

#### Hot Topic Pearls in Primary Care



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## Clinical Presentations of Perinatal Mood & Anxiety Disorders in Breastfeeding Patients

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## Objectives

- Recognize signs & symptoms of Perinatal Mood and Anxiety Disorders (PMADs) in Breastfeeding mothers.
- Appreciate the interrelation between PMAD management and successful breastfeeding

### Perinatal Mood and Anxiety Disorders



## **Risk Factors**

#### Social Factors

- social isolation
- teen pregnancy
- traumatic birth
- history of abuse or domestic violence
- institutional racism
- military deployment

#### Genetics

- Family history of mental health conditions
- Medical conditions (ie diabetes, thyroid dysregulation)

Biologic Sensitivity to Hormone Changes

- History of PMS/PMDD
- Mood changes with contraception or fertility treatments

#### Psychologic Traits

- adjusting to new role
- perfectionism
- difficulty with adversity
- lack of confidence
- ability to cope

#### **NICU Admission**



- Baby's cry activates a neural network associated with OCD and anxiety
- A healthy maternal brain experiences "transient OCD" to help protect and care for infant

#### **Breastfeeding is Protective Against PMADs**

- Reduces cortisol response
- Higher prolactin levels support deeper restorative sleep
- Reclaiming breasts as a nourishing organ rather than sexual

- Healing effect after traumatic pregnancy/birth
- Eye synchronicity can rewire trauma connections in the brain

#### Untreated PMADs = Threat to Breastfeeding



 Mothers with depression who were treated with medication breastfed for longer durations than mothers with untreated depression

### Symptoms of Anxiety in Breastfeeding Patient

Intolerance of	Inaccurate Beliefs	Lack confidence in Problem	
oncertainty	Feels that hyper alert will prevent	Johning	
Must know the answer	problem	extensive internet research Reassurance Seeking	
Building a freezer stash	Actions to prevent recurrence		
Panic	Excessive focus on Technique	Repeated calls, texts, EMR	
symptoms overlap with	repeatedly latching & unlatching to get	messages	
mastitis	"perfect latch"	Repeated Self Diagnosis mastitis vs lymphedema	
	Avoidance		
	Exclusively pumping to avoid fears/sexuality	Checking	
		tracking apps 10	

## Symptoms of OCD in Breastfeeding Patient

Obsession	Compulsion
"Baby is not gaining enough weight"	Home scale with repeated weight checks
	Timing feedings
	Tracking apps
"Baby is not eating enough"	Extra milk expression
	Track pump & bottle amounts
	Supplementation

### Symptoms of **Depression** in Breastfeeding Patient

#### Pathologizing Baby

Perceive baby as "fussy"

Perceive baby's behavior as more disruptive or harder to tolerate

"Baby sounds like he's choking"

Baby has tongue tie

#### Negative Language

"He destroyed me"

"He's sucking the life out of me"

"She does open her mouth"

"Why can't she figure this out?"

"It's just so hard"

"I'm so exhausted"

"I just can't take this another day" "When will this be better?"

#### Unrealistic Expectations

Overfeeding baby to attempt to induce longer sleep patterns

Monitoring infant feeding in extreme detail

#### Somatic Complaints

Perception of breast fullness or "too empty"

"I just can't letdown"

Perception of low milk supply

Here for your family. The big ones. And the little ones.

### Resources

- 1. "Lactation and Perinatal Mood and Anxiety Disorders" IABLE 2022 Conference
- 2. Kendall-Tacket, K., "A new paradigm for depression in new mothers: the central role of inflammation and how breastfeeding and anti-inflammatory treatments protect maternal mental health". *International Breastfeeding Journal.* March 2007
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- 5. Ystrom, E., "Breastfeeding cessation and symptoms of anxiety and depression: a longitudinal cohort study". *BMC Pregnancy and Childbirth*. May 2012
- 6. Wouk et al., "Postpartum Mental Health and Breastfeeding Practices: An Analysis Using the 2010-2011 Pregnancy Risk Assessment Monitoring System". *Maternal Child Health Journal*. March 2017

#### **Case Presentation**

Adam Jenkins, DO and Kari Ketvertis, MD



- 32 year old male, recently moved from Michigan to Ohio and presents to establish care with a PCP.
- He noticed an enlarging lump on the right side of the neck with an oral tonsillar lesion. Onset 10 days. Increasing oral and neck pain, 3/10 in severity, made worse with neck stretching and swallowing. No fevers, sweats or chills. No prior illness. No exudate noticed from lesion. No URI symptoms or rashes noted. 15 days prior participated in unprotected sex with a new male partner, both oral and anal. He hasn't been in contact with the partner since. Patient had negative HIV screening 3 years prior.

## History

- Past Medical Hx- none
- Family Hx- unremarkable
- Social Hx-
  - occasional ETOH/tobacco/ and marijuana
  - denies other recreational drugs
  - Sexually active- Male partners only
- Immunization Hx-unknown

## Physical

- Vitals: WNL
- Exam: Pleasant African American male, in no acute distress.
- Oropharynx: moist mucous membranes, poor dentition with three partially missing molars, a right tonsillar ulcer without exudate with mild erythema.
- Neck: mass measuring 3cm x 5cm on the right anterior side, minimally mobile, mildly tender to palpation, trachea midline
- Skin: no rashes
- Otherwise, normal exam



### Assessment

- 32 year old male with right tonsillar lesion and right cervical adenopathy/mass
  - Suspicion for STI
  - Less likely bacterial infection
  - Less likely fungal
  - Malignancy- could not rule out

## Plan

- In office PCR testing via swab for oropharyngeal/STI pathogens.
- Offered other labs but patient declined due to concerns of his current insurance coverage.

B INFECTIOUS DISEASE TEST OR	DERS (Select individual pathogens or syndromic menu for the treatment and/or diagnosis of the				
SAMPLE TYPE:         Nasopharynx Swab         Cough Sputum Swab         Throat Swab           Other:         RESPIRATORY TRACT INFECTION PLUS					
Acinetobacter baumanii Adenovirus HAdV-B Aspergillus flavus, fumigatus, niger, terreus Bordetella pertussis, parapertussis, bronchiseptica Candida albicans, glabrata, parapsilosis, tropicalis Candida auris Candida pneumoniae Chlamydia pneumoniae Chlamydia trachomatis Coronavirus (229E, NL63, OC43, and HKU1) COVID-19 Coronavirus (SARS-CoV-2) Enterobacter aerogenes, cloacae Enterovirus A, B, C Enterovirus D68 Escherichia coli Haemophilus influenzae Human metapneumovirus Influenza virus A, B Klebsiella pneumoniae, oxytoca Legionella pneumophila	<ul> <li>Moraxella catarrhalis</li> <li>Mycobacterium avium-intracellulare, kansasii</li> <li>Mycoplasma pneumoniae</li> <li>Neisseria gonorrhoeae</li> <li>Parainfluenza virus (types 1, 2, 3, 4)</li> <li>Proteus mirabilis, vulgaris</li> <li>Pseudomonas aeruginosa</li> <li>Respiratory syncytial virus</li> <li>Rhinovirus A, C</li> <li>Rhizopus spp., Mucor spp.</li> <li>Serratia marcescens</li> <li>Staphylococcus aureus</li> <li>Staphylococcus agalactiae<sup>3</sup></li> <li>Streptococcus pneumoniae</li> <li>Streptococcus pyogenes<sup>3</sup></li> <li>Varicella zoster virus<sup>4</sup></li> <li>Antibiotic Resistance Genes (listed below)</li> </ul>				

Klebsiella (Calymmatobacterium) granulomatis

#### SAMPLE TYPE: Urine Swab Vaginal Swab Other: GENITO/STI Acinetobacter baumanii Klebsiella pneumoniae, oxytoca Actinomyces israelii Megasphaera (Types 1, 2) Atopobium vaginae Morganella morganii Bacteroides fragilis Mycoplasma genitalium, hominis BVAB 2, 3 (bacterial vaginosis associated bacteria 2, Neisseria gonorrhoeae 3); Mobiluncus spp. Peptostreptococcus anaerobius, asaccharolyticus, Candida albicans, glabrata, parapsilosis, tropicalis magnus, prevotii Candida auris Proteus mirabilis, vulgaris Chlamydia trachomatis Pseudomonas aeruginosa Serratia marcescens Citrobacter freundii Cytomegalovirus (CMV, Human Herpesvirus 5) Staphylococcus aureus Enterobacter aerogenes, cloacae Staphylococcus spp.<sup>1</sup> Enterococcus faecalis, faecium Streptococcus agalactiae<sup>2</sup> Streptococcus pyogenes<sup>3</sup> Escherichia coli Gardnerella vaginalis Treponema pallidum<sup>16</sup> Trichomonas vaginalis Haemophilus ducreyi Ureaplasma urealyticum, parvum Herpes simplex virus 1 & 2<sup>5</sup> High Risk HPV Types 16, 18, 26, 31, 33, 35, 39, 45, Antibiotic Resistance Genes (listed below) 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, 82

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## Efficiencies of PCR vs. Culture

	HealthTrackRx PCR Test	Culture
Turnaround Time	Results within 24 hours*	Results can take an average of 3-14 days
Accuracy	<b>99%<sup>1</sup> accuracy in</b> pathogen identification	Typically only detects the primary pathogen
Detection	Rapid detection of fastidious organisms such as fungi, anaerobes and resistance genes	Extended incubation time for fungi and anaerobes. Potential for "mixed flora" and no specificity of pathogens
Collection	We offer SimpliSWAB™, the industry's only universal collection device	Multiple collection devices, potential for contamination
Antibiotics	Less susceptible to antibiotic use	IS affected by antibiotic use

\*Results returned within 24 hours from completed requisition form and sample receipt

### **PCR test results**

Genito-STI Pathogen	s Detected		Results	Copies/mL*	(Low: <100,000; Moderate:100,000-3.9 Million; High: >3.9Million)
Bacterial Pathogens			· .		
Treponema pallidum			Detected	50,000	Low
AIT Labs Trepole genital ulceration, (primary) treatment treatment include	ma pallidum assay was de , clinically suspicious muco nt of primary and seconda s a Tetracycline (Doxycycl	signed, validated, and intende ocutaneous lesions, anorectal l ary syphilis is Benzathine Penic ine or Tetracycline), OR Ceftri	ed for medically indica esions, and select extr illin G. IF a BetaLactar axone (see Summary A	ted diagnostic purpos agenital site lesions (o n antibiotic allergy is p Antibiogram below)	es. Medical indications include oral, pharynx, etc). Preferred oresent, Alternative (secondary)
	Antibiotic Table Legend: ++): BEST ACTIVITY, >90% d :ensitive. +): GOOD ACTIVITY, 70-90% :ensitive. ±): VARIABLE ACTIVITY, 50-7 re sensitive. 0): Non-Recommended antim Note: Personalized (patient sp 'eport, are a correlation of de intimicrobial resistance gener intimicrobial sensitivity data.	IZED SUMMARY of bacterial cultural isolates are of bacterial cultural isolates are 70% of bacterial cultural isolates hicrobial; becific) data included in this tected microbes and s (if any), with national		RAM	
	ntramuscular, OP = ophthalm some antibiotics might not be www.pdr.net, www. drugs.com nformation).	ic, OT = otic. available in the US (see m, or www.rxlist.com for current	Treponer		
	Penicillins	Penicillin G (IM)	++		
	Parenteral Cephalosporins	Ceftriaxone (IV/IM)	+		
	Macrolides	Azithromycin (po/IV/OP)	+		
	Tetracyclines	Doxycycline (po/IV)	+		

+

Tetracycline (po)

include octor per ma

# Syphilis

- STI <u>caused</u> by Spirochete Treponema pallidum
- <u>Spread</u> via mucous membranes, non-intact skin, transfusions, and vertical transmissions (transplacental)
- <u>Presents</u> in 3 distinct stages:
  - Primary- painless chancre
  - Secondary- condyloma lata, scaling macular to popular lesions, syphilitic alopecia
  - Latent- asymptomatic period 3-20 years, infectious only in pregnancy and infusions
  - Tertiary- granulomas, thoracic aneurysm, and neurosyphilis

## Who to Test

- Symptomatic
- High risk population-
  - HIV positive
  - Sexually active men with men
  - High risk sexual behavior
  - Prior hx/o incarceration
- All pregnant women

### Tests

- Serologic testing
  - NonTreponemal- RPR, VDRL, and TRUST
  - Treponemal- FTA-ABS, TPPA, MHA-TP, TP-EIA, and CIA
- Direct Visualization and Darkfield Microscopy
- PCR- sensitivity 70-95%, Specificity 92-98%
- PCR not suitable for testing asymptomatic pts
- Treponemal tests usually remain positive for life.
- Reinfection possible

## Treatment- Penicillin G

- Early syphilis (primary, secondary, and early latent syphilis)single dose IM
- Latent syphilis or tertiary syphilis- IM once a week for 3x weeks.
- Neurologic, Otic, Ocular Syphilis- IV Pen G for 2x weeks
- Allergies to Penicillin should be challenged and then desensitized.

## Total Syphilis Rates/Cases Ohio 2020





## **Ohio Statistics**



## Syphilis in Ohio

- Preliminary data through December 2021 suggests total syphilis cases increased 45.9% over a three-year period from 2,015 cases in 2019 to 2,939 cases in 2021.
- Congenital syphilis cases the spread of syphilis to a fetus during pregnancy – increased 152.6% from 19 cases in 2019 to 48 cases in 2021
  - Congenital syphilis can cause a range of other medical conditions and lead to low birth weight, prematurity, miscarriage, stillbirth, and death.
  - ODH is asking healthcare providers to implement third trimester screening for syphilis and screening at time of delivery as a new standard of practice

## Plan

- Set patient up for Pen G treatment
- Notified health department
- Patient was lost to follow-up

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- <u>https://odh.ohio.gov/know-our-programs/std-surveillance/resources/total-syphilis-five-year-report</u>
- <u>https://ccchd.com/wp-content/uploads/2022/05/Health-Alert\_Syphilis-Cases-Rising\_5.5.22.pdf</u>
- https://ohiohospitals.org/OHA/media/OHA-Media/Documents/News%20and%20Publications/Newsletters/HAN-7-15-2021-Congenital-Syphilis-In.pdf

## **Emerging Trends in Infectious Diseases**

Kris Lindbloom, DO



## Case 1

- 28 year old patient
- Runny nose
  - Feeling moderately fatigued
  - Some sensation of feeling warm, but no true fever
  - Thought this was the usual winter cold and would go away
  - Cough has continued for weeks, and isn't going away
  - Cough is not really productive of typical sputum, but small bouts of material are expectorated
#### What illness was that?

• This patient eventually got a Z-Pack, and symptoms resolved quickly.

#### Pertussis

- Cough can last for 10 weeks or longer
- Coughing is so intense it can cause bruising of the eyes
- Treated with antibiotics.
- Infants not fully protected by their vaccines until 12 to 18 months of age.
- Parents and household contacts should get their booster vaccines.

#### Case 2

- Inner ear pain
- Coughing, with mucopurulent sputum
- Lack of energy
  - Returned from Alaska, and just kept feeling worse.
- Getting wheezy, and short of breath
- Another family member, their grand-child, has a severe sore throat.



#### What's going on?

## Haemophilus Influenzae type b (Hib)

- Can spread to the brain (meningitis)
- Can spread to the voicebox (epiglottitis)
- Cellulitis
- Bacteremia
- Meningitis
- Special risks: sickle cell, asplenia, HIV, undergoing chemo or XRT, bone marrow transplant recipients.

• Treat with amoxicillin, cephalosporins, Zithromax, doxycycline, and fluoroquinolone.

#### Case 3

- Started with mild symptoms
  - Sore throat
  - Fever
  - Temperature kept getting higher
  - Cervical lymphadenopathy
  - Now having difficulty breathing and swallowing

### Diphtheria

• Hallmark is a thick coating over the back of the throat and tonsils.

- Treatment is penicillin or erythromycin
- Antitoxin

#### Case 4

- Cough, runny nose, inflamed eyes, sore throat, fever
- Rash, and pink eye
  - The rash begins at the hair line, and moves down
  - Appeared about 2 weeks after fever
- Worsening symptoms:
  - Diarrhea
  - Pneumonia
  - Encephalitis

#### Measles

• 85 percent of outbreaks in US involved travelers or visitors without prior immunization.

#### Case 5

- 43 year old healthy person, in the middle of winter comes down with something.
- Runny nose for a bit at first
- Tired
- Headache
- Fever for several days.
- By day number 4 they developed a spot on the scalp and asked their spouse to take a look.....

#### Varicella

- Secondary bacterial infections can occur due to weakened immune system
- Extremely contagious
- Risk of encephalitis and meningitis increases with age

#### Case 6

- 14 year old child comes home from school and feels tired
- Having some low grade temperature elevations up to 99.3, but no real fevers
- So tired they can't go to school the next day
- Remains in bed for several days with nausea, some abdominal pain, and very much absent appetite
- Having some vague joint pains
- Family seeks medical attention when...

### Hepatitis A

- Contagious for 7 to 14 days before symptoms appear
- Remains contagious about one week after jaundice develops
- Symptoms may last up to about two months
- Immune globulin only works if given within two weeks of exposure
- Rest, drink liquids, eat a healthy diet, avoid alcohol, and carefully review any medications.
- Will never get hepatitis A again

#### **Platelet-Rich Plasma Injections**

Kyle Denihan, DO and Kaitlyn Rizzo, DO



# Objective

 Identify the biology and mechanism of platelet-rich plasma (PRP) injections and application for osteoarthritis and other musculoskeletal conditions

#### Overview

- PRP defined as portion of plasma fraction of autologous blood with a platelet concentration above baseline
- Over the past decade, PRP has emerged as a non-operative treatment in orthobiologics
- Ultimate goal of PRP injection is to enhance the body's innate ability to repair and regenerate
- Majority of the use of PRP injections thus far has been with musculoskeletal pathologies, including osteoarthritis

# Biology

- A typical blood specimen is comprised of 93% red blood cells, 6% platelets, and 1% white blood cells
- Variety of growth factors, coagulation factors, adhesion molecules, cytokines, chemokines and integrins are stored in platelets
- Following injury that causes bleeding, platelets aggregate to release granules, subsequently activating inflammatory cascade and the healing process
  - Responsible for hemostasis, construction of new connective tissue and revascularization
- Over recent decades, more research has focused on platelet activation releasing growth factors which may ultimately accelerate tissue and wound healing

# **Mechanism of Action**

- Ideology behind treatment with PRP is the reversal of red blood cell:platelet ratio by decreasing the red blood cells to 5% as well as increasing concentration of platelets to 94%
  - Platelet concentrations less than 1000 x 10<sup>6</sup> / mL were not reliable for enhancing wound healing
  - The greatest reparative efficacy with PRP was found to be with five times the normal platelet concentration (approximately 1 million platelets / µL)
    - Concentrations higher than this did not show further enhancement



Xie X, Zhang C, Tuan RS. Biology of platelet-rich plasma and its clinical application in cartilage repair. Arthritis Research and Therapy. 2014;16(1):204. doi:10.1186/ar4493

#### **Mechanism of Action**

- Notable components of PRP
  - Transforming growth factor β (TGF-β)
  - Platelet-derived growth factors (PDGF-AB and PDGF-BB)
    - Both of these stimulate proliferation of mesenchymal cells
    - TGF-β also stimulates extracellular matrix production
    - Combined, ultimately lead to fibrous connective tissue and scar formation
  - Insulin-like growth factor (ILGF-1 and ILGF-2)
    - Acts as chemotactic for fibroblasts and stimulates protein synthesis
  - Vascular endothelial growth factors (VEGFs)
  - Fibroblast growth factor 2 (FGF-2)
    - VEGF and FGF-2 important for stimulating new blood vessel formation, allowing nutrients and progenitor cells to be brought to injury site
  - Epidermal growth factor (EGF)
    - Stimulates endothelial chemotaxis or angiogenesis, as well as regulates collagenase secretion

#### Table 1

Summary of growth factors contained in platelet-rich plasma [64,77,78]

Growth factor	Function
Transforming growth factor- $\beta$ (TGF- $\beta$ )	Stimulates undifferentiated mesenchymal cell proliferation
	Regulates endothelial, fibroblastic, and osteoblastic mitogenesis
	Regulates collagen synthesis and collagenase secretion
	Regulates mitogenic effects of other growth factors
	Stimulates endothelial chemotaxis and angiogenesis
	Inhibits macrophage and lymphocyte proliferation
Fibroblast growth factor (FGF)	Promotes growth and differentiation of chondrocytes and osteoblasts
	Mitogenetic for mesenchymal cells, chondrocytes, and osteoblasts
Platelet-derived growth factor a and b (PDGF)	Mitogenetic for mesenchymal cells and osteoblasts
	Stimulates chemotaxis and mitogenesis in fibroblast, glial, or smooth muscle cells
	Regulates collagenase secretion and collagen synthesis
	Stimulates macrophage and neutrophil chemotaxis
Epidermal growth factor (EGF)	Stimulates endothelial chemotaxis or angiogenesis
	Regulates collagenase secretion
	Stimulates epithelial or mesenchymal mitogenesis
/ascular endothelial growth factor (VEGF)	Increases angiogenesis and vessel permeability
	Stimulates mitogenesis for endothelial cells
Connective tissue growth factor (CTGF)	Promotes angiogenesis
	Cartilage regeneration
	Fibrosis and platelet adhesion
Insulin like growth factor (ILGF 1 and 2)	Chemotactic for fibroblasts and stimulates protein synthesis
	Enhances bone formation
Platelet factor 4 (PF-4)	Stimulate the initial influx of neutrophils into wounds
	Chemo-attractant for fibroblasts
Interleukin 8 (IL-8)	Pro-inflammatory mediator
	Recruitment of inflammatory cells
Veratinogute growth factor (VGF)	Promote and the field call growth migration adhesion and survival
Neracinocyte growin factor (Nor)	Avgiagenesis
	Angiogenesis

#### Procedure

- Relatively simple procedure that can be performed in typically under 2 hours as an outpatient procedure
- Step 1: Collect the patient's own blood
  - Between 15 to 50 mL
- Step 2: Centrifuge the blood
  - Separates the solid and liquid parts of the blood
- **Step 3**: Process and collect the platelets
- Step 4: Inject the PRP into the desired site
  - Use a local anesthetic prior to injecting
- If scar tissue is present, percutaneous tenotomy can be performed

## **Application to Osteoarthritis**

- Multiple randomized controlled trials showed PRP is safe and effective for knee OA
  - Similar efficacy to hyaluronic acid (HA)
  - Even more effective than hyaluronic acid in younger, active patients with low grade OA
- Meta-analyses of 14 randomized control trials involving 1350 patients
  - PRP pain scores significantly lower than HA at both 24 and 52 weeks
  - Physical function score significantly lower in PRP
  - Ie. stair use, rising from sitting, standing, bending
  - Stiffness scores were also significantly superior with PRP
- PRP has endogenous analgesic effects and alleviates inflammation-related pain
  - HA increases viscosity and elasticity of joint fluid thus reduces pain versus lubrication
- No additional side effects when comparing the two treatments

## **Additional Applications**

- There is limited high-quality data to support its use for other pathologies at this time
- Preliminary studies have also shown use of PRP injections with hip osteoarthritis, plantar fasciitis, hamstring muscle and tendon injuries, elbow tendinopathy
- Studied comparison to glucocorticoid injections, physical therapy, and placebo - some of which showed significant differences while others did not
- Other confounding issues as well including PRP injection content in terms of leukocytes, concentration, lidocaine, and volume
- Other approved uses in the future may include dermatologic issues like alopecia and wrinkles

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#### Dermoscopy in Primary Care

Paul Bruner, DO and Rebecca Howard, MD



## Objectives

- Become familiar with the role and benefits of dermoscopy in the primary care setting,
- Build confidence with visual identification of common benign and malignant skin lesions,
- Learn classic descriptors of dermoscopic patterns to improve documentation of findings
- Follow decision-making framework on which clinicians can direct care

# Introduction to Dermoscopy

- Dermatoscope
  - Handheld 10x microscope with intense light source for viewing skin lesions
- Polarized light benefits
  - Penetrates to deeper skin layers
  - Reduces glare
  - Elucidates colors, structures, and patterns not visible to unaided eye





Non-polarized



Image source: https://biox.stanford.edu/highlight/deep-learning-algorithm-does-well-dermatologists-identifying-skincancer



Polarized

#### **Benefits in FM Practice**

- 33 years in family practice, 30 of which I did not use a dermatoscope.
  - Used direct observation mostly
  - Used otoscope with 3x magnification and halogen light
- Utility of Dermoscopy for Family Practice
  - 10x magnification with high power LED and polarized light
  - Shown to increase diagnostic sensitivity of benign vs. malignant lesions
  - Greater PCP confidence as to when biopsy and/or dermatology referral is indicated
    - Up to 26% of PCP referrals to dermatology thought unnecessary

#### **Dermoscopy Usage is Growing**

- In 2005, 25% of dermatologists used a dermatoscope.
- In 2017, 100% of US dermatology residencies taught and used dermoscopy, and 84% of dermatology residents used a dermatoscope more than once a day.
- In 2018, 98% of Brazilian dermatologists reported using dermoscopy once daily, and 88% more than once daily.
- If skin specialists find dermoscopy a valuable diagnostic adjunct, FPs and other PCPs should consider its use.

## Dermoscopy: Costs, ROI, and Logistics

- Costs: Average \$1000 for dermatoscope; \$0.50 per plastic cap for infection control; inexpensive matriculating solutions, such as oil, glycerin, or water; time
- ROI: Costs completely covered within approximately 8-10 biopsy or cryodestruction procedures.
- Logistics: Obtain scope, cap, and matriculating solution from lockable cabinet/drawer; examine patient; estimate 5-10 minutes plus time to counsel patient
  - Procedure time is additional

#### **Two-Step Algorithm**

- Decision-making framework
- Focus on identification of malignancies
- Relies on some pattern/structure recognition
- First, rule out common benign distractors



Image source: AAFP

Seborrheic Keratosis (SK)	Dermatofibroma (DF)	Hemangioma (HG)
<ul> <li>Milia-like cysts</li> <li>Comedo-like openings</li> <li>Moth-eaten borders</li> <li>Fingerprint structures</li> <li>Cerebriform pattern</li> <li>Pigment globules</li> <li>Hairpin vessels</li> </ul>	<ul> <li>Central pink/white scarring</li> <li>Fine peripheral pigment network</li> </ul>	<ul> <li>Red-purple "lakes" divided by septae</li> </ul>



Seborrheic Keratosis (SK)

- Milia-like cysts
- Comedo-like openings
- Moth-eaten borders
- Fingerprint structures
- Cerebriform pattern
- Pigment globules
- Hairpin vessels



#### **ACTION: reassure**





#### Dermatofibroma (DF)

- Central pink/white scarring
- Fine peripheral pigment network









#### Hemangioma (HG)

 Red-purple "lakes" divided by septae

#### **ACTION: reassure**

#### Step 1b: Malignant nonmelanocytic lesions

#### Basal Cell Carcinoma (BCC)

- Arborizing vessels
- Spoke-like pattern
- "Leaf" structures
- Blue-gray ovoid nests
- Ulceration



#### **ACTION: Biopsy/Refer**

#### Step 1b: Malignant nonmelanocytic lesions



#### **Squamous Cell Carcinoma (BCC)** Rosettes/clovers/"four clod dots" • White circles White structureless areas Glomerular vessels or hairpin with halo • Radial dots/globules Yellow scale/central keratin heap

#### **ACTION: Biopsy/Refer**
- 3 point melanoma checklist:
  - 1. Asymmetry—color and structure
  - 2. Atypical pigment network
  - 3. Blue-white "veil"
- 0 or 1 out of 3: likely benign ACTION: reassure/ monitor
- 2 or 3 out of 3--high sensitivity ACTION: Biopsy/Refer.



\* Benign patterns encountered in many acquired nevi and dysplastic nevi. Blue nevi, some Spitz nevi and congenital melanocytic nevi can also manifes some of these patterns.

\*\* N.B. to novices: Nevi with this pattern should be interpreted with caution. Concept and design by Natalia Jaimes, MD and Ashfaq A. Marghoob, MD

Step 2: Nevus vs. Melanoma

- 3 point melanoma checklist:
  - 1. Asymmetry—color and structure
  - 2. Atypical pigment network
  - 3. Blue-white "veil"
- 0 or 1 out of 3: likely benign ACTION: reassure/ monitor
- 2 or 3 out of 3--high sensitivity ACTION: Biopsy/Refer.



- 3 point melanoma checklist:
  - 1. Asymmetry—color and structure
  - 2. Atypical pigment network
  - 3. Blue-white "veil"
- 0 or 1 out of 3: likely benign ACTION: reassure/ monitor
- 2 or 3 out of 3--high sensitivity ACTION: Biopsy/Refer.



- 3 point melanoma checklist:
  - 1. Asymmetry—color and structure
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- 3 point melanoma checklist:
  - 1. Asymmetry—color and structure
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  - 3. Blue-white "veil"
- 0 or 1 out of 3: likely benign ACTION: reassure/ monitor
- 2 or 3 out of 3--high sensitivity ACTION: Biopsy/Refer.



#### **Additional Resources**





#### **Practice and Apply**

• Apps



Dermoscopy Two Step Algorithm Usatine Media

#### **Buy Dermatoscope**

 Price points \$400-1700





YouDermoscopy Meeter Congressi SRL



#### **O** CANFIELD

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## Health Policy Update – Health Provisions in the Inflation Reduction Act of 2022

Eric Mast, DO



# Inflation Reduction Act of 2022

- Signed into law by President Biden August 2022
- Result of negotiations on the proposed Build Back Better Act
- Contains provisions to:
  - Reduce deficit
  - Promote clean energy
  - Expand and modernize the IRS
- Contains numerous health provisions related to prescription drugs

# Medicare Drug Coverage

- Part B
  - Medical insurance which covers drugs are not usually selfadministered and are furnished and administered as part of a physician service
- Part D
  - Prescription drug insurance which covers retail prescription drugs approved by the FDA and used for a medically accepted indication which are not covered under Part B (or Part A)

# **Medicare Drug Price Negotiation**

- Under prior legislation, Medicare was not permitted to negotiate drug pricing
  - Non-interference clause
- Under the new law, the Secretary of HHS is required to negotiate prices for a small number of high cost drugs
  - Phase-in begins in 2026 10 Part D drugs
  - Drugs will be selected from the 50 drugs with highest total Medicare spending
  - Number of drugs with negotiated prices will increase over time

Figure 1

#### A Relatively Small Number of Prescription Drugs Accounts for a Large Share of Medicare Part D and Part B Drug Spending

Share of total spending ( ≡=1%):



#### Estimated Net Total Part D Spending in 2019: \$145 billion

Total Part B Drug Spending in 2019: \$37 billion

Top 50 Part B drugs

80%

(\$30 billion)

NOTE: The top 250 Part D drugs includes drugs with one manufacturer and no generic or biosimilar competition, ranked by net total Part D spending, taking into account estimated rebates from CBO. The 2020 release of the Part D drug spending dashboard includes a total of 3,536 drugs in 2019, of which 2,458 have one manufacturer. The top Part B 100 drugs are ranked by total spending. The 2020 release of the Part B dashboard includes a total of 585 drugs in 2019.

KFF

SOURCE: KFF analysis of 2019 data from the CMS Medicare Part D Drug Spending Dashboard and Part B Drug Spending Dashboard, 2020 release.

Table 1: The 10 Top-Selling Drugs in Medicare Part D Include Several Costly Medications to Treat Cancer, Diabetes, and Rheumatoid Arthritis

Brand name	Generic name	Therapeutic class	Treats
Revlimid	Lenalidomide	Biological Response Modifiers	Cancer
Eliquis	Apixaban	Coag/Anticoag, Anticoagulants	Blood clots
Januvia	Sitagliptin Phosphate	Antidiabetic Agents, Misc	Type 2 diabetes
Xarelto	Rivaroxaban	Coag/Anticoag, Anticoagulants	Blood clots
Imbruvica	Ibrutinib	Molecular Targeted Therapy	Cancer
Trulicity	Dulaglutide	Antidiabetic Agents, Misc	Type 2 diabetes
Ibrance	Palbociclib	Molecular Targeted Therapy	Cancer
Humira Pen	Adalimumab	Immunosuppressants, NEC	Rheumatoid arthritis
Victoza 3-Pak	Liraglutide	Antidiabetic Agents, Misc	Type 2 diabetes
Lantus Solostar	Insulin Glargine	Antidiabetic Agents, Insulins	Type 1/type 2 diabetes

NOTE: Top 10 drugs with one manufacturer and no generic or biosimilar competitors, based on net total Part D spending, taking into account average rebates from Congressional Budget Office analysis of Part D spending data.



Table 2: The 10 Top-Selling Drugs in Medicare Part B Include Several Costly Medications to Treat Cancer, Macular Degeneration, and Rheumatoid Arthritis

				Total spending (in	Average spending	Average spending per
	Brand name	Generic name	Treats	billions)	per claim	beneficiary
1	Eylea	Aflibercept	Macular degeneration	\$2.9	\$2,093	\$10,851
2	Keytruda	Pembrolizumab	Cancer	\$2.7	\$9,102	\$53,745
3	Opdivo	Nivolumab	Cancer	\$1.8	\$8,379	\$59,590
4	Rituxan	Rituximab	Cancer	\$1.7	\$7,147	\$24,758
5	Prolia	Denosumab	Osteoporosis	\$1.6	\$1,346	\$2,722
6	Lucentis	Ranibizumab	Macular degeneration	\$1.3	\$1,881	\$9,689
7	Neulasta	Pegfilgrastim	Bone marrow stimulant	\$1.2	\$4,286	\$15,053
8	Avastin	Bevacizumab	Cancer	\$1.0	\$1,123	\$4,697
9	Orencia	Abatacept	Rheumatoid arthritis	\$0.9	\$3,804	\$31,700
10	Remicade	Infliximab	Rheumatoid arthritis	\$0.9	\$3,266	\$18,878

NOTE: Top 10 drugs based on total Part B drug spending.

SOURCE: KFF analysis of 2019 data from the CMS Medicare Part B Drug Spending Dashboard, 2020 release. • PNG



# **Rapid Drug Price Increases**

- Medicare has had no authority to address/limit annual price increases for covered drugs
  - Half of all covered drugs had price increases exceeding the rate of inflation between 2019-2020
- Law require drug manufacturers to pay a rebate if price increases are greater than inflation
- Unintended consequence of drug manufacturers increasing the launch price of new drugs coming to market?

Figure 2

Price Increases Outpaced Inflation for Most of the Top 25 Medicare Part D and Part B Drugs by Total Spending in 2020





# Cap Medicare Out-of-Pocket Drug Spending

- Currently Medicare provides catastrophic coverage for high outof-pocket drug costs – but no limit on total amount out-ofpocket costs that beneficiaries pay
  - In 2022 threshold is \$7050/yr
    - Beneficiaries pay ~\$3000
  - 5% copay above catastrophic threshold
- Law eliminates the 5% copay
- Caps the out-of-pocket spending at ~\$3250/yr in 2024
- In 2025, cap drops to \$2000/yr

# **Cost of Insulin**

- Currently Part D coverage for insulin varies, and what enrollees pay for insulin varies per plan
- New law caps Medicare monthly cost sharing to \$35/month
- Covers all insulins
- Takes effect in 2023

Figure 3

Average Out-of-Pocket Spending per Prescription by Non-LIS Medicare Part D Enrollees for Most Insulin Products Available in Both 2007 and 2017 Increased



NOTE: LIS is low-income subsidy.

SOURCE: KFF analysis of 2007-2017 prescription drug event claims data from a 5% (2007-2016)/20% (2017) sample of Medicare beneficiaries from the Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse.



#### Figure 6

#### Average Annual Price Increases for Insulin Products Far Outpaced Inflation Between 2013 and 2018



NOTE: Analysis is based on average spending per dosage unit and does not account for rebates. \*2013-2018 compound annual growth in average spending per dosage unit compared to the compound annual growth in the CPI-U between July 2013 and July 2018.



SOURCE: KFF analysis of 2013-2018 data from the Centers for Medicare & Medicaid Services (CMS) Medicare Part D Drug Spending Dashboard.

### Vaccine Coverage

- Medicare Part B covers many vaccines with no cost sharing
  - COVID 19, influenza, pneumococcal, hepatitis B
- Medicare Part D provides coverage with cost sharing
  - Shingles
- Under new law, adult vaccines covered under Medicare Part D which are recommended by ACIP are covered with no cost sharing

### **Expanding Part D Low-Income Subsidies**

- Low-Income Subsidy (LIS) program *Extra Help* provides variable levels of assistance to individuals with income and assets up to 150% Federal Poverty Level (FPL)
  - 28% of beneficiaries receive full or partial LIS benefits
- For Individuals also enrolled in Medicaid, full LIS benefits begin at incomes up to 135% FPL
  - Individuals with income between 135%-150% FPL receive partial help
- Law expands LIS eligibility to make individuals with incomes up to 150% FPL eligible for full benefits of LIS program

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#### **Questions?**

