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At the forefront of care for geriatrics with diabetes:

An improvement project to better patient care and change practice behavior of Optometrists and Podiatrists

Our Focus Group

- The Adult Diabetic Patient
  over 65 years of age

ADA position papers and consensus statements

Peripheral Arterial Disease in People with Diabetes*
Diabetic Neuropathy*
Retinopathy in Diabetes*

DIABETES CARE 2003, 2004

Our Providers

Controlling our Destiny and that of our Patients

- *Primary Providers of Foot Care services*
  - *Podiatrists*
- *Primary Providers of Eye Care services*
  - *Optometrists*

Complications in this patient population

- *PAD – Peripheral Arterial Disease*
- *DPN – Distal Peripheral Neuropathy*
- *DR - Diabetic Retinopathy (NPDR, PDR)*

Recommendations

- PAD and DPN

  Current data indicate that on average, only 50 to 60 percent of patients with diabetes have a semi-annual foot examination. At least 50 percent of the amputations that occur each year in people with diabetes can be prevented through proper foot care. (NIDDK)

- RETINOPATHY

  Many eye diseases and disorders have no symptoms or early warning signs. Dilated eye exams should be performed at appropriate intervals to detect changes in the retina or optic nerve or both. Eye care professionals can view the back of the eye for subtle changes and, if necessary, initiate treatment at the right time. (NIH Healthy People 2010)

Limitations in the Elderly

- Elderly unable to self manage and assess for foot problems
  - Vision problems
  - Joint and knee problems
  - Lack of flexibility
  - Lack of motivation
  - Family responsibilities

Screening

- Benefits vs. Risks
- Increasing numbers screened and change provider behavior through both Patient and Provider ***education,*** by increasing ***reimbursement*** (money as the driver), through ***regulation*** (state and federal law and licensing boards), ***third party payers*** (Hedis and quality measures) and ***competition***
- Use of Community Initiatives
  - hospital
  - health clinics
  - community centers
  - churches
  - senior centers

PAD Screening*

Preliminary study

Peripheral arterial disease: Its recognition and treatment

James DiResta

Introduction

This article outlines a US-based three-phase study to improve the rate of diagnosis and treatment of peripheral arterial disease, an independent risk factor for cardiovascular events. The preliminary results, from phase one, on ankle–brachial index screening in a community population are presented herein. The second phase of the study will include a state-wide initiative with a podiatric physician at its centre. The proposed third phase will move the initiative alongside hypertension screening in the primary care setting.

Peripheral arterial disease (PAD) has long been recognised as a risk factor in the development of non-healing foot ulcers and lower extremity amputations in people with diabetes (Singh et al, 2005). More recently, PAD has been identified as a risk marker for coronary heart disease, stroke, diabetes and hypertension (Hooi et al, 2002; Hankey et al, 2006); many healthcare professionals are now advocating the measuring of ankle–brachial index (ABI) in order to identify PAD (Mohler, 2003). The American Diabetes Association (ADA), in a consensus statement (ADA, 2003), has called for PAD screening in all people over the age of 50 years who have diabetes. It has also called for PAD screening in people under the age of 50 years with diabetes, who have other associated risk factors such as hypertension, hypercholesterolaemia, a smoking habit, or diabetes duration of 10 years or more.

The ABI value is the ratio between Doppler-measured systolic blood pressure in the lower and upper limb extremities. An ABI value of <0.9 diagnoses PAD (Norman et al, 2006). The Clopidogrel versus Aspirin in Patients at Risk of Ischaemic Events (CAPRIE) study showed a 10% reduction in survival for every 0.1 point reduction in ABI score (CAPRIE Steering Committee, 1996).

It has been estimated that 60% of patients with PAD are asymptomatic but are at significant risk of developing cardiovascular and cerebrovascular complications (Jarvis and Simpson, 2000). Prescription of aspirin with anticoagulant therapy can be life-saving in this group (Gey et al, 2004). Murabito and colleagues (2002) demonstrated that a low ABI score is significantly associated with an elevated risk of stroke and ischaemic heart attack. This study also demonstrated an interaction between hypertension and gender on the association of hypertension and lower extremity disease.

Sacks and colleagues (2003), in identifying PAD as a risk marker for diabetes, coronary heart disease, stroke, hypertension and other vascular diseases, have recommended that all patients being screened for PAD should have their ABI measured. However, it has been reported that ABI values are not specific enough for determining severe ischaemia (Dorros et al, 2001); therefore, ABI values would be better utilised for patients with risk factors who are asymptomatic or presenting with minimal symptoms.

Mehler and colleagues (2003) report that intensive blood pressure control in people with PAD resulted in a marked reduction in cardiovascular events. Their study demonstrated that, in people with diabetes who have normal blood pressure, the inverse relationship between ABI and cardiovascular events was abolished with intensive blood pressure lowering therapy (Mayer, 1999;

ARTICLE POINTS

1 There is a need to screen for peripheral arterial disease (PAD) among people with diabetes.

2 The ankle–brachial index (ABI) is a reliable method of assessing PAD.

3 In order for ABI to become widely used, practice behaviour among podiatrists in the US must change.

4 In the author's view, ABI screening can reduce the risk factors of the population with diabetes.

5 The author recommends that people with diabetes should be screened for ABI scores on a routine basis.

KEY WORDS

- **Peripheral arterial disease**
- **Ankle–brachial index**
- **Screening**

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ROAD BLOCKS to improvement…

- Potential problems with the screening tool (ABI) – is it really better??
- Cost – Doppler expense, more work with no financial incentive, no third party or big brother requirement, alternative tool for less money, difficulty in educating and creating change in provider behavior

Quality Measures

- ***Who*** determines what is Quality?
- ***What*** determines Quality?
- ***Where*** will it be done?
- ***Why*** should we be doing this?

  and

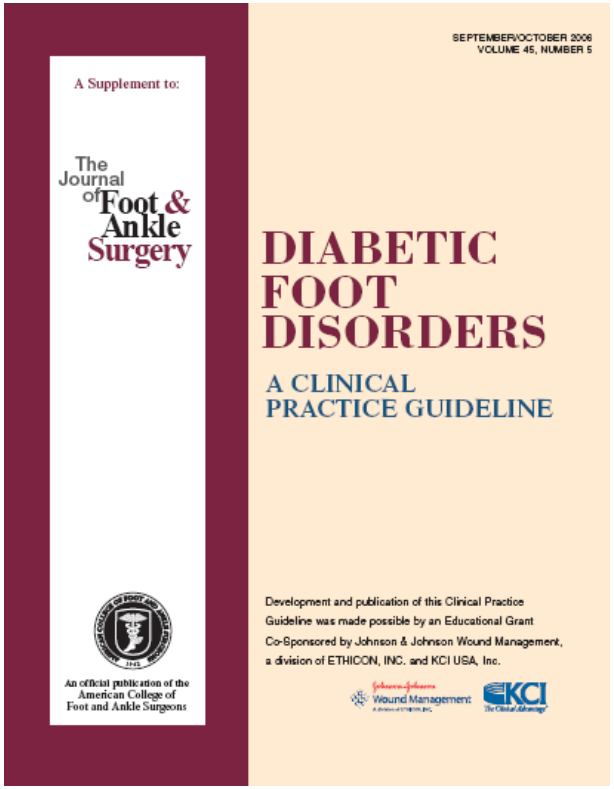
- ***When*** will this all happen?

……. but ***How*** ?

Who determines “Quality of Care”

- Independent Providers (expert consensus)
- Third Party Payers
- AMA vs. APMA and the AOA (turf wars)
- Federal Government – CMS
- Other…NIH, ADA, ACFAS, ACFAOM, AAO (optometry), AAO (ophthalmology), AOFAS

Best Practice Guidelines



Best Practice Guidelines

Diabetic
Retinopathy

What determines “Quality of Care”

- EBM
  - Clinical trials
  - Consensus statements (AOA,APMA)
  - Meta-analysis
  - Systematic Review
  - Experts in these fields

Is the EVIDENCE correct?

Distal Peripheral Neuropathy

Which is best ….

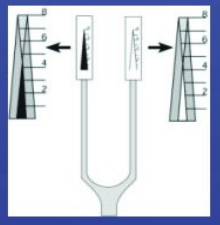
- ? Monofilament testing?
- ? Vibratory sensation testing?
- ? Some other more sophisticated technology?

…. at what cost and for what benefit??

Is this the "best way" to test for DPN?

Quantitative Measure of Vibration Detection Threshold

Rydel-Seiffer Tuning Fork



Xilas VPT-Meter

There are numerous, commercially available, hand-held vibration measuring devices.

Detection of Peripheral Neuropathy

by DAVID G. ARMSTRONG, DPM, PHD

Cost effective analysis (CEA)

- A value judgment*

$$\text{CE Ratio} = \frac{\text{Cost}_{\text{new strategy}} - \text{Cost}_{\text{current practice}}}{\text{Effect}_{\text{new strategy}} - \text{Effect}_{\text{current practice}}}$$

*VA Outcome Group (Gil Welch et al)

… biggest and best bang for your buck $$$$

Costs

- *The total annual cost associated with diabetes foot disease is estimated to be more than $1 billion.* This cost does not include surgeons' fees, rehabilitation costs, prostheses, time lost from work, and disability payments*

*Levin ME, O'Neal, Bowker JH: Preface. In The Diabetic Foot (5th ed.).

Costs

- **What is the cost of diabetic retinopathy?**
  It is estimated that a year of blindness costs the U.S. Government approximately $13,607 annually per person in Social Security benefits, lost income tax revenue, and health care expenditures. If Americans at risk for developing diabetic eye disease were regularly screened and treated to preserve their sight, the net annual savings to the Government would be more than $100 million.*

*National Eye Institute

Where will we determine the “Quality of Care”

- Professional Schools of Optometry, Public Health, Medicine and Podiatric Medicine
- Research
- Clinics
- Hospitals
- Offices

or perhaps the bean counters’ office of a third party payer …

Why determine Quality of Care

Outcome Measures:

Morbidity

- Blindness
- Lower Extremity Amputation

Mortality

- Premature death

The Evidence

- After an amputation, the chance of another amputation of the same extremity or of the opposite extremity within 5 years is as high as 50 percent. The 5-year mortality rate after lower extremity amputation ranges from 39 to 68 percent*

*Reiber GE, Boyko EJ, Smith DG: Lower extremity foot ulcers and amputations in diabetes. In *Diabetes in America.* 2nd ed., National Institutes of Health, NIDDK, NIH Pub. No. 95-1468,

The Evidence

- Diabetic retinopathy is the most frequent cause of new cases of blindness among adults aged 20–74 years*
- Diabetic retinopathy causes 12,000 to 24,000 new cases of blindness each year*

*Centers for Disease Control and Prevention (CDC), NHIS, NHANES III, NIH

The Evidence

- "Patients with diabetes have 50 to 80 times elevated relative risk for legal blindness over their lifetimes, compared with people without the disease"
- The NEI estimates that of the approximately 10.5 million Americans who have diagnosed diabetes, between 40-45 percent have some degree of diabetic retinopathy. Between 600,000-700,000 Americans have diabetic retinopathy severe enough to cause vision loss.

The Evidence

- More than 60% of nontraumatic lower-limb amputations occur among people with diabetes*
- In 2000-2001, about 82,000 nontraumatic lower-limb amputations were performed annually among people with diabetes*

*Centers for Disease Control and Prevention (CDC), NHIS, NHANES III, NIH

The researchers reported these five factors most predictive of the occurrence of a foot ulcer:

- History of amputation (hazard ratio 2.57)
  History of foot ulcer (hazard ratio 2.18)
  Insensitivity to the Semmes-Weinstein monofilament at one or more of nine locations on each foot (hazard ratio 2.03)
  Onychomycosis (hazard ratio 1.58)
  Visual acuity poorer than 20/40 (hazard ratio 1.48).*

*Edward J. Boyko, MD, MPH in Diabetes Care 2006

Quality and Cost (based upon):

- Patient care – good practice patterns and measures for processes and outcomes of care
- Financial Cost

  - direct medical costs

  - indirect costs (disability, work loss, premature mortality)
- Avoid “too much care” that can lead to harm
- *Pay for Performance* – “tiering” of providers *or Retroactive Punishment Program*

Indicators*

- Impact on Health
- Importance – both for consumers and policymakers
- Susceptibility to be influenced by the health care system

*OECD health project

Three types of measures to improve the care for people with diabetes*

- Outcome Measures
- Process Measures
- Balancing Measures

*Institute for Healthcare Improvement

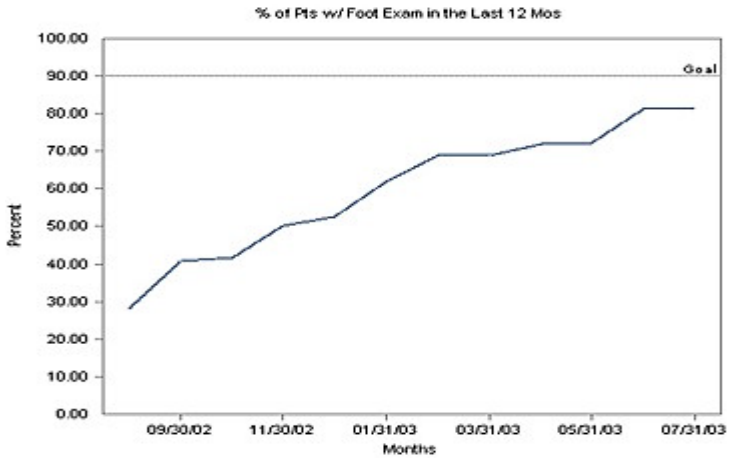
Indicators of Quality of Care

- Annual eye exam (process of diabetes care)
- Annual foot exam (process of diabetes care)

Outcomes (incidence rate)

- Lower extremity amputation rates (distal outcome)
- Blindness (distal outcome)

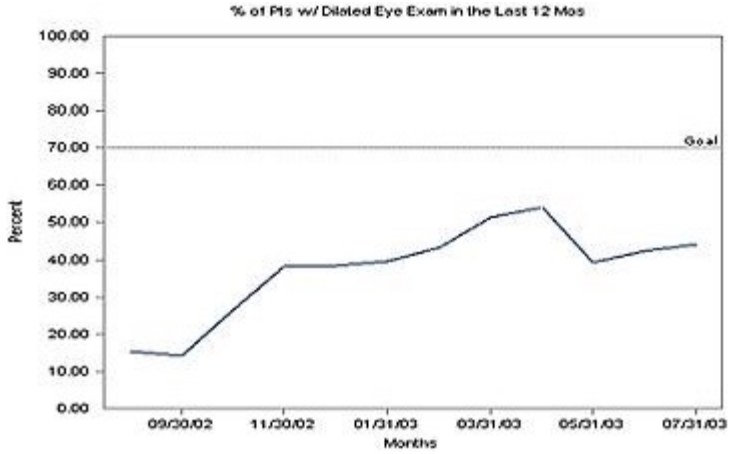
Percentage of Patients Who Had a Foot Exam in the Last 12 Months



- The number of diabetic patients in the registry who had a documented foot exam in the last 12 months, divided by the total number of diabetic patients in the registry. Multiply by 100 to get the percentage.

*Institute for Healthcare Improvement

Percentage of Patients Who Had a Dilated Eye Exam in the Last 12 Months



- The number of diabetic patients in the registry who had a dilated eye exam in the last 12 months, divided by the total number of diabetic patients in the registry. Multiply by 100 to get the percentage

*Institute for Healthcare Improvement

Measures or Indicators

- Extracting the data from medical records and claims data - billing records
  CPT codes
- Hospital records
  discharge diagnoses (DRGs)

- EHR – will drive this process (cookbook medicine)

Can one size fit all?

Measures or Indicators

Is it only numbers?

- *Percentage of patients who receive a dilated eye exam or evaluation of retinal photography during the current year*
- *Percentage of patients receiving at least one foot exam annually*

What's next?

What's next?

- *ETGs (Episodes of Treatment Groups)*
  - *Quality*
  - *Efficiency*
  - *Cost*

- *Economic Profiling*

Barriers to Overcome

- Managed Care Plans
  - -Need for referral from PCP to specialist
  - -Copayments

- Access to healthcare providers
  - - Medicare participants (Title XVIII)
  - - Medicaid participants (Title XIX)

    “the podiatry profession initiative to change Title XIX”

NCQA

CECS - Dartmouth Medical School

Change can be difficult …

Our Plan Focus - Study Group

- Standardize the assessment
- Weight the task
- Measure
- Organize
- Improve
- *Be willing to change*

Specialty specific points of quality

- **FOOT EXAM** and **EYE EXAM**

  which parameters will meet the inclusion criteria, are they…

  -medically necessary

  -can we extract the findings easily

  -are they measurable (quantify)

  -*can we improve upon them…*

STUDY

- Volunteer Providers DPM and OD
- State Level – control confounders, legal barriers, established standards of care
- MPMS and MSO – petition to establish quality improvement committee
- Benefits of working together

GOALS

TAKE CHARGE OF THE PROCESS

- DETERMINE THE PARAMETERS YOU WANT TO MEASURE

- DECIDE HOW YOU WILL MEASURE

- COLLECT THE NECESSARY DATA

- RUN THE STATS

- STRATIFICATION

- WALK THROUGH AND IMPROVE THE PROCESS

CONTROL OUR OWN DESTINY AS WE IMPROVE UPON THE PUBLIC HEALTH