes Booklet
  - Emergency/Diabetes Care Wallet Card
  - Healthy Plate Placemat
  - Diabetes Prevention Brochure
  - Group Life Balance Program coming soon
  - Glucose Logs

https://www.QMO.amedd.army.mil