Primary Care RAP September 2020 Written Summary

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INTRO: CLONIDINE or CLONIDON'T?

Paul D Simmons MD, Neda Frayha MD

Pearls:

- **Reader question: Clonidine has many uses but is only FDA-approved for treatment of hypertension, ADHD in children, tics from Tourette's and adjunct pain control in cancer.**
- **Taper the oral medication over 3-4 days to prevent rebound hypertension. Tapering the patch may take more time and require oral clonidine supplementation.**
- **It is not a good medication to use for treatment of emergency hypertensive crisis.**

- **Clonidine pharmacology:**
  - Stimulates presynaptic alpha-2 adrenergic receptors in the brain that leads to reduction in norepinephrine release leading to:
    - Decreased peripheral resistance → lower BP
    - Decreased renal vascular resistance → lower BP
    - Decreased heart rate
  - Stimulates imidazoline receptors that lower sympathetic activity overall that may be behind:
    - Pain relief
    - Anxiolytic, psych effect
  - Blocks pain transmission to the spinal cord
    - Pain relief
- **Forms:**
  - Short and long-acting tablets
  - Transdermal formulation
- **Indications:**
  - FDA-approved:
    - Hypertension
    - ADHD treatment in children (approved 2010)
    - Tics from Tourrette's syndrome
    - Adjunct for cancer pain
  - Off-label

        - Benzo or opioid withdrawal
        - Menopausal symptoms
        - Anxiety
        - Insomnia
        - PTSD
        - Restless leg syndrome
        - Ischemic foot ulcer healing
        - Nicotine dependence
        - Migraine prophylaxis
    - Only hypertension and nicotine withdrawal treatment have RCT-level data behind use
- **Side effects:**
    - Sedation
    - May potentiate effect of sedatives such as opioids and benzodiazepines
    - May have potential to become a drug of abuse
    - Rebound hypertension
        - Pearl: 3-4 day taper adequate in most cases for those on pills but can slow down if having issues with the taper. For those on a patch, may need to supplement with oral clonidine
- **Use inpatient for faster BP treatment:**
    - Not a good use
    - Many other good medications to use that are safer

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TIDBSI: Cryotherapy

Justin McCarthy, MD and Paul Simmons, MD

Pearls:

- **Cryotherapy has many indications for benign skin lesions. Literature suggests a single freeze-thaw cycle with a spray gun is sufficient.**

- **Background:**
  - First noted use in 1899 by dermatologist to treat warts
  - Liquid nitrogen first became widely available in 1940
- **Mechanism:**
  - Cryotherapy leads to damage of blood vessels that feed the tissue
  - Direct damage leading to death of the cells themselves
    - Melanocytes freeze at the highest temperatures leading to the common side effect of depigmentation
- **Literature review:**
  - Big picture:
    - More literature on treatment of warts than on cancerous and precancerous lesions
    - Everyone is doing everything differently
  - Specific studies:
    - Pediatric dermatology study in 2011 was a Cochrane review of studies from 1976 to 2001 that showed a range of cure rates (33-93%) that did not find a difference between cotton applicator vs. the spray
    - Cochrane review in 2014 showed no benefit to multiple freeze thaw cycles on the hand but benefit of two cycles in the foot. Overall pooled across 592 patients showed “aggressive” (>10 seconds) was better
- **Benefits:**
  - Cheap
  - Minimal pain
  - Low risk infection
  - Easy
  - No wound care
- **Indications:**
  - Seborrheic keratosis
  - Warts
  - Skin tags
  - Mollusca
  - Solar lentigines
  - Keloid scars
  - Dermatofibromas
  - Cutaneous horns
  - Actinic keratosis

        - While 10% are pre-malignant, most are benign so it's fine to treat with cryotherapy
- **Contraindications:**
    - Unsure of what the lesion is
    - Anything recurrent (needs to be biopsied)
    - Area of body with compromised circulation
    - Patient with Raynauds or cryoglobulinemia
- **Techniques:**
    - Two main techniques:
        - Cotton tip
        - Nitrogen spray
    - Hold nozzle of liquid nitrogen 1.5cm from surface of skin
    - 30 second flutter time spot freeze
        - Single freeze cycle = 30 second flutter time spot freeze
    - For benign lesions a single freeze cycle is enough to give 5mm of depth
    - See table 2 of this article for freeze times: https://www.racgp.org.au/afp/2017/may/optimising-cryosurgery-technique/#:~:text=The%20liquid%20nitrogen%20is%20sprayed,to%20this%20form%20of%20treatment.
- **Counseling:**
    - There is some mild pain involved
    - Blistering may happen
    - May get a vascular headache if near the head or neck
    - Alternated sensation
    - Both hyperpigmentation and hypopigmentation

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SGLT2 Inhibitors and GLP1 Agonists

Elizabeth Lamos MD, Neda Frayha MD, Paul Simmons MD

Pearls:

- **SGLT-2 inhibitors and GLP-1 agonists are gaining more traction as second-line agents after metformin given the increase in data suggesting their beneficial effects on not just weight loss and A1c reduction, but also renal and CV protection.**
- **GLP-1 agonists may be beneficial for patients who want to have a once weekly injection.**

- **SGLT-2 inhibitors (-flozins):**
    - Mechanism:
        - Blocks the SGLT-2 receptor in the kidney allowing glucose to be lost in the urine
    - Benefits:
        - A1c reduction 0.5-1%
        - May lead to weight loss
        - May reduce blood pressure
        - Renal protection
        - Some have been shown to reduce MACE outcomes
    - Risk/downside:
        - Renal insufficiency, particularly in those with some baseline renal dysfunction
            - Contraindicated if GFR < 30
        - Diabetic ketoacidosis that can happen at normal glucose levels with the following risk factors:
            - Illness
            - Surgical stress
            - Alcohol use
            - Reduction in insulin with food intake
        - Orthostatic hypotension

        - Potential increase in fungal infections
        - Rare but serious genital infections including gangrene
        - Increased risk of amputation with canagliflozin for people with peripheral vascular disease or severe peripheral neuropathy
    - Studies:
        - EMPA-REG (empagliflozin)
            - Showed reduction in MACE outcomes
        - CANVAS (canagliflozin)
            - Showed reduction in hospitalization and heart failure
        - DECLARE (dapagliflozin)
            - Mixed but did not show increase in CV risk
- **GLP-1 agonists (-tide):**
    - Mechanism:
        - Stimulate incretin to make us feel fuller faster, tel the brain we are not hungry and regulate insulin/glucagon from the pancreas
    - Benefits:
        - Weight loss
        - A1c reduction
        - May be once a week injection (semaglutide and dulaglutide)
        - Reduction of CV disease (semaglutide and dulaglutide)
        - Likely improvement in renal function
    - Risk/downsides:
        - Injectable
        - GI side effect in 30-40% of people: nausea and diarrhea that generally subsides with time
            - Should not be used for someone with history of gastroparesis
        - Semaglutide (signal for retinopathy risk)
        - Contraindicated in those with medullary thyroid cancer or family history of MEN2A or 2B
        - Small increase in pancreatitis risk
    - Studies:
        - LEADER (liraglutide)
        - SUSTAIN (semaglutide)

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Proceed with Confidence: LARCs, Part 1 & 2

Karlynn Sievers, MD; Paul D Simmons, MD

Pearls:

- **For both insertion and removal of subdermal implants, clear identification of landmarks and palpation of the device is key to a successful procedure.**
- **For insertion of IUD's, each device has a different release mechanism so it's important to review and refresh yourself on those instructions before starting the procedure.**

- **Subdermal implants background:**
    - Most common is etonogestrel-releasing implant (Nexplanon © and Implanon ©), both subdermal progestin-only implants
    - Nexplanon has replaced Implanon because it is radio-opaque so can be found easier if there is deep placement
    - FDA-required 4 hour training course
- **IUD background:**
    - Safety and efficacy have been well established in nulliparous women including adolescents
    - Two types:
        - Copper IUD - 10 yrs (maybe up to 12 years) effective
            - More effective for prevention than Depo and also can be used as emergency contraception if inserted less than 120 hours (5 days) after unprotected intercourse
            - Most common side effect is dysmenorrhea and increased menstrual bleeding that tend to get better over time
        - Hormone-releasing levonorgestrel

- Mirena ©: 52mg levonorgestrel, 5 years (maybe up to 7 years) effective
    - Side effects: irregular bleeding or spotting, headaches, nausea, breast tenderness, mood changes and possibly ovarian cyst formation
- Liletta ©: levonorgestrel
    - Indicated for contraception, menorrhagia, endometrial protection for women on estrogenic hormone replacement therapy
- Skyla ©: smaller, 3 years
- Kyleena ©: smaller, 5 years

- **Subdermal implant procedure:**
    - Key counseling points:
        - ~30% of women will have no bleeding once device inserted
        - ~30% of women will have persistent bleeding that can be heavy
        - ~30% fo women will have irregular bleeding
    - Insertion steps:
        - Point of insertion: 8-10cm from the medial epicondyle and 3-5cm above the sulcus of the biceps and triceps muscle (towards the triceps muscle)
        - Position: lie on back with the arm of insertion (usually non-dominant) flexed and hand under head like relaxing at a beach
        - Use a surgical marker to mark the point of insertion and about 5 cm proximal to that to guide insertion
        - Clean the entire track with antiseptic solution
        - Anesthetize the entire track with 2cc of 1% lidocaine without epi, usually with 25-gauge 1.5 inch needle
        - When opening the Nexplanon, ensure the device is in the needle
        - Position the needle at a 30 degree angle
        - Once the needle pops through the skin, lower the needle to an almost horizontal position and advance the needle subdermally the full length of the needle. Pull back on the slider to withdraw the needle and complete subdermal insertion.
        - After insertion, palpate to confirm insertion
        - Dressing: bandaid or steri-strip, pressure dressing to minimize bruising
    - Removal steps:
        - Position: same as above
        - Palpate device and mark with sterile surgical marker
        - Anesthetize the distal site where you are going to make the incision to remove it, about 0.5cc of 1% lidocaine without epi UNDER the device so as not to obscure location
        - Push on the proximal end to elevate the distal end. Make a very small incision at the distal end parallel to the device

        - Grasp the tip with a hemostat and pull out. You may need to dissect away some fibrous tissue
        - Measure to make sure you've got 4cm
        - Dressing: steri-strips and pressure dressing
- **IUD procedure:**
    - Key counseling points:
        - For hormonal devices, many will become amenorrheic or have irregular bleeding
        - Copper IUD should not affect periods at all
    - Insertion steps:
        - Perform a pelvic exam +/- bimanual exam to know where the cervix is located and positioned
        - Premedicate with ibuprofen 800mg (+/- Valium)
        - Clean cervix with antiseptic solution
        - Sound uterus to determine the length
            - In nulliparous women, may need to be use a tenaculum to grasp the uterus
        - Each insertion device is slightly different → REVIEW INSERTION INSTRUCTIONS TO MAKE SURE YOU KNOW HOW DEEP TO INSERT AND WHEN TO RELEASE THE DEVICE
        - After insertion, wait 10-15 seconds before withdrawing the device to make sure it stays there
        - Cut the string to about 3-4cm from the os, long enough to retrieve later but not so long it's uncomfortable
    - Removal steps:
        - Speculum exam to visualize the cervix
        - Visualize string, gently pull with forceps
- <u>Pearls</u>:
    - Nexplanon:
        - If you are attempting to make the device shallow and come through the skin, simply re-angle and place it
        - Counseling women on what to expect from a bleeding/menstruation standpoint is important to their overall satisfaction with the device
        - Counsel to use a back-up contraception method for 7 days to prevent pregnancy
        - Implants to migrate, particularly in women who lose or gain significant weight or who fiddle with the device. Palpation of the distal end is very important for where to make the incision for removal. You can use x-ray and ultrasound to find the device if necessary.
    - IUDs:
        - Insertion in nulliparous women is usually more difficult, so preparing patients in advance that they may experience a little more cramping or it may take a little more time.

- Some women may feel the IUD at the cervix for a time but that generally goes away
- May have nulliparous women come in during last couple of days of period when they aren't bleeding heavily but cervix is slightly open
- Warning women with IUD that if they have symptoms of pregnancy, they should test right away. IUD in pregnancy can implant into placenta and cause issues

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Chronic Cough

Kathryn Robinett MD, Neda Frayha MD, Paul D Simmons MD

Pearls:

- **Don't be afraid to treat chronic cough empirically and simultaneously. If it persists despite treatment and basic work-up beyond 12 weeks, refer to pulm or ENT.**

- **Cough definitions:**
  - Chronic > 8 weeks
  - Subacute 3-8 weeks
  - Acute < 3 weeks
- **Common causes of chronic cough:**
  - Post-viral
  - GERD
  - Post-nasal drip (now known as upper airway cough syndrome)
  - Asthma
  - COPD
  - Rare causes:
    - Lung cancer
    - Interstitial lung disease
    - Eosinophilic bronchitis

    - Occupational (notices it gets better when on vacation away from work or worse returning to work or new job with exposures)
- **Overall approach:**
    - Very few guidelines
    - Varies by provider
    - Coughing begets coughing so an empiric for a total of 8 weeks of cough approach with multiple treatments to stop the cough isn't wrong
- **Diagnostics:**
    - **If no improvement at 8 weeks:**
        - CBC
        - Chest X-ray
    - **If no improvement at 4 weeks with empiric treatment:**
        - Full PFTs
        - CT chest, non-contrast, high resolution but most CT scans are so good these days the standard is fine
        - Referral to pulmonology
- **Treatment options:**
    - Prednisone taper - 40 mg x 4 days, 30mg x 4 days, 20mg x 4 days, 10mg x 4 days
    - PPI x 4 weeks
        - Esophageal pH testing it not very helpful in cough because you may have normal pH but have GERD-related chronic cough
    - Short-acting beta agonist +/- inhaled corticosteroid (not helpful if on oral steroids)
    - Cough suppressants:
        - Benzonatate (Tessalon perles)
        - Codeine
    - Nasal steroid
- **If improvement:**
    - Peel off treatments starting with cough suppressants, leaving treatment for postnasal drip, GERD and asthma.
    - Peel off remaining treatment based on level of suspicion for the underlying cause
- **Other rarer causes:**
    - Chronic cough hypersensitivity syndrome - nerves and lungs become overly sensitive after viral URI resulting in chronic cough
    - Vocal cord dysfunction - referral to ENT
    - Cough as a tic - treated with behavioral therapy, speech therapy

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Perinatal Mental Health

Sara Mazzoni MD, MPH, Neda Frayha, MD

Pearls:

- **Suicide is the leading cause of maternal mortality in the US.**
- **SSRI's are safe in pregnancy and in breastfeeding.**

- **Depression and pregnancy:**
  - ⅓ cases occur PRIOR to pregnancy
  - ⅓ cases occur DURING pregnancy
  - ⅓ cases occur AFTER pregnancy (postpartum)
- **Depression during pregnancy:**
  - Increased risk of low birth weight, preterm delivery and worse obstetric outcomes
  - Pearl: Suicide is the leading cause of maternal mortality in the US
- **Risk factors:**
  - History of maternal depression prior to pregnancy
  - Family history of any mental illness
  - Lower socioeconomic status
  - Less social support
  - Unwanted pregnancy
  - Difficulties in marriage
  - Intimate partner violence
- **Screening and diagnosis:**
  - Tool itself doesn't matter so long as you are screening
  - PHQ-9
  - Edinburgh Postnatal Depression Scale (EPDS) → most validated in pregnancy because it removes things like sleep disturbance (part of PHQ-9) that are a normal part of pregnancy
- **Treatment:**
  - Non-pharmacologic options (exercise, counseling, CBT, etc.)
  - Pharmacologic
    - If prior SSRI that worked well, start there!
    - If not, SSRIs are most commonly used with the most safety data and considered first-line. They are NOT teratogenic and SAFE. Also safe with breastfeeding.
      - Sertraline is usually first up because most data available
      - Citalopram is good for those with more anxiety component
      - Avoid paroxetine because may be associated with very small increased risk of cardiac defects

- Risks:
  - Potentially small risk of neonatal persistent pulmonary hypertension and neonatal withdrawal syndrome

First Line Pharmacologic Treatments for Perinatal Depression (SSRIs)			
sertraline (Zoloft) 50-200 mg Increase in 50 mg increments	fluoxetine (Prozac) 20-60 mg Increase in 10 mg increments	citalopram (Celexa) 20-40 mg Increase in 10 mg increments	escitalopram (Lexapro) 10-20 mg Increase in 10 mg increments
Second Line Treatments for Perinatal Depression			
SSRIS	SNRIs	Other	
paroxetine (Paxil) 20-60 mg Increase in 10 mg increments	venlafaxine (Effexor) 75-300 mg Increase in 75 mg increments	bupropion (Wellbutrin) 300-450 mg Increase in 75 mg increments	Consider using a second line medicine if it has worked in the past
fluvoxamine (Luvox) 50-200 mg Increase in 50 mg increments	duloxetine (Cymbalta) 30-60 mg Increase in 20 mg increments	mirtazapine (Remeron) 15-45 mg Increase in 15 mg increments	

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CBD Review

Hayden Shafer MD, Michael Baca-Atlas MD

Pearls:

- **CBD in any format, aside from FDA-approved Cannabidiol (Epidiolex), is not uniform in content or potency making it hard to recommend with confidence to patients.**
- **Evidence is still limited overall but for chronic pain, CBD in combination with THC may help.**

- **CBD:**
    - Cannabinoid found in the hemp plant acting on both CB1/2 receptor
        - CB1 = neuronal slowing
        - CB2 = anti-inflammatory
        - At higher concentrations it also hits serotonin, opiate and dopamine receptors
- **What is CBD approved for?**

    - One drug cannabidiol (Epidiolex) is approved for treatment of seizures associated with Lennox-Gusto and Dravet syndrome
- **Other uses?**
    - Pain
        - 2017 Cochrane review of mucosal THC-CBD combo for neuropathic pain treatment found to be more effective than placebo. Herbal cannabis without CBD component did not significantly reduce pain
        - Common side effects were dizziness, drowsiness, changes in cognition, GI effects
        - Other issues: LFT elevation, TSH, LH, and FSH fluctuations, and drug-drug interactions
    - Anxiety
        - Six RCTs showed benefit in short-term anxiety relief
    - Skin
        - Multiple domains: anti-aging, acne, eczema, psoriasis
        - Not recommended by dermatology given lack of literature
- **CBD quality:**
    - Unregulated and hard to know what you're getting
        - Norwegian study looked at 200 different products
            - 38% did not contain amount stated on the bottle in part because at least 15% degradation of product after 30 days in light
            - Some products contain synthetic cannabinoids which can lead to seizures
- **Talking to patients about CBD:**
    - Find out what they are using it for and in what format
    - If it is working for them you could try something like, it is ultimately up to the patient to decide whether or not they are willing to take the risk

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SPIKES: Breaking Bad News

Evgenia Litrivis MD, Neda Frayha MD

Pearls:

- **Breaking bad news can be hard but having a framework can help ease the process for providers and patients.**
- **The SPIKES framework helps provide structure to delivering difficult news and stands for Setting, Perception, Invitation, Knowledge, Empathize, Summarize/Strategize.**

- **Why this is important:**
    - Patients want improved communication with their providers
    - Up to 85% of patients want to know information about their illness (prognosis, treatment options) regardless if good or bad
    - Literature shows when we treat communication as a procedure with discrete steps, out confidence as physicians increases
- **SPIKES protocol:** developed in 2000 by Walter Baile and Robert Buckman to improve physician confidence about breaking bad news
    - S (setting)
        - Private
        - Comfortable
        - Quiet
        - Eye level with the patient
        - Prepared with all the necessary information

- P (perception)
  - Ensure the patient understands what is going on by mirroring what they say, pacing the discussion and clarifying points of uncertainty or misunderstanding
- I (invitation)
  - Ask for permission to share information and discuss the topic. While 85% of people do want more information, 15% do not.
- K (knowledge)
  - Avoid medical jargon as much as possible, focusing on being clear about the use of words and simplifying
- E (empathize)
  - Help patients process emotions by providing empathic statements
  - Acknowledge the emotion
- S (summarize and strategize)
  - Reiterate the important points of the conversation
  - Provide support, reassurance that a team is there for them
  - Set up next steps
  - Take time for yourself to process the encounter with colleagues if it is helpful

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Paper Chase #1 - Monotherapy with a P2Y12 inhibitor or aspirin for secondary prevention in patients with established atherosclerosis: a systematic review and meta-analysis

Tom Robertson MD, Steve Biederman MD

Chiarito M, Sanz-Sánchez J, Cannata F, et al. Monotherapy with a P2Y12 inhibitor or aspirin for secondary prevention in patients with established atherosclerosis: a systematic review and meta-analysis. Lancet. 2020;395(10235):1487-1495. doi:10.1016/S0140-6736(20)30315-9

Pearls:

- **P2Y12 was associated with a very slight risk reduction for myocardial infarction compared to aspirin. There were comparable risks of stroke.**

- **Objective:** Compare P2Y12 inhibitors with aspirin monotherapy for secondary prevention in patients with known atherosclerosis

- **Method:** meta-analysis of randomized control trials comparing P2Y12 inhibitor with aspirin monotherapy
- **Results:**
    - 9 randomized control trials, 21,000 patients total in each group
    - Marginal risk reduction of MI 0.81 (0.66-0.99)
    - All-cause death was comparable
    - Rates of major bleeding did not differ
- **Bottomline:** P2Y12 was associated with a very slight risk reduction for myocardial infarction compared to aspirin. There were comparable risks of stroke.

Paper Chase #2 - Antibiotics Do Not Reduce Length of Hospital Stay for Uncomplicated Diverticulitis in a Pragmatic Double Blind Randomized Trial

Tom Robertson MD, Steve Biederman MD

Jaung R, Nisbet S, Gosselink MP, et al. Antibiotics Do Not Reduce Length of Hospital Stay for Uncomplicated Diverticulitis in a Pragmatic Double-Blind Randomized Trial [published online ahead of print, 2020 Mar 30]. Clin Gastroenterol Hepatol. 2020;S1542-3565(20)30426-2. doi:10.1016/j.cgh.2020.03.049

Pearls:

- **Antibiotics did NOT reduce length of stay, adverse events, or readmission rates**

- **Objective:** To assess the need for antibiotics in treating acute uncomplicated diverticulitis
- **Method:** Randomized, placebo controlled, double blind trial comparing 7 days of antibiotics versus placebo for patients with uncomplicated diverticulitis
    - Primary endpoint: length of stay
    - Secondary endpoints: adverse events, readmission, and patient's pain symptoms
- **Results:**
    - 180 patients hospitalized
    - No difference in length of stay (roughly 42 hours in each group)
    - No difference in readmission rates at 30 days
- **Bottomline:** Antibiotics did NOT reduce length of stay, adverse events, or readmission rates

Paper Chase #3 - Security and Privacy Risks Associated with Adult Patient Portal Accounts in US Hospitals

Tom Robertson MD, Steve Biederman MD

Latulipe C, Mazumder SF, Wilson RKW, et al. Security and Privacy Risks Associated With Adult Patient Portal Accounts in US Hospitals [published online ahead of print, 2020 May 4]. JAMA Intern Med. 2020;180(6):845-849. doi:10.1001/jamainternmed.2020.0515

Pearls:

- **Almost half of hospital personnel recommended password sharing and that few hospitals enabled patients to limit the types of information seen by those with proxy access.**

- **Objective:** To identify the proportions of hospitals that provide proxy accounts to caregivers of adult patients, endorse password sharing with caregivers, and enable patients to restrict the types of info seen by caregivers
- **Background:** Up to 95% of US hospitals have sort of an option of a patient portal
- **Method:** National cross sectional study with a telephone survey that took place in 2018 involving one independent and one health system affiliated hospital in every state. They excluded hospitals that did not have a portal system. The study included an IRB-approved use of deception whereby the interviewer posed as the daughter of an older patient to get information from a technical support person.
- **Results:**
    - 68% of hospitals offered proxy accounts
    - 19% limited what could be seen in the proxy account
    - About 50% of those interviewed recommended password sharing
- **Bottomline:** Almost half of hospital personnel recommended password sharing and that few hospitals enabled patients to limit the types of information seen by those with proxy access.

Paper Chase #4 - Distracted Driving Laws and Motor Vehicle Crash Fatalities

Tom Robertson MD, Steve Biederman MD

Flaherty MR, Kim AM, Salt MD, Lee LK. Distracted Driving Laws and Motor Vehicle Crash Fatalities. Pediatrics. 2020;145(6):e20193621. doi:10.1542/peds.2019-3621

Pearls:

- **Distracted driving laws were associated with significant reduction in fatal MVCs for teenage drivers**

- **Objective:** To examine the association of distracted driving laws on fatal MVCs involving teenagers
- **Background:** Motor vehicle collisions are the leading cause of death for youth aged 16 to 24 in the United States
- **Method:** Retrospective time series analysis of motor vehicle crashes fatalities in drivers, age 16 to 19, using the National Highway Traffic Safety Administration Database from the years 2007 to 2017. Compared MVC rates before and after implementation of laws and controlled for other legal/economic factors
- **Results:**
    - MVC decreased from 30 to 19 per 100,000 persons
    - In states enforcing texting bans, fatal collisions decreased by 30%

- **Bottomline:** Distracted driving laws were associated with significant reduction in fatal MVCs for teenage drivers

Paper Chase #5 - Effect of Antihypertensive Medication Reduction vs Usual Care on Short-term Blood Pressure Control in Patients with Hypertension Aged 80 Years and Older - The OPTIMIS Randomized Clinical Trial

Tom Robertson MD, Steve Biederman MD

Sheppard JP, Burt J, Lown M, et al. Effect of Antihypertensive Medication Reduction vs Usual Care on Short-term Blood Pressure Control in Patients With Hypertension Aged 80 Years and Older: The OPTIMISE Randomized Clinical Trial. JAMA. 2020;323(20):2039–2051. doi:10.1001/jama.2020.4871

Pearls:

- **Among older patients treated with multiple antihypertensive medications, a strategy of medication reduction, compared with usual care was NON-INFERIOR with regard to systolic blood pressure control at 12 weeks.**

- **Objective:** To establish whether antihypertensive medication reduction is possible without significant changes in systolic blood pressure control or adverse events during 12 week follow-up
- **Method:** Primary care based, randomized, unblinded, parallel group non-inferiority design where patients were randomized to either antihypertensive medication reduction or usual care and follow-up for 3 months.
    - Primary outcome: proportion of patients with blood pressure <150
- **Results:**
    - 569 patients randomized to the two groups
    - Non-inferior regarding systolic blood pressure at 12 weeks for the group who had medications reduced
    - 66% maintained reduction in medications
    - No statistically significant differences between the groups when it came to frailty, quality of life, adverse effects or serious events at that three month followup
- **Bottomline:** Among older patients treated with multiple antihypertensive medications, a strategy of medication reduction, compared with usual care was NON-INFERIOR with regard to systolic blood pressure control at 12 weeks.