



# Rural Pearls

Thriving As a New  
Clinician in The 'Boonies

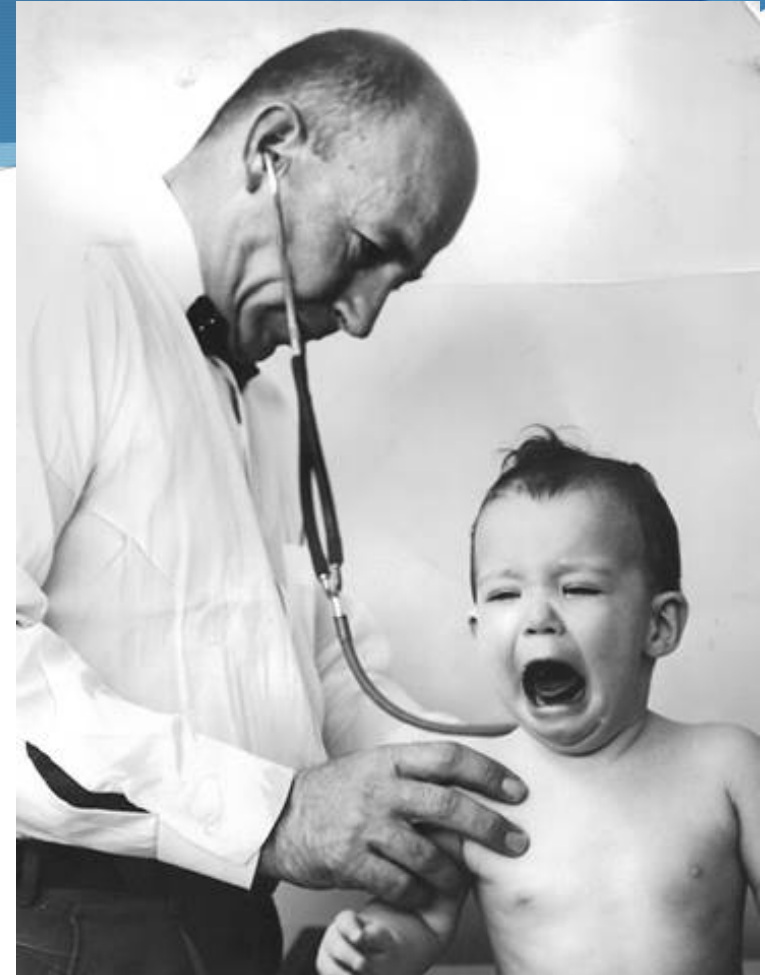
Benjamin W. Woodard, MSN, FNP-C

# Objectives

- ◆ **This presentation will review tools and competencies beyond basic NP education, for both new clinicians, their colleagues, and educators, including:**
  - ◆ **Qualities of rural primary care**
  - ◆ **Uniquely relevant clinical skills**
  - ◆ **On-boarding the new NP to a rural site**
  - ◆ **Approaches to communication**
  - ◆ **Continuing Education needs for new grads**
  - ◆ **Case study “pearls” from our rural family practice**

# Introductions

- ◆ **BA, Psychology, Naropa University**
- ◆ **BS, Nursing, Virginia Commonwealth University**
- ◆ **MSN, Family Nurse Practitioner, Sonoma State University**
- ◆ **Grew up in rural New Mexico and never stayed indoors for too long**
- ◆ **Got my dream job in Point Reyes Station, CA, doing rural family medicine and urgent care**



William K. Woodard, II, MD,  
c. 1960s, image courtesy of Author

# Disclosures

💧 I have no disclosures

# What is Rural?



- ◆ **The state of California defines a rural area as any county wherein 80% of the landmass is rural (farmland) or frontier**
- ◆ **Medical Service Study Areas (MSSA) are 30 minutes travel time to “largest population center.”**
- ◆ **California has 44 rural counties, and 14 urban counties (mostly in Bay area and LA area)**
- ◆ **For our purposes this means: 30 minutes to definitive care (Basic Hospital services: ED with beds for admission)**

(CA State Office of Rural Health, 2012)

# Why is Rural Primary Care Different?

- ◆ Fewer resources
- ◆ Higher acuity = Higher stakes
- ◆ More autonomy
- ◆ Longer travel time to and from care...



**...Gulp!**



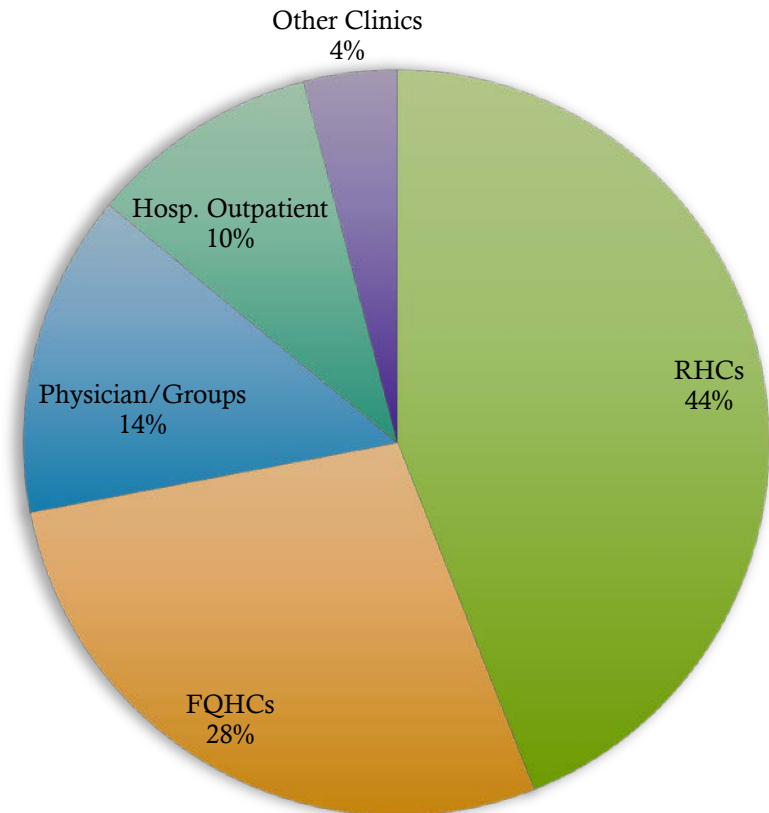
# Rural Health In California: A Snapshot

- Only about 10% of physicians practice in “rural” America despite the fact that nearly 25% of the population lives in these areas.

- Rural residents tend to be lower-income, with higher risk for poor health outcomes, especially chronic disease

(Gamm, Hutchinson, Dabney, Dorsey, 2010)

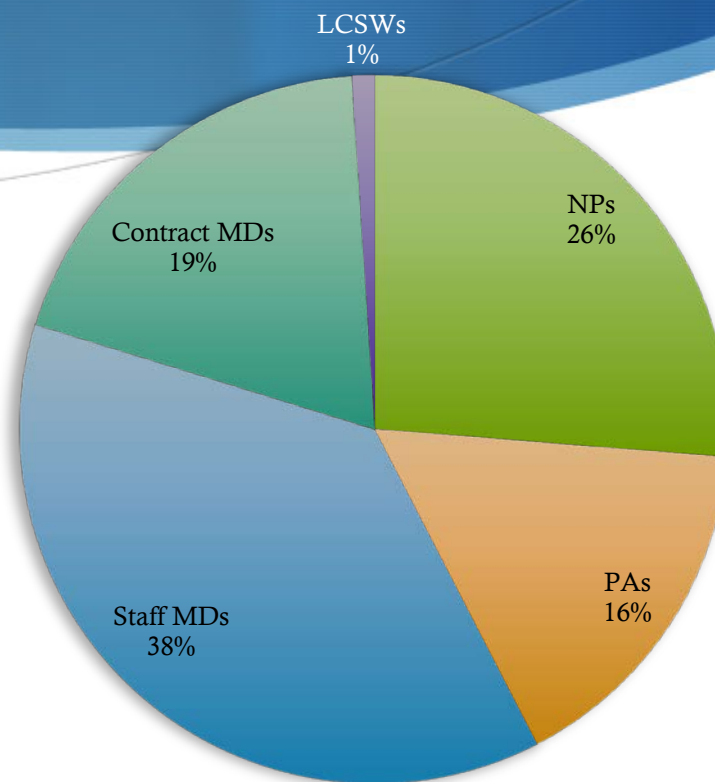
## Rural Medical Primary Care Visits, By Provider



(California Health Foundation, 2012)

# Rural Health Snapshot

## RHC Visit , by Provider Type, 2011



- ◆ In 2011 NPs were doing 26% or more of this care. This number is expected to grow.

### Student Completions by Program Track (Nurse Practitioner), Master Degree Programs by Academic Year

2006-2007	2007-2008	2008-09	2009-2010	2010-11	2011-12	2012-13
597	567	622	624	713	845	994

(Waneka & Spetz, 2013)



# So Why Would a New Grad Go Rural?!

- ◆ **“Different kind of medicine/nursing”**
- ◆ **Close relationship with patients**
- ◆ **Integral role in community**
- ◆ **Personalized care**
- ◆ **Unique challenges**
- ◆ **“Slow medicine”**



Image Courtesy of Coastal Health Alliance, 2014

# Why NPs for rural practice?

- ◆ **Our profession started by serving the rural sector** (Silver & Ford, 1967)
- ◆ **We specialize in school in PRIMARY CARE! (87.2%!)** (AANP, 2014)
- ◆ **Patients report excellent satisfaction when treated by rural NPs** (Knudtson, 2001)
- ◆ **But if the first job is all about learning, do we want them learning...way out there?**
- ◆ **YES!...If they're well-supported**



Loretta Ford, Jan Towers, courtesy of author

# What does a New Grad NP Bring to the job?

## PROS

- ◆ **An average of 6 years of academic training!**
- ◆ **500-1000 hours of precepted time in their specialty, +/- specialty rotations!**
- ◆ **National Board Certification in their Primary Care specialty!**
- ◆ **Their experience as RNs! (Cardiac, OB, ER, etc.) This is HUGE!**
- ◆ **A framework for continuing to learn!**
- ◆ **Enthusiasm**

## CONS

- ◆ **Inexperience (especially for Direct-entry NPs with no RN exp.)**
- ◆ **Higher needs for consultation and reassurance**
- ◆ **Tend to issue more referrals and order more studies (Hemani, Rastegar, Hill, Al-Ibrahim, 1999)**
- ◆ **May under-prescribe**

# What training is there for new NPs in rural health?

- ◆ 7 family practice residency programs nationally
- ◆ Several emergency medicine residency/fellowship programs...
- ◆ Many family nurse practitioner programs designed to reach rural areas (e.g. CSU)
- ◆ No formal rural health training programs...hmmm...



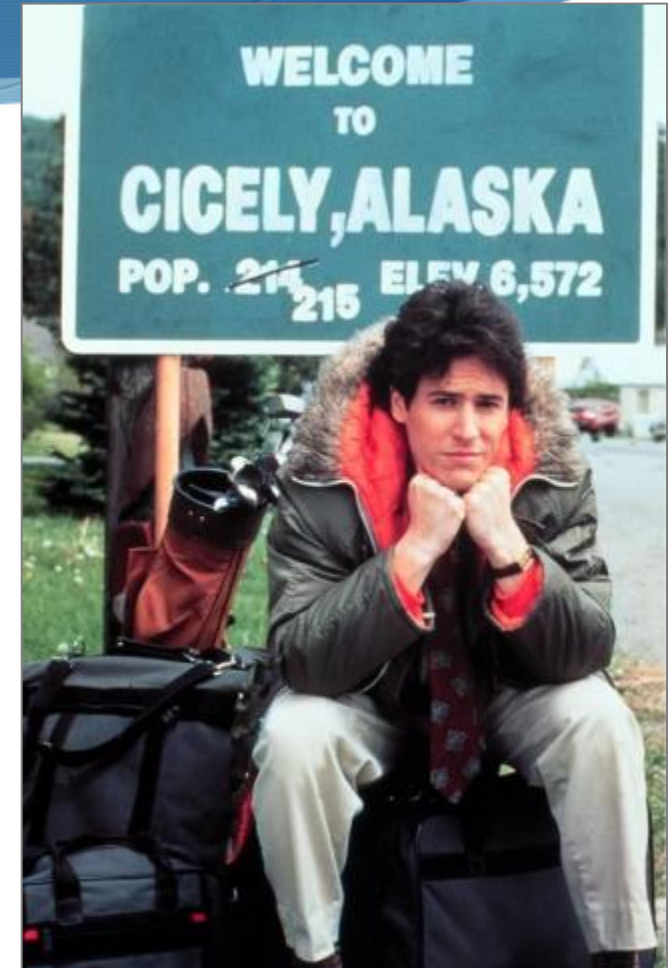
**“Flying the plane while we’re building it...”**

Image courtesy of Wikimedia Commons



# “Filling the Gap” and the problem with gap mentality

- ◆ “The Primary Care Gap,” “The Gray Wave,” etc.
- ◆ Implies that NPs take sub-par jobs that MDs don’t want or shouldn’t be doing, for less pay
- ◆ Implies that primary care is not a desirable profession!
- ◆ Doesn’t build in for sustainability: Retention is challenging
- ◆ High turnover rates at:
  - ◆ FQHC, IHS, Rural Health Centers



Cine-Nevada Productions, Universal Television, Felahey-Austin Street Productions

# Our practice...



- ◆ Offices in 3 different coastal sites on the Point Reyes Peninsula, serving all comers.
- ◆ Full scope family medicine, prenatal, pediatrics, urgent care, mental health, psychiatry, podiatry and limited cardiology.







# About CHA

**27%**

un-insured

**22%**

Medi-Cal

**19%**

Medicare

**32%**

Commercial  
Insurance



**5,268**

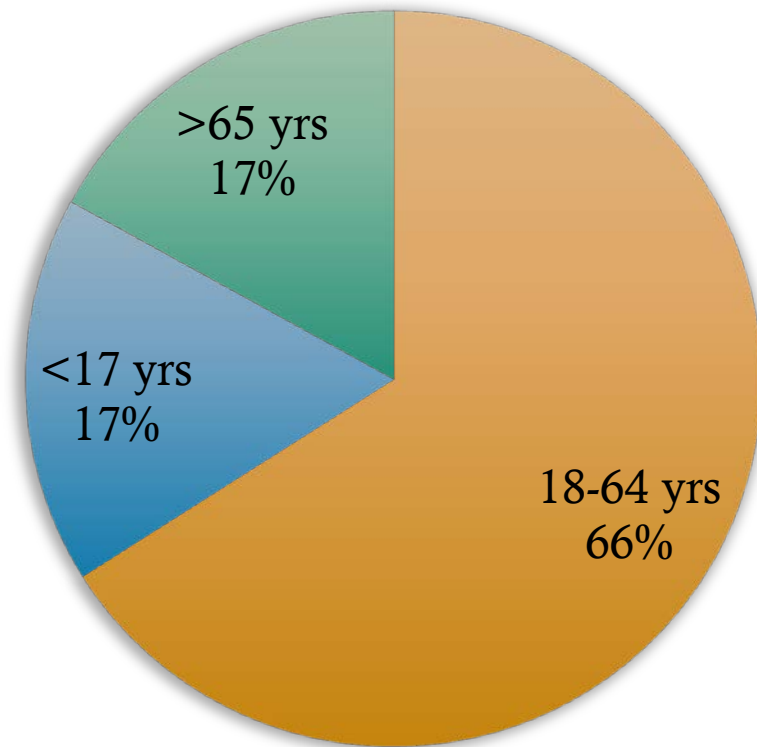
number of patients we served in 2013



**15,581**

visits provided to those patients

## Patients by Age



# Point Reyes Station

- ◆ **Unincorporated town that used to be a trade port**
- ◆ **Population of 848 (US Census, 2010)**
- ◆ **1 fire station with EMS and S&R capabilities**
- ◆ **1 pharmacy**
- ◆ **1 grocery store**
- ◆ **2 clinics!**
- ◆ **Dentist 2 days a week**
- ◆ **Several psychologists, 1 cardiologist, 1 podiatrist, 2 chiropractors, 1 PT, MANY massage therapists**

# Lay of the land...

- ◆ **Patients that come from as far away as Sacramento!**
- ◆ **35 minute drive to nearest ER**
- ◆ **60 minute drive to nearest Level II Trauma Center**
- ◆ **80 minute drive to nearest Level I Trauma Center**
- ◆ **15 minutes airtime to SF area hospitals by Med-Evac**
- ◆ **Most specialists are >35 minutes away**
- ◆ **Local EMS is county-based...so it can be a while if they're out on a call** (Data estimates per Google Maps and clinical experience)

# Onboarding the New Rural Clinician

Successes and...  
opportunities for  
improvement!





# Onboarding the Newbie...

- ◆ **6 month introductory / orientation period**
- ◆ **One-on-one clinical mentor**
- ◆ **Clinical feedback**
- ◆ **Administrative feedback**
- ◆ **Team-building**
- ◆ **Contribution to clinical practice**



# 6 month orientation

- ◆ **Clinical competencies**

- ◆ **Chart audits: Submitted by NP to mentor for both chronic and acute visits**
- ◆ **Procedure sign-off for observed interventions**
- ◆ **No call for 3 months!**
- ◆ **24/7 availability of mentor for consultation**

# 6 month Orientation

## Orientation to local resources:

### Meet and Greet:

- 🟡 EMS / Fire: Consider ride-along
- 🟡 Public Health Office: Orient to services
- 🟡 Pharmacists
- 🟡 Mental health resources:  
Chronic and acute
- 🟡 Local emergency rooms- Box of donuts...
- 🟡 Dentists



Local Search & Rescue Vehicle, Author

# One-on-One Clinical Mentor



**This was crucial...and difficult!**


- 🟢 **Weekly meeting for in-person case review**
- 🟢 **Internal EMR consults for non-urgent**
- 🟢 **24/7 availability by phone for “golf ball” moments**



# Clinical feedback & Administrative feedback

- ◆ **Clinical Feedback on decision making and management-**
  - ◆ Chart audits via EMR
  - ◆ Internal consult notes in EMR
  - ◆ 3 and 6 month reviews
- ◆ **Administrative Feedback-**
  - ◆ Quarterly peer review on MU and UDS measures per random chart review
  - ◆ Productivity and Clinical measure tracking (A1c, CRC screening, etc.)

# Contribution to Clinical Practice

- ◆ **Share clinical pearls at all-staff meetings** 
- ◆ **Help develop new policies based on best practices**
- ◆ **Leadership in training Nurses and Medical Assistants**
- ◆ **Encourage to Publish and Present**

# Training needs for the new NP

Beyond grad school...

- ◆ **Clinical assessment**
- ◆ **Age-span experience**
- ◆ **Procedures**
- ◆ **Observational treatment**
- ◆ **Creative use of labs**
- ◆ **In-house medications**
- ◆ **Courage to consult**
- ◆ **Consult-guided specialty treatment**
- ◆ **Collaboration with EMS**



# Clinical Assessment

- ◆ **Mastery of the physical exam**
  - ◆ **Leads to better health resource utilization, and better rapport with patients!**
- ◆ **Anatomy**
  - ◆ **Not every Nurse Practitioner's strength!**
- ◆ **Bearing in mind...**
  - ◆ **The best clinical data is the data you gather before you touch the patient**

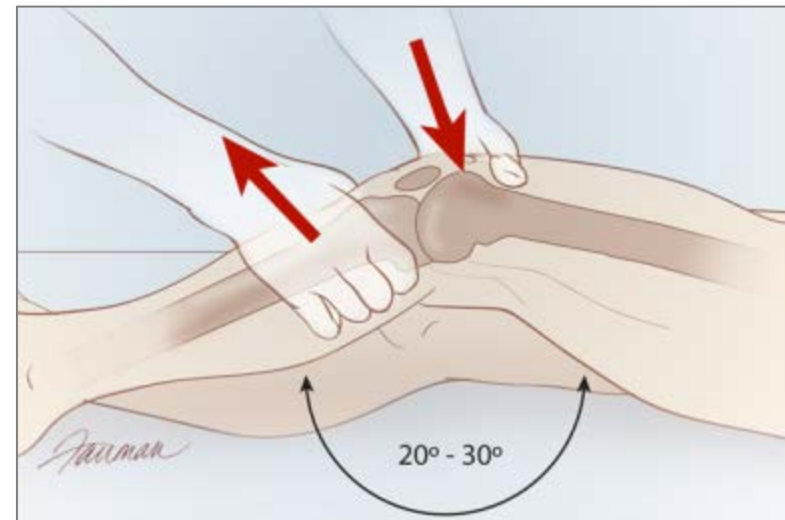
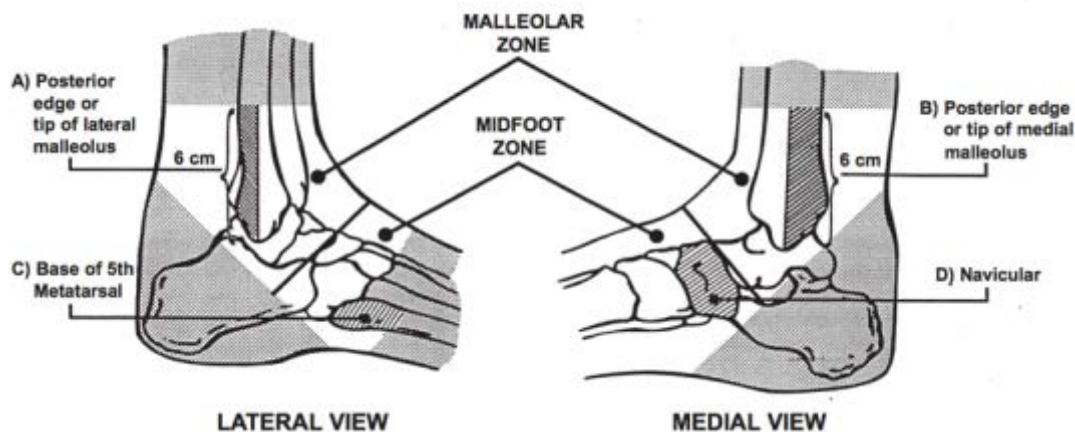
# Physical Assessment: Tissue anatomy



*“Well, yes, it’s a routine procedure—if you routinely have someone slice open your body with sharp instruments and then fiddle with your insides.”*

# Physical assessment: Orthopedics

- 🟢 Knee- Thessaly, McMurray's sx, Patellar Grind, Lachman's and/or ant/post drawer test.
- 🟢 Ankle- Tallar tilt, Ottawa Ankle rules for imaging

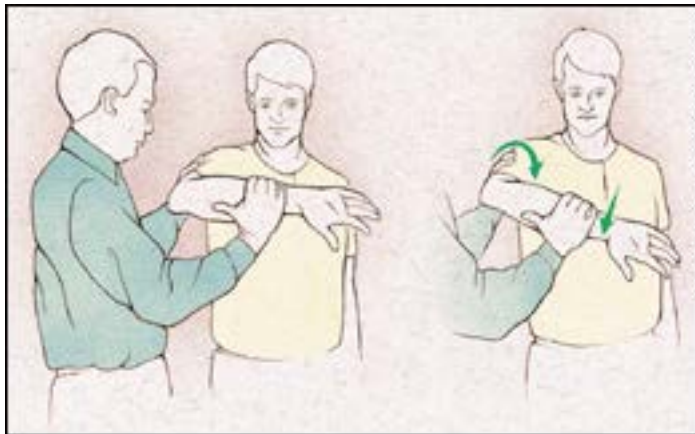


(Image reproduced from Stiell et al, 1994)

(Image reproduced from Clinical Advisor, 2015)

# Physical Assessment: Orthopedics

- Hand- Grip, ROM and strength with tendon isolation for flexion/extension. Critical with hand injuries! r/o navicular issues...



(Image reproduced from McKinnon et al, 2010)


- Shoulder- Neer, Hawkins, Empty-Can, Apprehension Tests, drop test.

(Image reproduced from Woodward & Best, 2000)



# Physical Assessment: Abdominal Exam

- ◆ **Wide Differential- acute vs. chronic, focal vs. diffuse**
- ◆ **Thorough and *slow* examinations**
- ◆ **Serial examinations- Is this changing**
- ◆ **Anatomic variance- not every gut is the same...**
- ◆ **Age-Appropriate tests- e.g. Jump test instead of rebound TTP for pediatric patients**



DDx IBINLT: Gastritis, peptic or duodenal ulcer, cholecystitis/lithiasis, pancreatitis, common bile duct obstruction, hepatic pain, constipation, obstruction/ileus, volvulus, intussusception, hernia, IBS, IBD, SMA occlusion, necrotic bowel, appendicitis, diverticulitis, peritonitis, pyelonephritis, cystitis, nephrolithiasis, somatic pain, neuropathic pain, splenomegaly, splenic rupture, gastroenteritis....oy!

# Physical Assessment: Ophthalmologic

- 💧 **Very common injuries! Foreign bodies, conjunctivitis, abrasions, ulcers, uveitis**
- 💧 **Focused Ddx: e.g. conjunctivitis vs. uveitis**
- 💧 **Woods lamp exam- Easy and high yield- better diagnosis of abrasions, ulcers, pingueculae**
- 💧 **Fundoscopic exam- Use a PANOPTIC! Can help determine necessity of HTN tx, DM and r/o retinal detachment**



Acute anterior uveitis/iritis is associated with IBD (Lyons & Rosenbaum, 1997)



# Physical assessment: Neurological

- ◆ Neurological- Yes...know your cranial nerves.

- ◆ Wide differential

- ◆ Serial exams

- ◆ Cerebellar sx- Romberg is *not* a cerebellar sx: gait, dysmetria, heel-toe walking, heel-shin slide



# Physical Assessment: Cardiac

- ◆ **High cost decision! Ambulance, troponins, cath labs...oh my.**
- ◆ ***Thorough Hx & Physical BEFORE EKG - Great specificity and moderate sensitivity*** (Martina et al, 1997)
- ◆ **Low to high acuity triage**
- ◆ **Learn how to read axis deviations**



An ECG can rule in ischemia/infarct, but it cannot rule it out (Kabacki et al, 2001)



Pain over the left chest without other ACS sx has *very* low likelihood of cardiac pathology (Martina et al, 1997)

# Physical Assessment: Clearing C-spine

- ◆ **This is a valuable and sensitive assessment for ruling out injuries and considering need for C-spine precautions** (Domeier et al, )(Ahn, et al, 2011):
  - ◆ Is Pt Fully alert and oriented?
  - ◆ Was there any head injury?
  - ◆ Any drugs or ETOH on board?
  - ◆ Any neck pain
  - ◆ Any neurological abnormalities? (insensate, etc.)
  - ◆ Are there any other distracting injuries? (Brohi, 2001)
- ◆ **Yes to any? Keep in collar and backboard until imaging is done.**



James Heilman, MD



SAM splints work VERY well to immobilize the cervical spine, and cost about \$15 at REI

# Age-Span Experience

Gaining experience assessing all ages

Continuum of acuity changes with age

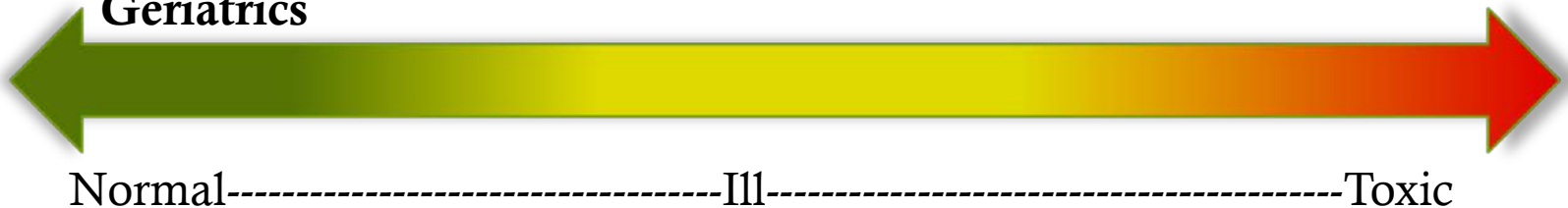
## Pediatric: 0-10



## Adolescent-Adult



## Geriatrics



# Age-Span Experience:

## Pediatrics

- Shadow!
- Spend time in an ED with pediatric specialists
- Consult your pediatricians often
- When there's a sick kid, ask to assess them!

For kids under 5, start the exam at the feet, take off the socks and wear them on your ears. The rest of the exam will be a game!



Fildes, Luke. (1891)



# Age-Span Experience:

## Geriatrics

- ◆ **These folks often give the best (and most complex) histories!**
- ◆ **...or the worst and most confusing**
- ◆ **Shadow a skilled internist and hospitalist**
- ◆ **Consult seasoned clinicians**
- ◆ **Consider doing SNF rounds**
- ◆ **When there's a unique finding (Hepatomegaly, cataracts, aortic regurg), go assess it!**
- ◆ **Be wary of incidentalomas...**



Woodcut by Gunning King, 1906



# Interventions/Procedures



Image courtesy of author

# Interventions/Procedures

- ◆ **Minor Surgery: Get better with sharp things than your patients...**
  - ◆ **Laceration Repair, simple to moderately complex**
  - ◆ **Abscess I&D**
  - ◆ **Cyst Excision or I&D**
  - ◆ **Lipoma Removal**
  - ◆ **Toenail Removal**
  - ◆ **Foreign Body Removal: Eye, cavity, etc.**



Cat bite injuries, author



Lipoma excision, author (surgical f/u...I did NOT perform this procedure!



# Interventions/Procedures: Laceration repair



Images courtesy of author



Learn more than 1 way to suture:  
Mattress sutures, subcuticular

# Interventions/Procedures

- ◆ **Orthopedic procedures:**
  - ◆ **Arthrocentesis & joint injections-** Amazing stop-gap to ortho, excellent for reducing opiate need
  - ◆ **Digital blocks great and long-lasting relief for complex injuries prior to sending to ED**
  - ◆ **Trigger point injections-** therapeutic *AND* diagnostic
  - ◆ **Splinting-** Most common upper and lower extremity splints: Ulnar gutter, thumb spica, posterior short and long leg, etc.

# Observational Treatment

- ◆ **Value in observing for improvement**
- ◆ **Ability to treat supportively: IV fluids, medications**
- ◆ **Serial Examinations: More clout with ED providers if referred**
- ◆ **Must take care not to delay treatment, consider doing with consultation**



# Case Study 1: “Horse kicked gut”

- ◆ 13 year old boy, arrived 2 weeks ago from El Salvador.
- ◆ Kicked 1 hour ago by horse to flank and right knee as they both went down. Sustained 2 minor lacerations (to the knee and right flank) and is complaining of local abdominal pain.
- ◆ Did not hit his head, takes no medications, and does not know his allergy status. His parents are available by phone, but he is here with his brother. They all live 45 minutes from ER
- ◆ Ticklish
- ◆ Scared of hospital d/t fear of deportation



# “Horse kicked gut”

## What we did...

- ◆ **Consult!**
- ◆ **2 hours of observational treatment**
- ◆ **Serial abdominal examinations**
- ◆ ***Thorough* knee examination**
- ◆ **Laceration repair: 30 minutes**
- ◆ **Abdominal U/S order**
- ◆ **Knee x-ray**
- ◆ **Serial UAs to r/o hematuria**
- ◆ **Strict ED visit precautions:  
Provided with note for ED prn**
- ◆ **CONSIDER: F.A.S.T. US examination**
- ◆ **F/U appointment the next day**

# Case Study 2: “Vomiting for 3 days”

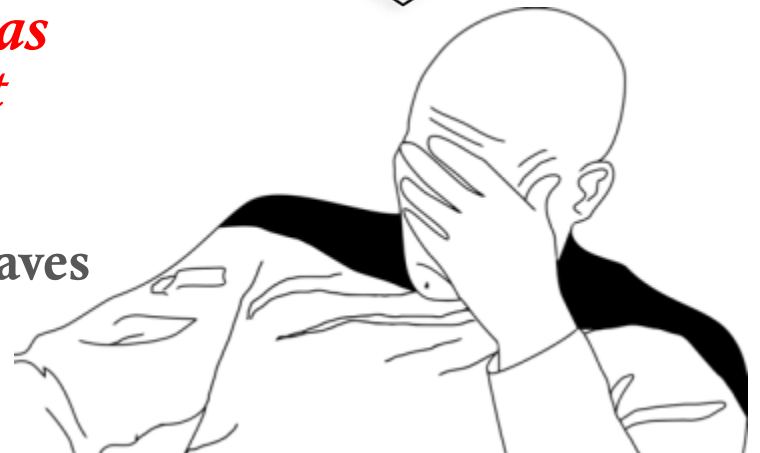
- ◆ 62 year old man with CC of vomiting, dizziness, and profound fatigue for the last 3 days.
- ◆ Former smoker, no personal or family history of heart disease, no other sick contacts or questionable food.
- ◆ On exam, he has poor turgor, a non-acute abdomen, normal cardiopulmonary exam. No diarrhea or fever.
- ◆ Soft BP, slow to normal HR

# “Vomiting for 3 days”

## What we did...

- ◆ Started IV, Bolus of 1500 ml of NS
- ◆ 2 doses of ondansetron 4 mg IV over 2 hours with mild improvement
- ◆ Serial vitals
- ◆ Patient casually mentions that *all this has been accompanied by intermittent left arm pain and numbness...*
- ◆ ECG shows left-axis deviation with q-waves in aVF, II, III and V1.

Oy. you mention this now?



# “Vomiting for 3 days” What we did...

- 💧 **Call the cardiologist!**
- 💧 **325 of ASA, no nitro d/t hypotension and dehydration. O<sub>2</sub> at 2 LPM by NC**
- 💧 **Expeditious EMS transfer**
- 💧 **ECG and note sent to ED**
- 💧 **Report given directly to ED MD**



Bye bye... (Image courtesy of  
Wikimedia)


# Labs

- ◆ Quest Diagnostics- Once a day pick-up
- ◆ Potassium levels might be off...
- ◆ Phenytoin, digoxin, and lithium levels must be very *well* timed.
- ◆ PT/INR, D-dimer, troponins, all of little utility
- ◆ Lots of phone follow up as opposed to lab f/u appts



# Medications

- ◆ **In house parenteral opiates-**
  - ◆ **Morphine- For *severe* acute pain in hemodynamically stable patient**
  - ◆ **Hydromorphone- Per policy/procedure for use *in acute trauma, acute abdominal pathology, etc.***
  - ◆ **Yes...we do have naloxone**
  - ◆ **Should not be d/c'd home after administration of these meds...should be on their way to ED**



Always assess what meds they took in the 24 hour period before, esp. long-acting opiates, and never give if impaired. Remember to communicate dose and time of med to EMS. Have saline lock in an narcan ready prn

# Medications

- ◆ **In house antibiotics**
  - ◆ **Ceftriaxone-** High utility broad-spectrum 3<sup>rd</sup> generation, best with gram negatives, some gram-positives, *Strep. A,B,C,G*. Not good for *MRSA*, *P. aeruginosa*, *ESBL*. Often used to initiate CAP PNA treatment, though ID doesn't like this.
  - ◆ **Ampicillin-** can be used IM for endocarditis prophylaxis in high risk patients, prior to emergency dental problems

# Medications

- ◆ **In house anti-emetics and anxiolytics-**
  - ◆ **Ondansetron-** Best IV, but can be used IM. Can repeat IV dose of 4 mg again if needed. Caution with QT prolongation. Can drive afterwards...
  - ◆ **Promethazine-** Works great. Don't drive after admin.
  - ◆ **Prochlorperazine-** Do not bolus, push slowly, best to put in IV solution (no more than 5 mg/min). Don't drive after
  - ◆ **Diazepam IM-** works well

# Medications

- ◆ **In House Emergency Medications**
  - ◆ **Sub-Cutaneous Epinephrine (1:1000)**
  - ◆ **IV Epinephrine**
  - ◆ **Atropine**
  - ◆ **IV solutions: NS and LR**
  - ◆ **Naloxone**
  - ◆ **Diphenhydramine IM/IV**
  - ◆ **Dexamethazone**
  - ◆ **Methylprednisolone**

# Consultation: The courage to consult...anyone!

- ◆ Practice with preceptors you know
- ◆ Use a standard format: SBAR still works well!
- ◆ The Top 4- Four different preceptors you *know* you can wake up if you need to
- ◆ Look for previous specialists your patient has seen and tap their knowledge. You're their PCP, not their floor RN anymore! Don't be scared!



Nurse practitioner Nimaljeet Tarango (right) consults with attending physician Katy Lease Lonergan at the UCSF Cardiovascular Care and Prevention Center (photo by Elisabeth Fall).

(Image reproduced from UCSF, 2015)



# Consultation: Get creative!

- ◆ **What do I do when I can't get a hold of my collaborating MD?**
  - ◆ **Insurance specialist hotlines**
  - ◆ **Previous specialists**
  - ◆ **Pharmacists**
  - ◆ **Poison control**
  - ◆ **Public health officers**
  - ◆ **Call the local ED and ask the MD's opinion**
  - ◆ **Follow up with Thank-you notes...and donuts.**

# Consultation: Consult-guided specialty Tx

- ◆ Because you are “it”, and your patient not might not see that nephrologist for 4 weeks...gulp.
- ◆ New meds- can be Rx'd with specialist recommendation
- ◆ Helps decrease delay in treatment
- ◆ Very helpful with ophthalmology, dermatology, nephrology, cardiology, neurology, infectious disease and pediatrics
- ◆ Try to page them after hours...

# Case Study 3: “Swelling Everywhere”

- ◆ **Uninsured, monolingual Spanish-speaking 36 year old woman**
- ◆ **Presents for care with CC of profound edema to LEs and UEs and abdominal swelling, x several days, without SOB/DOE, chest pain, N/V/D, allergies.**
- ◆ **Hx- Asymptomatic SLE without renal involvement diagnosed 1 year prior.**
- ◆ **Has been to ER twice, diuresed moderately with Furosemide without relief**

# “Swelling Everywhere”

- ◆ **Exam: 3+ pitting edema to legs and 2+ to hands, palpable ascites, shinners beneath eyes, normal cardiopulmonary and abd exam otherwise.**
- ◆ **Labs:**
  - ◆ **Normal LFTs and Alk Phos**
  - ◆ **Albumin of <1.5, low globulin**
  - ◆ **Creatinine of 1.96 with eGFR of 32 (previously 0.8 and eGFR >80).**
  - ◆ **Anemia of chronic disease with H&H of 9.1/28.5.**
  - ◆ **Rheum factor negative, ANA Anti-DS DNA- 867 (H!)**
- ◆ **Dx- Acute renal failure with nephrotic syndrome s/t lupus nephritis**

# “Swelling Everywhere”

## What we did

- ◆ I consulted with my colleague!
- ◆ Tx-
  - ◆ Started on Prednisone 60 mg 9 taper to 20 mg maintenance dose
  - ◆ Started on hydroxychloroquine 200 mg QD
  - ◆ Furosemide 40 mg BID
  - ◆ High Protein Diet
  - ◆ f/u CMP, CBC, Ferritin, and ANA titer in 1 week, f/u appt in 4-5 dyas
- ◆ Consulted- Rheumatologist who had never seen pt, agreed with plan and advised continuing pt on mycophenolate.
- ◆ She couldn't get into see nephro or rheum for 4 weeks!



# Collaboration with EMS

- ◆ **Have note ready!**
- ◆ **Give SBAR, Vitals, and meds given**
- ◆ **Speak their language, just the facts...**
- ◆ **Have lines established if possible**
- ◆ **They'll love you**



# Case Study 4:

## “Fever and vomiting”

- ◆ **Otherwise healthy 6 year old boy**
- ◆ **Fever of 101 to 104.5, with cyclic vomiting worsening over the last 24 h, with new onset severe headache. Unable to keep fluids down for 8 hours**
- ◆ **Exam:**
  - ◆ **Abd is non-acute**
  - ◆ **Neuro exam reveals PERRLA, EOMI, unable to tolerate fundoscopic exam**
  - ◆ **Light worsens nausea**
  - ◆ **Tachycardic, diaphoretic, speaking in short, short sentences, febrile at 103.1, unreduced by tylenol dose 1 hr ago**
- ◆ **Scared of hospital as mom died 3 months ago of breast CA**

# “Fever and vomiting”

## What we did

**Consulted by phone with our pediatrician: r/o meningitis**

- ◆ **Swift EMS transfer to hospital with pediatric hospitalist by ambulance**
- ◆ **EMS is met at door and briefed on the need for a cool, calm, friendly, and collected transfer, with dad riding along**
- ◆ **Briefed on past trauma**
- ◆ **EMLA placed to both arms for future IV sticks**

# Case Study 5:

## “Bad radiology...?!”

- ◆ **Uninsured 38 year old woman being worked up over 2 months for diffuse, vague abdominal pain. Multiple ER visits for this pain.**
- ◆ **Hx of GERD and H. pylori (Tx'd), depression, anxiety and extreme home-stress**
- ◆ **Exam- 1<sup>st</sup> appt- Obese, non-acute abdomen, normal exam, negative Murphy's sx.**
- ◆ **Plan- Abd US ordered, started on H2 Blockers, CBC, CMP, H. pylori stool antigen**

# “Bad radiology...?!”

- ◆ She comes back for another appt, same complaints, hasn't had U/S.
- ◆ Exam is still normal, vitals stable, has not done labs.
- ◆ Was not taking Ranitidine regularly for 1 week
- ◆ She goes to the ER 2 weeks later for same complaint of diffuse abd pain... and she is here today to f/u with you...



# “Bad radiology...?!”

- ◆ Her records reveal the same complaint, exam, and normal labs. PRE-READ of abd CT is read as normal.
- ◆ Final page of ED records: “Over-read by radiology attending: **“A type II Debakey dissection is seen in the ascending aorta. Pt contacted immediately and advised to go to her doctor’s office.”**”
- ◆ Exam- Pale, diaphoretic, dizzy, woman, clutching her chest and complaining of pain radiating to the back. ECG is abnormal with left bundle branch block. BP is soft.



# “Bad radiology...?!”

## What we did

- ◆ 911. EMS en route
- ◆ Called nearest hospital ED with vascular surgery service, gave report
- ◆ EMS briefed, advised NO Nitro, morphine, fluids, and a SMOOTH ride
- ◆ F/U- Chest CT dissection series revealed...

# “Bad radiology...?!”

- ◆ **A NORMAL ASCENDING AORTA! ARRRRG!**
- ◆ **“I feel so sorry for you! This is every family practitioner’s nightmare!” ED MD on f/u.**
- ◆ **She was very nice.**
  
- ◆ **Dx: Cholelithiasis. I knew it!**

Resources:  
Where the  
heck can one  
can get this  
extra  
training?!

Beyond grad school...

- ◆ **Resources for training during school and after graduation in extended competencies for rural practice**

# Resources

- ◆ **Procedures- (Do it when you're a student!)**
  - ◆ **AANP & CANP conferences! These are great!**
  - ◆ **Tons of these at derm, ortho, & family medicine conferences**
  - ◆ **CME through larger medical schools**
  - ◆ **Have a pig-part suturing gathering with other friends who want to practice**
  - ◆ **Get familiar with anatomy and have visual aids/apps readily available**



# Resources

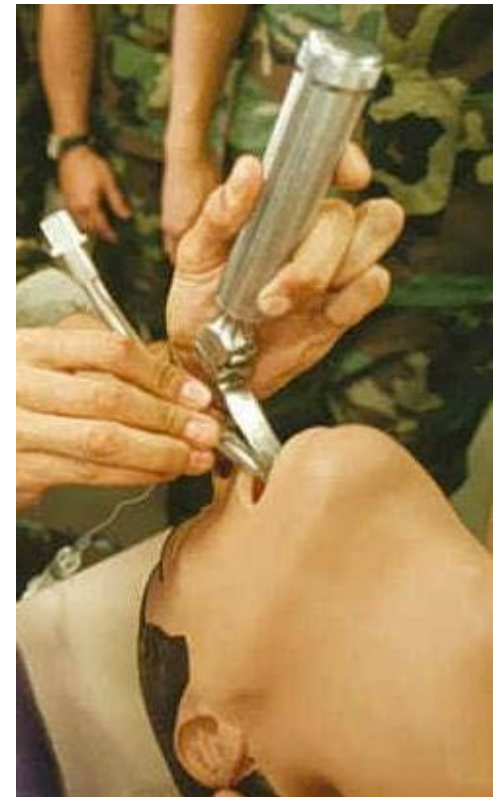
- ◆ **Imaging- Look at a lot**
  - ◆ **Again...conferences and CME**
  - ◆ **Tons of online case-studies in radiology**
  - ◆ **Radiology boot-camps online**
  - ◆ **STONGLY consider a bedside U/S course. It's the future of imaging**
  - ◆ **App- Night in the ED- Mostly CTs**
  - ◆ **App- NEJM Image Challenge**



Author. Literally

# Resources

- ◆ **Pre-hospital management of acute issues**
  - ◆ **Again...conferences and CME**
  - ◆ **AANP**
  - ◆ **Trauma Nursing Core Curriculum**
  - ◆ **ACLS/PALS**
  - ◆ **Advanced Wilderness Life Support**



# Resources: Apps!

- ◆ **Sometimes, your preceptor is your iPhone**
- ◆ **Medscape- Excellent Rx, basics of conditions, and procedures. Love the Drug Interaction Check**
- ◆ **Sanford Guide- Antimicrobial therapy**
- ◆ **ECG Guide- Great for reviewing common normal and abnormal**
- ◆ **Murmur Pro- Geek out with headphones!**
- ◆ **Muscles- Great reminder for ortho and sports med injuries**
- ◆ **TriggerPoints- Excellent visual cues for pain distribution**

# Resources: Apps!

- ◆ **DxSaurus- WIDE differentials. Jogs memory**
- ◆ **L'Allegro- Antidepressant selector for PCPs! Excellent App!**
- ◆ **AHRQ ePSS- USPSTF recs per age**
- ◆ **Opiate Dose Calculator – Great for calculating M.E.D.**
- ◆ **Pill Identifier- Cuz we never know what they look like!**
- ◆ **PodCasts- Listen on your way to work: NEJM updates, Skeptics Guide to Emergency Medicine, Medscape.**

# Summarizing

- ◆ **Evidence supports NPs role in rural settings**
- ◆ **The rural setting can be a rich learning environment with ample variety**
- ◆ **New NPs need robust personal, clinical and administrative support, but can thrive!**
- ◆ **A structured, precepted training period is critical**
- ◆ **Future residencies in Rural Primary Care could better meet these needs, increase retention, and competency**





**Bella, my tiniest patient at 3 lbs.**

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