Course Title:  OD Scrabble: Scientific Evidence, Pseudoscience, and Clinical Care

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Course Length: 1 hour

Course Description

How should we approach clinical decision-making? Developed through a formal review process incorporating the best, most current scientific with expert clinical opinion, Optometric Clinical Practice Guidelines (CPGs) provide a compass for the diagnosis, management, and treatment of frequently encountered eye and vision conditions. This case-based course illustrates the use of evidence-based medicine, preferred practice patterns and CPGs to guide patient care.

Course Goal:

To provide the clinician with guidelines for patient care based upon the best scientific evidence, along with the optometrist’s training and experience.

Course Objectives:

1. Become familiar with the Institute of Medicine’s guidelines for the development of trustworthy evidence-based CPG.
2. Discuss the most relevant concepts of evidence-based medicine, preferred practice patterns and CPGs.
3. Apply these concepts to everyday patient care.
4. Critically review the literature to separate useful science from “pseudoscience”.
5. Discuss science-based standards of care for common eye diseases and conditions.

Course Outline:

OD Scrabble: Scientific Evidence, Pseudoscience, and Clinical Care

Background:

Combining the best available research and scientific evidence, Optometric Clinical Practice Guidelines (OCPGs), Preferred Practice Patterns (PPP) and Evidence-based Clinical Practice Guidelines (CPG) provide a roadmap for clinicians to manage patients with both eye conditions and diseases.

1. What is EBM?

EBM supposes that care of the highest quality is provided based on peer-reviewed information available to medical practitioners.

Definition: Evidence-based medicine (EBM) is the conscientious, intentional and judicious use of current clinical and scientific research to make clinical decisions about the care of individual patients in order to provide the highest quality of care.
Evidence-based Clinical Practice Guidelines integrates individual clinical expertise with available external clinical evidence from systematic research. EBM then becomes a compass that guides clinical protocols to achieve effective treatment outcomes. Participating in EBM doctors are required to gather new information and in such it is a lifelong learning process aimed at enhancing both patient care and the performance of doctors.

Institute of Medicine (IOM), a division of the National Academies of Sciences, Engineering, and Medicine in March 2011 call for standardization in clinical care.

The intent of EBM is to provide individuals "with care based on the best evidence that is currently available."
- Evidence-Based Medicine Working Group, Evidence-based medicine. A new approach to teaching the practice of medicine JAMA, 268 (1992), pp. 2420–2425

2. Let’s look at some cases and how we can use the CPG:

Case # 1.

56 y/o M with 12 yrs DM II “controlled”
CC: with 12 yrs DM II
“I am very well controlled”
"My A1C is about 8.7 but my blood sugar is low in the morning"
“I don’t need glasses my PCP has been bugging me to get eyes checked, I see well”.
VA OD 20/20 OS 20/20 OU 20/20
Manifest OD + 0.00 20/20 ADD + 2.25 20/20
OS + 0.25 20/20 ADD + 2.25 20/20
Fundus: Mild to Moderate Non Proliferative Diabetic Retinopathy, No Macular edema

What is the best management? send for FA? observe in 12 months? OCT?

“Patients with retinal micro aneurisms and occasional blot dot hemorrhages or hard exudates should be re examined within 6-12 months because disease progression is common. The natural history of type I DM patients suggest approximately 16% of patients with mild retinopathy(hard exudates and micro aneurisms only)will progress to proliferative stage within 4 years.”

“Laser surgery and FA are not indicated for this group of patients. Color funds photography and OCT imaging of the macula may occasionally be helpful to establish a baseline for future comparison and for patient educations”

For patients with mild NPDR, the 4-year incidence of either CSME or macular edema that is not clinically significant is 12%. For moderate NPDR, the risk increases to 23% for patients with Type 1 or 2 diabetes. Patients with macular edema that is not clinically significant should be re-examined within 3-4 months because they are at significant risk of developing CSME.

Diabetic Retinopathy PPP - Updated 2016
AAO PPP Retina/Vitreous Panel, Hoskins Center for Quality Eye Care
Case # 2.
The 8 year old hyperopic patient
CC: underperforming in reading, asthenopia, frequent blinking; 1st eye exam
VA OD 20/25 OS 20/25 OU 20/20-
SLE and Fundus: unremarkable
Manifest OD + 2.00 20/20- Cyclopedic OD + 4.00 20/20-
OS + 2.25 20/20- OS + 4.50 20/20-

What final Rx do we give him?

“There is no universal approach to the treatment of hyperopia. Each patient should be considered in terms of age, degree of symptoms, amount of hyperopia, state of accommodation, visual acuity, and efficiency during the performance of visual tasks.”

“ A survey of prescribing patterns suggests that for 2-year-olds many practitioners use a threshold of +3.0 D of bilateral asymptomatic hyperopia, while some use a threshold of +5.0 D. Hyperopic correction should also be prescribed along with other interventions (e.g., occlusion or active vision therapy) for all young patients with actual or suspected amblyopia or strabismus.”

- Care of the Patient with Hyperopia (CPG16) 1997 I Revised 2008

Case # 3.
58 y/o F
CC: I am seeing funny out of right eye
BCVA OD 20/30 OS 20/20 OU 20/20
Fundus: 1-A (impending) macular hole

What is the best management? send to Retina surgeon? observe in 12 months? OCT?

Characterized by: Loss of the foveal depression and a yellowish foveal spot (100–200 µm in diameter). Localized shallow detachment of the perifoveal vitreous cortex with persistent adherence to the foveola. Vitreofoveal traction may horizontally separate (split) the retina at the fovea (pseudocyst) that corresponds to the yellow spot.
• Epiretinal membranes are uncommon
• Visual acuity ranges from 20/25 to 20/80 - Surgical intervention is not recommended

1-A and 1-B

“Some people with stage 1-A or 1-B macular holes have foveal cysts that may resolve completely without treatment. One study reported that patients with foveal cysts can remain stable with good vision for up to 5 years.”

“The visual acuity of patients with foveal cysts may improve when the posterior vitreous detaches from the central macula. Most patients who present with good central visual acuity can be followed and asked to return promptly if symptoms worsen.34 Although
stage 1-A and early stage 1-B lesions have been referred to as early or impending macular holes, only about 50% progress to an FTMH."

“The vitreous attachment separates from the fovea in the other 50%, and then the appearance of the fovea either returns to normal or appears as a reddish spot. If the vitreous spontaneously detaches from the fovea, there is often a rapid improvement in visual symptoms.”

Observation • Follow-up at 2–4 month intervals in the absence of new symptoms
• Recommend prompt return if new symptoms develop
• Encourage monocular visual acuity testing with Amsler grid

Idiopathic Macular Hole PPP - 2014
AAO Retina/Vitreous PPP Panel, Hoskins Center for Quality Eye Care

Case # 4.
13 y/o F
CC: I have been doing acupuncture for Myopia Control can you can do this?
Manifest OD - 1.00  20/20
          OS - 1.25  20/20

What is the best management? do OrthoK? Atropine eye drops? Is there even such a thing?

“A systematic review identified two RCTs for preventing progression of myopia in children. Both studies were small, experienced considerable subject attrition, and did not evaluate intervention effects in a manner that the Cochrane reviewers considered valid. The results were not combined as the two trials assessed different outcomes. The studies were unable to provide evidence of the effect of acupuncture for slowing the progression of myopia. Therefore, the decision to recommend acupuncture in children with myopia should be individualized to the patient’s needs and preferences, as these data do not permit any clear conclusions regarding the benefits or harms of these proposed treatments.”

Acupuncture to Slow Myopia in Children - PPP Clinical Question - 2013
AAO PPP Committee, Secretary for Quality of Care, Hoskins Center for Quality Eye Care
https://www.aao.org/clinical-questions/acupuncture-to-slow-myopia-in-children--september-

3. Let’s talk / look at what resources are there:

Evidence-Based Clinical Practice Guidelines:

1. Evidence-based Clinical Practice Guideline Comprehensive Adult Eye and Vision Examination (CPG1) 2015
2. Evidence-based Clinical Practice Guideline Eye Care of the Patient with Diabetes Mellitus (CPG3) 2014

Review of Consensus-Based Clinical Practice Guidelines:


Care of Patient with Amblyopia (CPG4) 1994 | Revised 1998 | Reviewed 2004

Care of the Patient with Primary Angle Closure Glaucoma (CPG5) 1994 | Revised 1998 | Reviewed 2001

Care of the Patient with Age-Related Macular Degeneration (CPG6) 1994 | Revised 1999 | Reviewed 2004

Care of the Patient with Anterior Uveitis (CPG7) 1994 | Revised 1999 | Reviewed 2004

Care of the Adult Patient with Cataract (CPG8) 1995 | Revised 1999 | Reviewed 2004

Care of the Patient with Open Angle Glaucoma (CPG9) 1995 | 2nd Edition 2002 | Revised 2010

Care of the Patient with Ocular Surface Disorders (CPG10) 1995 | 2nd Edition 2002 | Revised 2003 | Reviewed 2010


Care of the Patient with Strabismus: Esotropia and Exotropia (CPG12) 1995 | Revised 1999 | Reviewed 2010

Care of the Patient with Retinal Detachment and Peripheral Vitreoretinal Disease (CPG13) 1995 | Revised 1999 | Reviewed 2004


Care of the Patient with Myopia (CPG15) 1997 | Reviewed 2006

Care of the Patient with Hyperopia (CPG16) 1997 | Revised 2008

Care of the Patient with Presbyopia (CPG17) 1998 | Revised 2010

Care of the Patient with Accommodative and Vergence Dysfunction (CPG18) 1998 | Revised 2010

Care of the Contact Lens Patient (CPG19) 2000 | 2nd Edition 2006
These guidelines represent our best evidenced based knowledge and are very important as they provide guidance for clinicians and standardize care of the profession. They provide a guide of clinical practice as they define and communicate the scope and quality of care and appropriateness of optometric management and interaction with other health care providers, the government, third party payers, and the public.

4. Resources


https://www.aao.org/about-preferred-practice-patterns


http://www.eboptometry.unsw.edu.au

5. Questions Answers