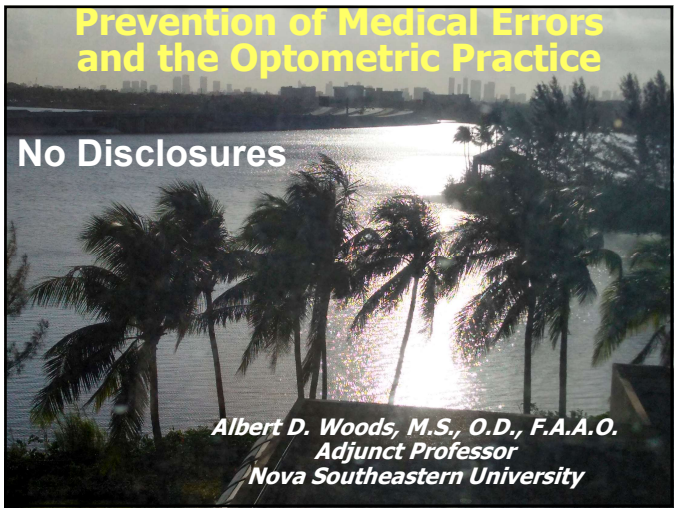
Prevention of Medical Errors and the Optometric Practice

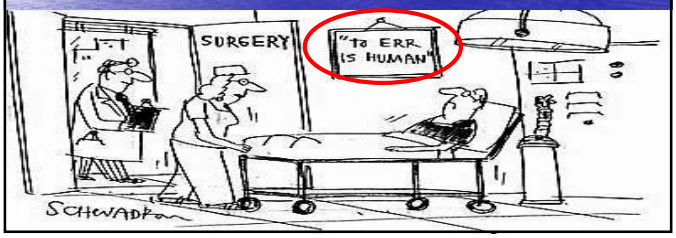


No Disclosures

Albert D. Woods, M.S., O.D., F.A.A.O.
Adjunct Professor
Nova Southeastern University

It all started in 1999

- November 1999 IOM report:
  To Err Is Human: Building a Safer Health System
- Medical errors → 44,000 to 98,000 deaths/year
- Medical errors **more deadly** than motor vehicle accidents, breast cancer, AIDS



Florida O.D. CE Begins

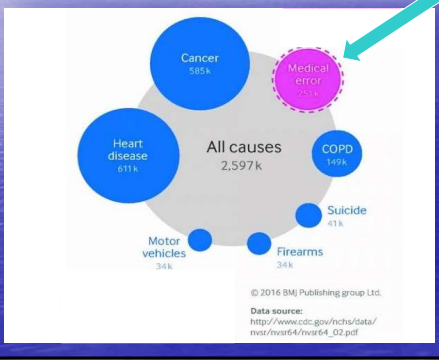
- May 2002
- New rules to **64B13-5.001**
- 2-hour course for licensure and renewal
- We are not the only ones…

Florida Statute 456.013

2015…famous person almost gets it…

2016 – Same As It Ever Was →

Med Errors 3rd leading cause of death USA



2017 – *any better*?

Preventable Deaths in American Hospitals

January 23, 2017

Hospital medical errors are the third leading cause of death in the United States. That's 700 people per day, notes Steve Swensen. "And most of those have a second victim: the nurses, doctors, social workers, managers, pharmacists involved in their care."

Maybe the number is much much lower

Deaths from medical errors: What to believe, what to think?

Estimating deaths due to medical error: the ongoing controversy and why it matters

Kaveh G Shojania,[1] Mary Dixon-Woods[2]

John D. Banja, In the past few years, flurries of articles have discussed the vexing issue of fatal medical errors

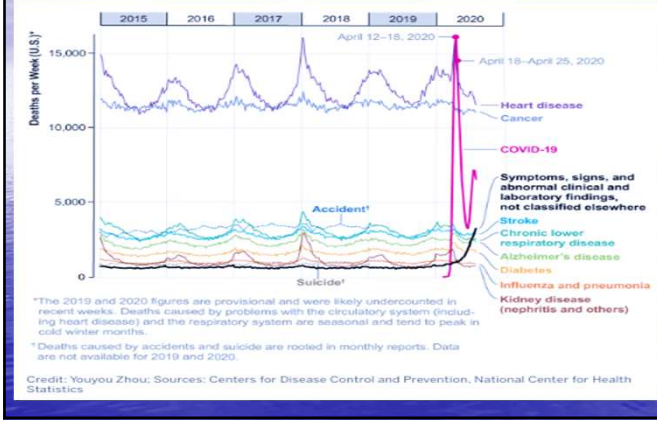
2019 – Numbers lower with new data analysis

Prevalence, severity, and nature of preventable patient harm across medical care settings: systematic review and meta-analysis

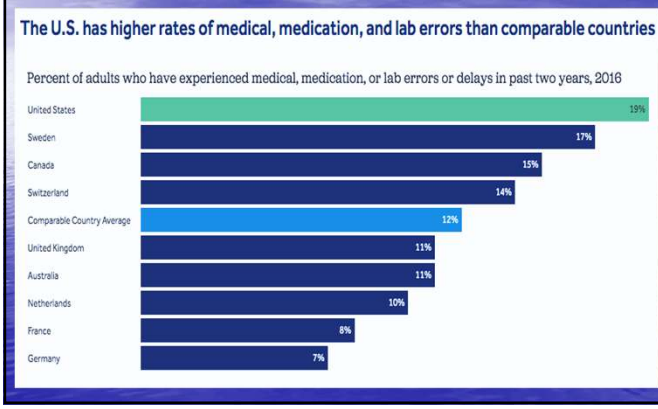
BMJ 2019 ; 366 doi: https://doi.org/10.1136/bmj.l4185 (Published 17 July 2019)
Cite this as: *BMJ* 2019;366:l4185

RESULTS: Of the 7313 records identified, 70 studies involving 337 025 patients were included in the meta-analysis. The pooled prevalence for preventable patient harm was 6% (95% confidence interval 5% to 7%). A pooled proportion of 12% (9% to 15%) of preventable patient harm was severe or led to death. Incidents related to drugs (25%, 95% confidence interval 16% to 34%) and other treatments (24%, 21% to 30%) accounted for the largest proportion of preventable patient harm. Compared with general hospitals (where most evidence originated), preventable patient harm was more prevalent in advanced specialties (intensive care or surgery; regression coefficient b=0.07, 95% confidence interval 0.04 to 0.10).

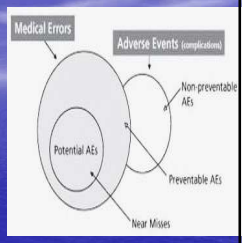
Where Did Covid-19 fit in?



How do we compare?



You have an open invitation to the event of the year!



- **Medical Adverse Event**
  - ***Injury 2nd to medical management…not the disease***
- **Medical Error**
  - ***Adverse event 2nd to to an error…***
    preventable adverse events/sentinel event
  - ***Why the error occur and changes are needed***

How are medical errors classified?

- **Error**…*doing something incorrectly or not doing something that has an undesirable or potential for an undesirable outcome.*
  - → **Error of Execution**…*planned action not completed as intended*
  - → **Error of Planning**…*wrong plan to achieve goal…wrong Dx or Tx*

How are medical errors classified?

- **Active Error…***frontline human error that the effect is apparent…in direct contact with the patient…"sharp end".*

- ***Latent Error…****removed from the frontline…2nd to the layers of our health care system…"blunt end".*

Factors that can increase risk of errors…

- ***Fatigue***
- ***Alcohol/drugs***
- ***Illness***
- ***Inattention/distractions***
- ***Emotional states***
- ***Unfamiliar situations/conditions***

Factors that can increase risk of errors…

- ***Equipment problems***
- ***Inadequate labeling/instructions***
- ***Communication problems***
- ***Handwriting*** Heparin 10000
- ***Sound alike drugs***
- ***Office set-up/record keeping***

Medication Errors

- ***1.5 million*** Americans effected by mistakes made in prescribing, dispensing, using prescription drugs – IOM 2006
- ~7,000 medication *error deaths* ***(Starfield JAMA 2000)***
- ***Tens of thousands*** outpatient!!! – IOM 2006
- Fatal medication errors ***(FDA 1993-1998)***
  - *Improper dosage (41%)*
  - *Wrong drug (16%)*
  - *Wrong route (16%)*
- 50% fatal medication errors in pts > 60 yo
- Time of year?

Medication Errors

- **Sound-A-Like/Spell-A-Like Medications**
  Common cause of systemic medication errors
  - *Lamictal (antiepileptic) vs Lamisil (antifungal)*
  - *And zillions more*

  Ocular
  - *Tobrex vs Tobradex*

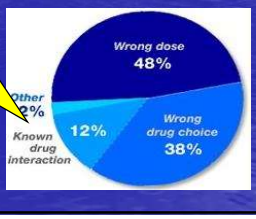
Medication Errors

- Look-A-Like Packaging

Medication Errors

- **Six Rights of administering meds**
  - ***Right patient***
  - ***Right drug***
  - ***Right dose***
  - ***Right time***
  - ***Right route***
  - ***Right dosage form***

  #7 Right pt education



Medication Errors

- **Reduce by:**
  - List allergies and medications
  - Educate patients
    - ***Do not rely on pharmacist***
    - ***What, how, when, SE's/what to do, questions***
  - Legible… FL Statute 456.42
  - Avoid abbreviations
  - Computerize drug order entry
  - Standardize packaging, labeling, storage
  - Unit dose drug packaging
  - Extra caution with special populations

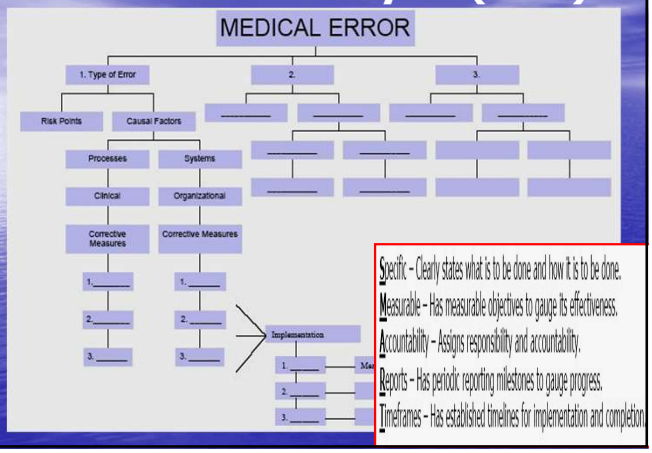
Root Cause Analysis (RCA)

- JCAHO requirement
- Goal is to identify the underlying cause of a medical error and develop prevention strategies
- Looks beyond the immediate result, identifies events or contributing factors which led to the error
- Must be credible and thorough to be effective…

Root Cause Analysis (RCA)

CREDIBLE	THOROUGH
Multi-disciplinary team – The review team is comprised of participants from multiple disciplines and backgrounds closely associated with the processes and systems being reviewed.	**Identification of all proximate causes** - Proximate causes are those events or occurrences which produce an effect or result. They are the catalyst from which anything proceeds and without which, it would not exist. All of the proximate causes must be identified and considered.
Team training – Necessary training is provided team members.	**Review of all related systems and processes** - A review of all of the related or involved systems and processes must be completed. Inherent in this review should be direct inquiry as to "why" all of the steps in the process are done or not done.
Consideration of all influences – Consideration is given to all of the systems and processes that were involved in the event. None of the involved systems and processes can be ignored or left untouched.	**A continuous focus on all opportunities to improve systems** - Attention must be given to any opportunities for corrective actions. All opportunities for improvement must be addressed.
Review of all pertinent literature – Relevant literature and written material on the processes and systems are included in the review process.	**Plan outline** – An outline of the planned recommendations must be provided which addresses the opportunities for improvement as well as explaining those situations where opportunities are not being pursued.
Team endorsement – The team's findings are consistent and provide conclusions which do not raise questions or contain contradictory information. Additionally, the recommendations should be endorsed by the entire team.	**Plan explanation** – The recommendations arising out of the review process should be explained fully, including the assignment of responsibility to specific individuals and a methodology for measuring outcomes and results.
Administrative support – The findings of the review team should be supported and endorsed by the administration. Copies of the recommendations should be made available to all personnel who could benefit from them.	

Root Cause Analysis (RCA)



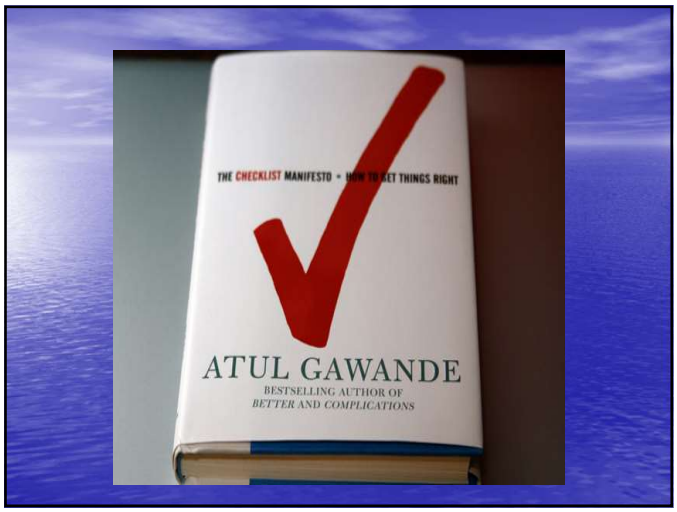
Trigger Tools for Identifying Adverse Events

Institute for Healthcare Improvement
Cambridge, Massachusetts, USA

The use of "triggers," or clues, to identify adverse events (AEs) is an effective method for measuring the overall level of harm from medical care in a health care organization. Traditional efforts to detect AEs have focused on voluntary reporting and tracking of errors. However, public health researchers have established that only 10 to 20 percent of errors are ever reported and, of those, 90 to 95 percent cause no harm to patients. Hospitals need a more effective way to identify events that do cause harm to patients, in order to select and test changes to reduce harm.

There are various Trigger Tools available on IHI.org, including:

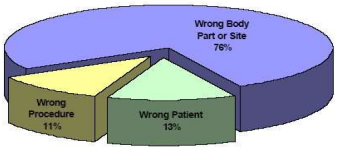
- IHI Global Trigger Tool for Measuring Adverse Events [Danish, German, Swedish, and UK translations also available]
- Trigger Tool for Measuring Adverse Drug Events
- Trigger Tool for Measuring Adverse Drug Events in a Mental Health Setting
- Trigger Tool for Measuring Adverse Drug Events in the Nursing Home
- Surgical Trigger Tool for Measuring Peri-operative Adverse Events
- Intensive Care Unit Adverse Event Trigger Tool
- Pediatric Trigger Toolkit: Measuring Adverse Drug Events in the Children's Hospital
- Perinatal Trigger Tool
- Trigger Tool for Measuring Adverse Events in the Neonatal Intensive Care Unit
- Outpatient Adverse Event Trigger Tool



Errors and Eye Surgery

Surgical Confusions in Ophthalmology

John W. Simon, MD; Yen Ngo, MD; Samira Khan, MD; David Strogatz, PhD



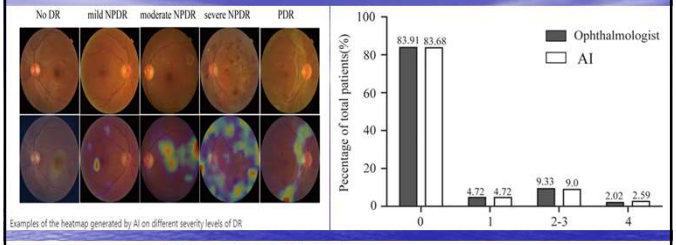
Objective: To investigate the hypothesis that surgical confusions rarely occur but are unacceptable to the public; occur in predictable circumstances; involve a wrong lens implant more often than a wrong eye, procedure, or patient; and can be prevented using the Universal Protocol.

Results: The most common confusion was wrong lens implants, accounting for 67 cases (63%). Wrong-eye operations occurred in 15 cases, wrong-eye block in 14, wrong patient or procedure in 8, and wrong corneal transplant in 2. Use of the Universal Protocol would have prevented the confusion in 90 cases (85%).

Reduction of errors…Optometry

- Making the correct diagnosis
- Providing the correct treatment based on the diagnosis
  - *evidence-based medicine (EBM)*
- Making sure the correct medication is Rx'ed
- Correct follow-up/automated recall systems
  - *follow-up with no-show patients*
- Equipment
  - *up to date, maintained, calibration schedules*
- Special populations

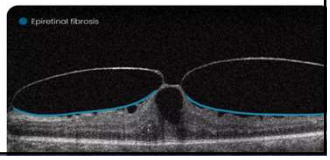
Reduction of errors – AI?



Altris is a unique ophthalmic image management system powered by AI

Altris AI is an ophthalmic image management system that helps ophthalmologists and optometrists in the detection of 54 pathological signs and 49 pathologies. Altris AI algorithm is trained on the database of 5 million unique OCT cases obtained in 11 practicing ophthalmology clinics.

The utilization of AI for OCT in ophthalmology and optometry brings diagnostics to a new level improving patient outcome as a result



ChatGPT

AD How to tell if retinal photo is from a male or female

It is not possible to determine the gender of a person based on their retinal photograph. The structure of the retina, the light-sensitive tissue at the back of the eye, is similar in all people regardless of their gender. Factors such as age, health, and genetics can affect the appearance of the retina, but these characteristics do not vary based on gender.

It is important to note that making assumptions or attempting to infer personal characteristics, such as gender, based on physical characteristics can be harmful and is not a scientifically valid approach. It is always best to respect an individual's self-identified gender and not make assumptions based on physical characteristics.

Reporting Errors

- **FL Statute 395.0197**
  - Certain adverse events must be reported to the state
    - ***Death***
    - ***Brain or spinal damage***
    - ***Permanent disfigurement***
    - ***Fracture/dislocation bones or joints***
    - ***Transfer of patient to more acute level of care***
    - ***Surgery on wrong patient***
    - ***Surgery on wrong-site***
    - ***Wrong surgical procedure***
- ***Chapter 463.0141 - OUR NOW***
  - ***Adverse drug reaction, date of rxn, if referral needed***

Reporting Errors for FL

The required notification must be in writing and submitted to the department by certified mail. The required notification must be postmarked within 15 days ... if the adverse incident occurs ... at the office ... If the adverse incident occurs when the patient is not at the office ..., the required notification must be postmarked within 15 days after the licensed practitioner discovers... the occurrence of the adverse incident.

FL Meds

Antibiotics
1. Amoxicillin
2. Dicloxacillin
3. Doxycycline
4. Keflex
5. Minocycline
6. Azithromycin
7. Ciprofloxacin

Antivirals
1. Acyclovir
2. Famciclovir
3. Valacyclovir

Oral anti-glaucoma agents
1. Acetazolamide
2. Methazolamide

72 HR RULE

Analgesics
1. Tramadol
2. Acetaminophen 300 mg with No. 3 codeine phosphate 30 mg.

Caution using azithromycin in patients with heart disease

Azithromycin 'Z-packs' tied to potentially fatal arrhythmia

Anicka Slachta | May 15, 2019 | Electrophysiology & Arrhythmia

Long QT Syndrome (LQTS)

The FDA is updating azithromycin drug labels to reflect evidence that the medication can contribute to a rare heart rhythm abnormality known as torsades de pointes.

Ciprofloxacin ("Cipro")

- Fluoroquinolone – broad spectrum, 2nd gen.
- Dosage 500 mg q 12-24 hrs
- **Good for PCN allergic pts**
- Tendinitis or **rupture of tendons**
- Can cause elevated, toxic blood levels of theophylline (COPD)
- Do not use in **MG pts**

Warning

Taking ciprofloxacin increases the risk that you will develop tendinitis (swelling of a fibrous tissue that connects a bone to a muscle) or have a tendon rupture (tearing of a fibrous tissue that connects a bone to a muscle) during your treatment or for up to several months afterward. These problems may affect tendons in your shoulder, your hand, the back of your ankle, or in other parts of your body. Tendinitis or tendon rupture may happen to people of any age, but the risk is highest in people over 60 years of age. Tell your doctor if you have or have ever had a kidney, heart, or lung transplant; kidney disease; a joint or tendon disorder such as rheumatoid arthritis (a condition in which the body attacks its own joints, causing pain, swelling, and loss of function); or if you participate in regular physical activity. Tell your doctor and pharmacist if you are taking oral or injectable steroids such as dexamethasone (Decadron, Dexpak), methylprednisolone (Medrol), or prednisone (Sterapred). If you experience any of the following symptoms of tendinitis, stop taking ciprofloxacin, rest, and call your doctor immediately: pain, swelling, tenderness, stiffness, or difficulty in moving a muscle. If you experience any of the following symptoms of tendon rupture, stop taking ciprofloxacin and get emergency medical treatment: hearing or feeling a snap or pop in a tendon area, bruising after an injury to a tendon area, or inability to move or to bear weight on an affected area.

Taking ciprofloxacin may worsen muscle weakness in people with myasthenia gravis (a disorder of the nervous system that causes muscle weakness) and cause severe difficulty breathing or death. Tell your doctor if you have myasthenia gravis. Your doctor may tell you not to take ciprofloxacin. If you have myasthenia gravis and your doctor tells you that you should take ciprofloxacin, call your doctor immediately if you experience muscle weakness or difficulty breathing during your treatment.

TABLE ANTIVIRALS FOR TREATMENT OF HERPES ZOSTER (SHINGLES)[5,19,25]

Drug	Dosage Geriatric & Adult	Renal Impairment	Comments/Special Populations	Monitoring Parameters
Acyclovir	800 mg q4h (5 times/day) for 7-10 days Note: Obese patients are dosed using IBW	Adjust dosage for renal impairment based on creatinine clearance	Initiate therapy within 72 h of rash onset; may be administered without regard to meals. **Geriatric Considerations:** Use with caution in the elderly; higher risk for CNS, renal, and GI adverse events.	U/A, BUN, serum creatinine, liver enzymes, CBC
Famciclovir	500 mg q8h (3 times/day) for 7 days	Adjust dosage for renal impairment based on creatinine clearance	Initiate therapy within 72 hours of rash onset; may be administered without regard to meals. **Geriatric Considerations:** Famciclovir has been shown to accelerate healing, reduce duration of viral shedding, and resolve PHN faster than placebo. Comparison trials with acyclovir or valacyclovir are not available.	Serum creatinine at baseline; periodic CBC during long-term therapy
Valacyclovir	1000 mg (1 g) q8h (3 times/day) for 7 days	Adjust dosage for renal impairment based on creatinine clearance	Initiate therapy within 48-72 h of rash onset; **Geriatric Considerations:** Use with caution in the elderly; CNS effects have been reported; more convenient dosing and increased bioavailability, without increasing side effects, make valacyclovir a favorable choice relative to acyclovir; has been shown to accelerate resolution of PHN pain.	U/A, BUN, serum creatinine, liver enzymes, CBC

BUN, blood urea nitrogen; CBC, complete blood cell count; CNS, central nervous system; GI, gastrointestinal; IBW, ideal body weight; PHN, postherpetic neuralgia; U/A, urinalysis.

When medical error becomes malpractice…

- **Malpractice** (***each*** must be proved)
  - *Doctor had a duty to the patient*
  - *Doctor breached standard of care for the event*
  - *Breach was the cause of injury to the patient*
  - *Patient was in fact damaged/harmed as a result of the injury*
  - *There was no contributory or apportioned negligence*

Filing An Optometry Malpractice Claim

Contact Us

Fill out the quick contact form below for a fast and free case consultation.

Name *

Phone *

Email *

Tell us more.

Send

Eyesight is one of our most valuable senses, and we pay top dollar for optometrists to keep it in good condition. Medical malpractice suits extend to cover optometry malpractice. If you are eligible and can successfully substantiate your claim, you can recover a broad range of damages, from medical bills and loss of income, to rehabilitation and emotional damages.

Common Types of Optometrist Malpractice Cases

Our firm handles all types of medical malpractice cases, including those from harmed optometrist patients. It's quite heart-wrenching when we receive calls from devastated patients who've lost their sight because of their doctors' preventable errors.

According to *Optometric Management*, "The vast majority of malpractice cases fall within three categories of disorders: retinal detachment, glaucoma, and tumors. Failure to diagnose choroidal neovascularization and proliferative diabetic retinopathy are important but are less frequent causes of malpractice litigation."

Other triggers for a malpractice lawsuit that we've come across in our practice include the following.

- Misdiagnosis of intraocular disease
- Corneal disease
- Not obtaining informed consent
- Complications in contact lens wearers leading to diagnostic errors
- Failing to use diagnostic drugs for dilation of the pupil
- Adverse responses to ophthalmic drug
- Not receiving proper notification about the risks of procedures or of other treatment options
- Failure to offer binocular vision therapy to amblyopic children

Do you have a valid medical malpractice case?

Proving medical malpractice takes three elements.

- Unacceptable care: Did the optometrist act in a way that most other optometrists in similar situations would have acted? Did he or she follow normal protocols and guidelines provided by the American Optometric Association? If your doctor fell short of the industry standard of care, it might be considered malpractice.
- Causation: The optometrist's behavior must be directly linked to your harm. In other words, if not for the doctor's negligence, you would not have been harmed. If you were injured or sustained injuries but it was a natural symptom of your disease not necessarily the doctor's actions, then you can't hold the doctor accountable.
- Damages: You have to have sustained actual damages as a result of the optometrist's mistake. If s/he made an error, but no harm came of it, you have no cause to file a suit.

Speaking to a Medical Malpractice Attorney about Your Case

Optometrists have a high standard of care for patients. If they breach this standard and are careless or negligent with their patients, it can have serious, long-term ramifications.

- Blindness
- Debilitating headaches
- Fatality

AOA Optometric Clinical Practice Guidelines

Optometric Clinical Practice Guidelines (OCPGs) are recommendations for patient care which are developed through a formal process. They combine the best available current scientific evidence and research with expert clinical opinion to recommend appropriate steps in the diagnosis, management, and treatment of patients with various eye and vision conditions.

Evidence-based Clinical Practice Guidelines — Due to the new standards released by the Institute of Medicine (IOM), a division of the National Academies of Sciences, Engineering, and Medicine in March 2011 calling for the development of **trustworthy evidence-based clinical practice guidelines**, the AOA Evidence-based Optometry Committee is currently revising the optometric guidelines.

Evidence-Based Clinical Practice Guidelines:

- Evidence-based Clinical Practice Guideline Eye Care of the Patient with Diabetes Mellitus, Second Edition (CPG3) 2019
- Evidence-based Clinical Practice Guideline Comprehensive Adult Eye and Vision Examination (CPG1) 2015
- Evidence-based Clinical Practice Guideline Comprehensive Pediatric Eye and Vision Examination (CPG-2) 2017

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 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 ***Currently in the review process***

Risks for malpractice claims

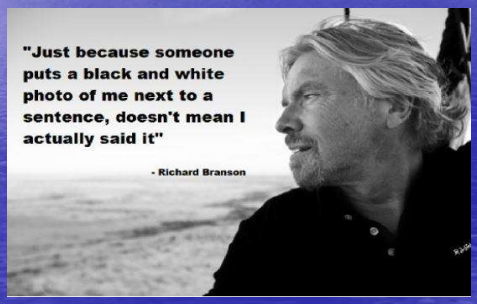
- *Troubled relationships with doctor (~70%)*
- *Subsequent consult doctor recommended calling a lawyer (27%-54%)*
- *Are health care providers or have health care providers in family (~38%)*
- *Higher expectations with medical advances*

Optometric Malpractice Claims

- **Misdiagnosis of Intraocular Disease**
  - ***POAG, retinal detachment, mass are highest rate***
  - ***but don't forget ARMD and DM!***
- **Injuries from Ophthalmic Materials**
  - ***CL's (corneal comps), Spectacles (polycarbonate)***
- **Misdiagnosis of Ant. Seg. Disease**
  - ***Corneal dz, FBs***
- **Improper Co-Management**
  - ***Refractive surgery, cataract surgery***
- **Injuries from Ophthalmic Drugs**
  - ***Angle closure***
- **Misdiagnosis of Binocular Vision Anomalies**
  - ***Failure to tx amblyopia***

Classe' 1998

What I Learned From A Past Student



Here's the good news…

Malpractice payments by optometrists: an analysis of the national practitioner databank over 18 years.

Duszak RS[1], Duszak R Jr.

Abstract

PURPOSE: The aim of this analysis was to describe characteristics and trends of malpractice payments by optometrists since the inception of the National Provider Data Bank (NPDB) as they assumed increasing prescriptive authority.

METHODS: NPDB data files were analyzed for details of optometrist malpractice payments from 1991 through 2008. Payment amounts, sources, and allegations were all identified and summarized, along with geographic and demographic data.

RESULTS: Between 1991 and 2008, a total of 609 optometrist malpractice payments were reported nationally, ranging from $50 to $2,050,000 (median, $57,500; mean, $156,055 ± 246,556), with 603 (99%) less than $1,000,000. Annual inflation-adjusted mean dollars and frequency of payments increased only nominally over the 18-year interval, from $154,573 to $155,151, and 30 to 40, respectively. More than half of all cases originated in 11 states. Alleged errors in diagnosis accounted for 55% of all cases.

CONCLUSION: Malpractice payments on behalf of optometrists are relatively infrequent (on average, less than 34 nationally each year) and usually relatively small (almost half less than $50,000). The frequency of payments and mean payments have increased little over the last 2 decades.

Reduction of malpractice…Optometry

- Good examination (DFE!)
- Good documentation… NEVER CHANGE RECORD
- Good patient relationships
- Good referral relationships
- Good clinical/office protocols
- EMR?

Reduction of malpractice…Optometry

- Good examination (DFE!)
- Good documentation… NEVER CHANGE RECORD
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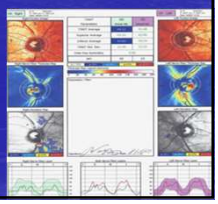
- Good referral relationships
- Good clinical/office protocols
- EMR?

POAG

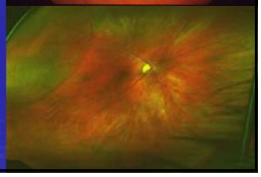
- Always do
  - *Applanation IOPs needed, **good** baseline*
  - *Assessment of ONH with dilated pupil – **MISSING?***
    - drawings, stereo photos, OCT, etc.
  - *Sensitive visual field (30-2, 24-2)*
  - *Medications*
  - *Medical history*
  - *Good follow-ups*
  - *Refer for laser/surg if needed*
  - *Current standard of care*



Retinal Detachment

- DFE!
- Symptoms
- Risk Factors
  - *Fresh PVD*
  - *Sig. myopia*
  - *Pseudophakia/aphakia*
  - *YAG capsulotomy*
  - *Lattice degeneration*
  - *Proliferative retinopathies*
  - *Trauma*
  - *h/o RD in fellow eye*

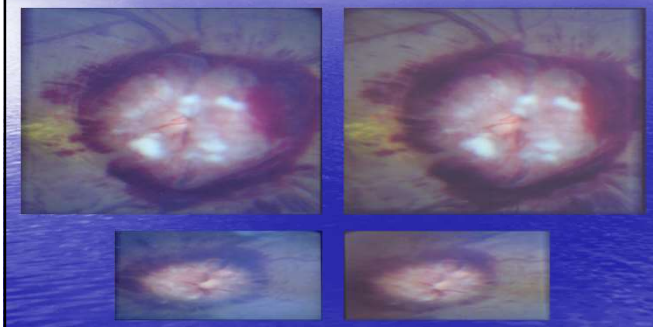
RTC STAT!



Neuro-Eye NOT TO MISS…

- **Swollen ONH**
  - ***AAION***
  - ***Infiltrative Optic Neuropathy***
  - ***"Papilledema"***
- **Pupil involved CN III, AbReg**
- ***Bi-Temporal VF Lost – and variations***
- ***New onset Horner's Syndrome***
- **Optic atrophy**

How Not To Manage A Swollen Nerve…

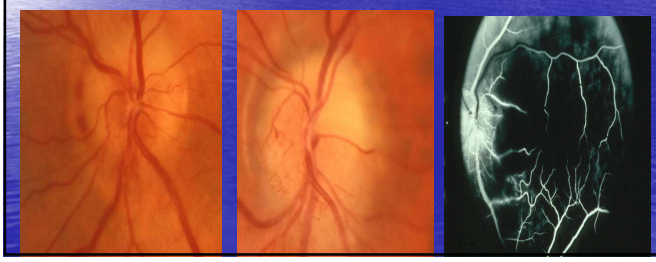


ARTERITIC ANTERIOR ISCHEMIC OPTIC NEUROPATHY (AAION)

- Over age 60 (*median dx age is 72 years*)
- Females>males
- More common in Caucasians
- >50% with 20/200 or worse VA
- The rules of ~1/3…

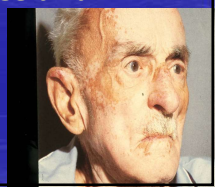
Fundus Appearance

- *Pale disc swelling*
- *Peripapillary hemorrhages*
- *Attenuated retinal arterioles*

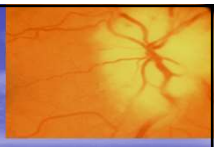


Systemic signs GCA:
Always Note in Chart!

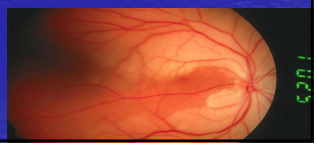
- *headache (cardinal symptom)*
- *scalp tenderness*
- *swollen temporal arteries*
- *jaw claudication*
- *proximal muscle stiffness and myalgias (PMR)*
- *weight loss (anorexia)*



Ocular signs of GCA:

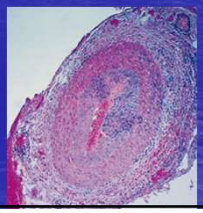


- *AION (most common)*
- *Amaurosis fugax (10%)*
- *CRAO!!! (10%)*
- *Ophthalmoplegia!!! (10%)*
  (CN III most common)



Management

- **STAT ESR**, CRP, CBC
  - *do labs in any pt over 50 with AION!*
- **STAT referral** *(do as I say…not as I do!)*



Early Papilledema

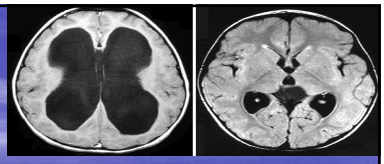
Note mild blurring of disc margin inferior and superior OU and that cup is still present

Papilledema – *these are easy!*

Marked disc edema
Note buried vessels

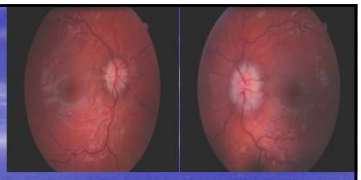
Chronic edema
Early gliosis and clumping of axoplasmic material

Etiologies



- ***Intracranial mass lesions (primary and metastatic)***
- ***Hydrocephalus***
- ***AV malformation***
- ***Meningitis/encephalitis***
- ***Subarachnoid hemorrhage***
- ***Trauma*** ***(subdural or epidural hematomas)***
- ***IIH***

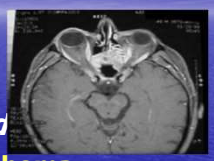
Management



- ***MRI [STAT]***
- ***Lumbar puncture (LP) – AFTER MRI!***
  (opening pressure and CSF analysis)
- ***Disc documentation*** ***(OCT/Photos)***
- ***Monitor VF, VA, CV, OCT***
- ***Refer to neuro-ophth. / neurology***

INFILTRATIVE OPTIC NEUROPATHY

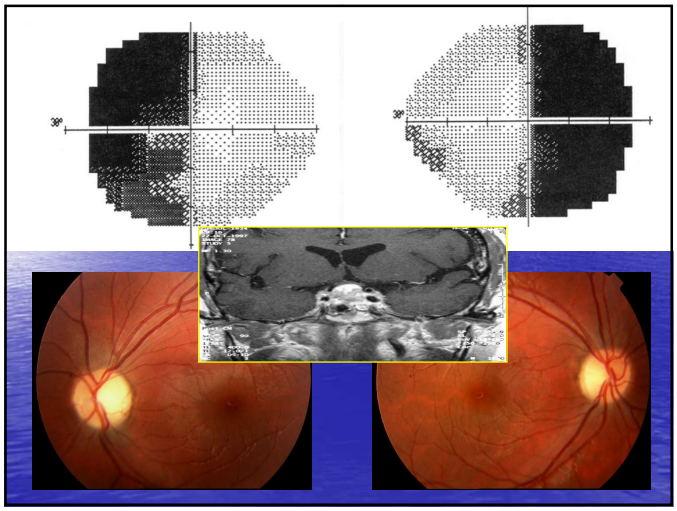
- ***Progressive VA/VF/CV loss with/without disc swelling***
- ***Unilateral/bilateral***
- ***Vitreous cells over ONH***
- ***Assoc. systemic d***



*sacroidosis
*leukemia
*metastatic neoplasia
*lymphoma
*syphilis

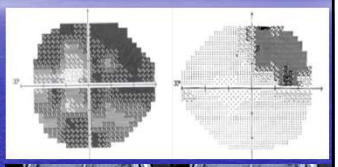
(***medical urgency*** for rad. tx in px's with leukemia/lymphoma/sacroidosis)

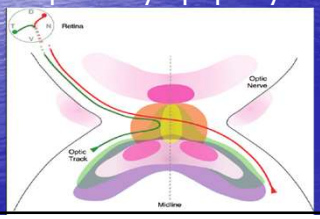
Infiltration is NOT Compression

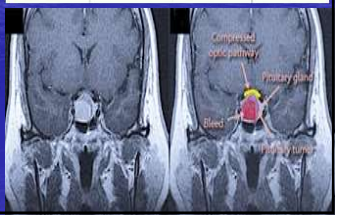


But what are other VF patterns?

- Very asymmetric incomplete bitemporal
- Unilateral temporal
- Junctional scotoma
- When to suspect a pituitary apoplexy







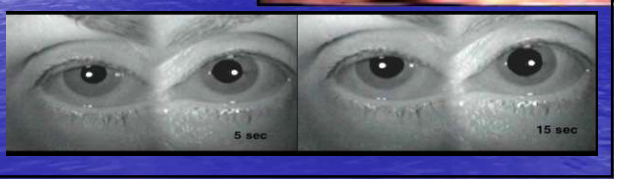
New Onset Horner's Syndrome

-red flag of underlying systemic dz

- Most 1st or 2nd order cases can be associated with significant pathology
  - Neoplasm (including Pancoast's lung apex tumor)
  - CVA (including Wallenberg's syndrome)
  - Demyelinating diseases
  - Trauma/surg.
- 3rd order cases can also have sig. pathology
  - Headache Assoc.
    - →Cluster
    - →Raeder's Syndrome
  - ICA Dissection
    - →Acute onset pain, dysgeusia
    - →TIA/CVA
  - Nasopharyngeal carcinoma

Horner's Syndrome

DILATION LAG is critical clinical sign: The miotic pupil is much slower to dilate when initially in darkness than fellow pupil; most dramatic differences at ~5 secs



Horner's Clinical Pearl

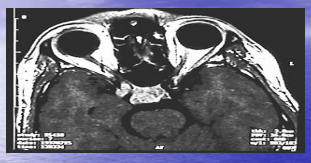
Any patient with a new onset Horner's syndrome, even if isolated with no other neurological signs or symptoms, should have imaging studies done!

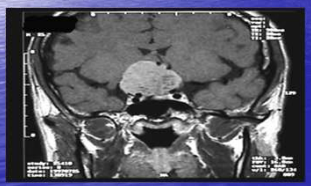
What the ER Did

Optic Atrophy – *missed over a decade by multiple docs*

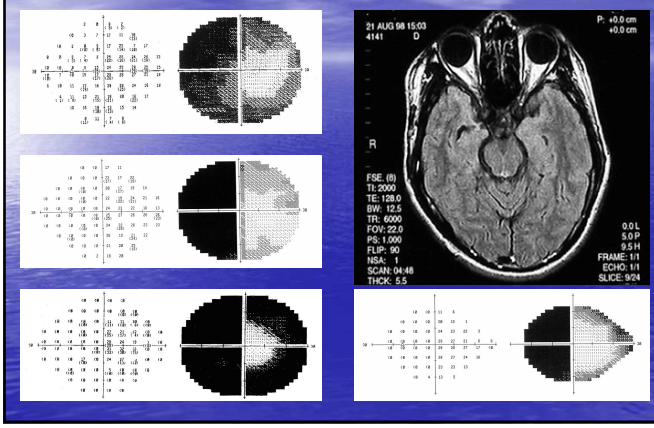
- Patient History

Initial MRIs





Pre/Post Course



Optic Atrophy and Age

Young

- *Inflammatory (post-viral first two decades)*
- *Demyelinating (after teens)*
- *Vascular (assoc. migraines or coagulation dysf.)*
- ***Compressive!***

Middle age

- ***Compressive!***
- *Vascular/ischemic*

Elderly

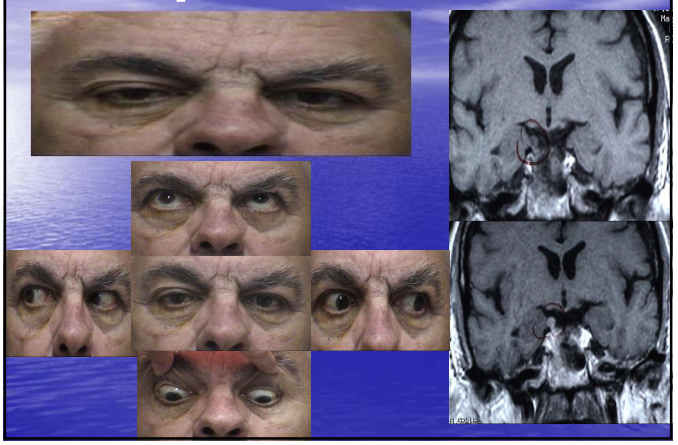
- *Ischemic (**GCA** incid. rises dramatically >70 yo)*
- ***Compressive!***

You all know this one…

WORRY…and STAT!

When not to use the "rule of the pupil"

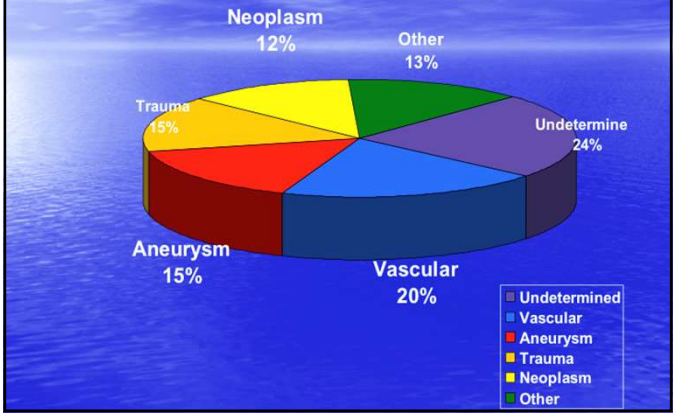
Incomplete 3rd's…*mass*



Aberrant Regeneration CN3 Palsies

- *Lid retraction in downgaze / adduction*
- *Pupillary changes with globe or lid mvt.*
- *NEVER occurs in microvascular dz –DM/HTN!*
- *ALWAYS r/o…*
- ***Aneurysm, Tumor,** Trauma (AT&T)*

Adult CN3 Palsies



Management of CN3 Palsies

IS PUPIL INVOLVED??

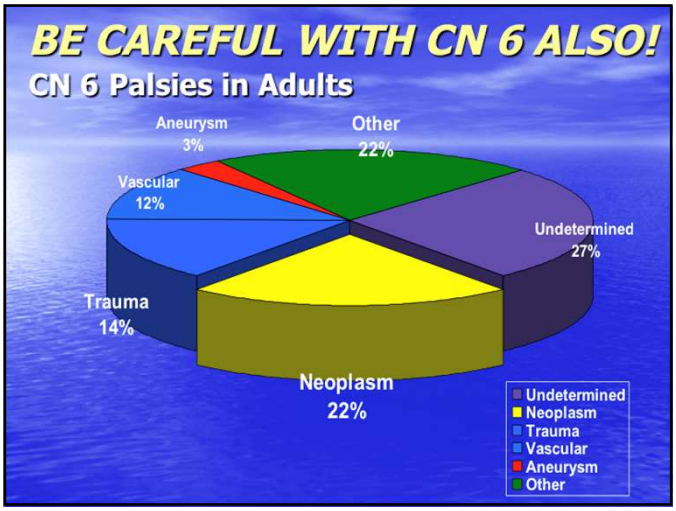
YES: ***STAT***
Neuroimaging/angiography

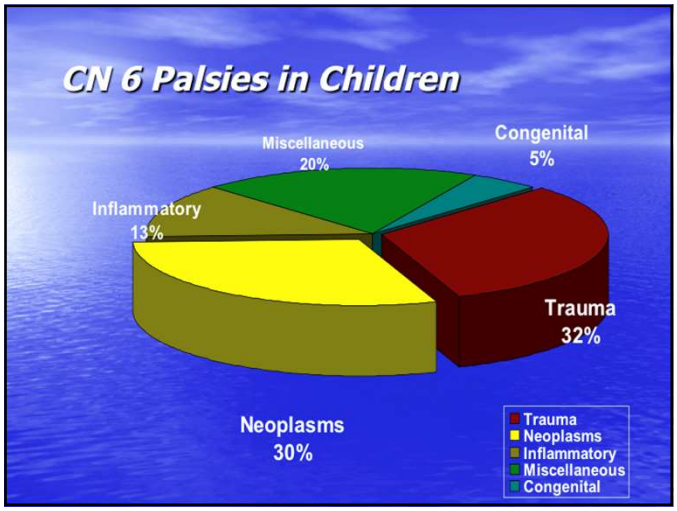
NO: Is it likely microvascular ?
Yes: Follow (?), image no imp. 3 mos
No: Image, angiography not needed

DO NOT DILATE!…DO NOT DILATE!!!
ALWAYS GET ESR (SED RATE) OLDER PTS

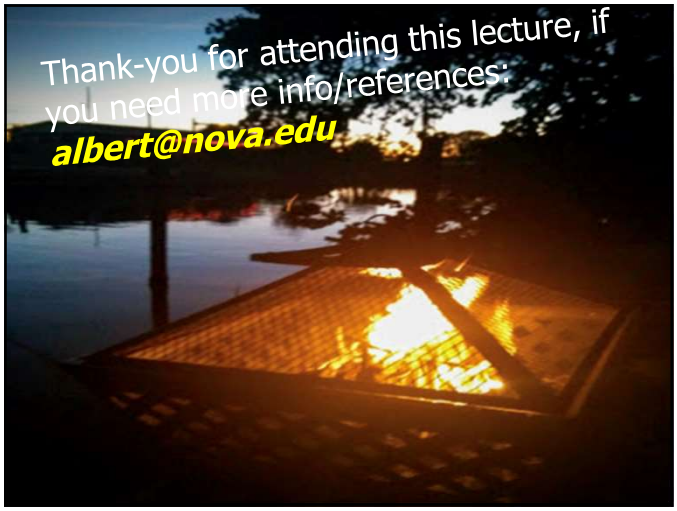
BE CAREFUL WITH CN 6 ALSO!

CN 6 Palsies in Adults




CN 6 Palsies in Children
Miscellaneous 20%
Congenital 5%
Inflammatory 13%
Trauma 32%
Neoplasms 30%
Trauma
Neoplasms
Inflammatory
Miscellaneous
Congenital


MISDIAGNOSIS OF INTRAOCULAR DISEASE 58% OF CLAIMS
Open-angle glaucoma 20 claims
Retinal detachment 17 claims
Tumors
Intraocular 6 claims
Brain 8 claims
Remember for Neuro-eye Malpractice $$$ Failure to Dx Mass..tumor/aneurysm
Failure to Dx GCA


Thank-you for attending this lecture, if you need more info/references:
albert@nova.edu