ACP American College of Physicians
Leading Internal Medicine, Improving Lives

North Carolina Chapter

2018 ANNUAL SCIENTIFIC SESSION
Saturday Afternoon Presentations

February 23-24, 2018 • Grandover Resort • Greensboro, NC

This continuing medical education activity is sponsored by the American College of Physicians

ACP American College of Physicians
Leading Internal Medicine, Improving Lives

North Carolina Chapter

2018 ANNUAL SCIENTIFIC SESSION

FEBRUARY 23-24 | GRANDOVER RESORT, GREENSBORO

Representative Gregory F. Murphy, MD, FACS
NC House of Representatives

NC Legislative Medical Issue Update 2018

Brief Overview of Politics

Legislative Branch

US

Executive Branch

Versus

State

Judicial Branch Supreme Court

Essentially the ultimate decision makers

How are laws made?

- Issue brought up by constituent, business group, society (NCMS), environmental group, state gov agency, anyone
- Bill drafted with assistance of Staff Attorneys and then submitted to the Speaker of the House
- Assignment of Bills…Very Important…
  - If viewed favorably by leadership, good assigment
  - If not viewed favorably, often sent to the Rules Committee where bills usually die

Committee Meetings

Floor Debate

- Each Bill has to be voted on THREE times on three separate days (rare circumstances…HB2)
- Sometimes debate quick and noncontroversial, others debate well into the night…
- Majority Party usually gets its way if issue controversial
- Once a Bill passed in the House it is sent over to the Senate for the WHOLE process to start over (Committee Assignment, etc)

  Bill can die there, be changed mildly or substantially

Final Stages of a Bill

Governor signs into Law

Governor Vetoes

Unfortunately still can be very partisan

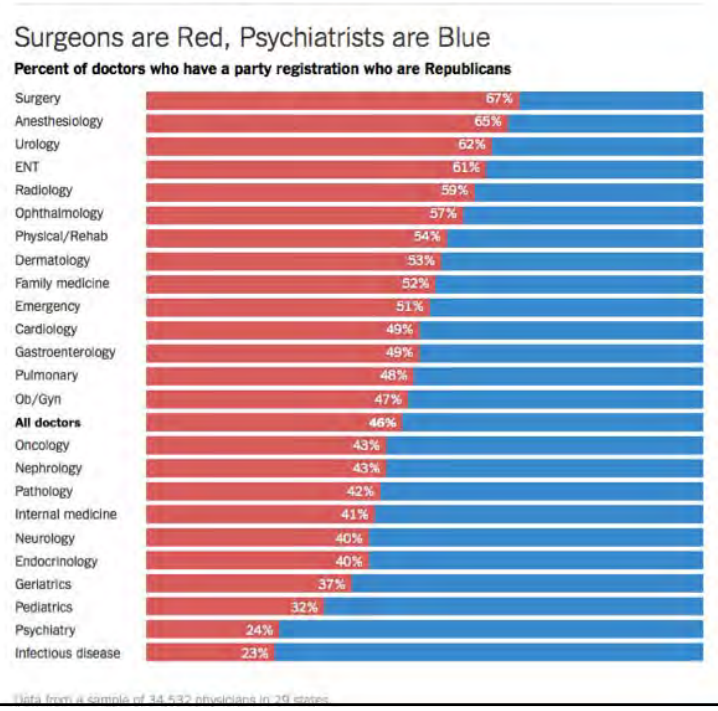
Historical Political Involvement by Physicians

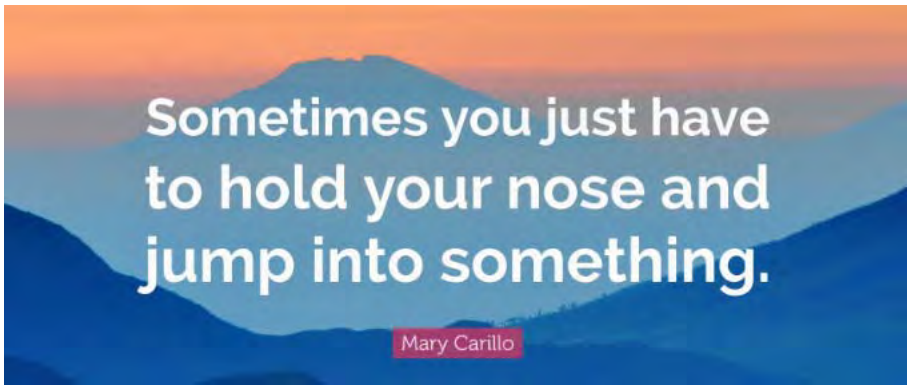
*In 1776, 11 percent of signers of the Declaration of Independence were physicians.

*In 1787 5 percent of the individuals crafting the US Constitution were physicians.

113th Congress (2013 – 2015)
From 2013-2015 there were 21 physicians in U.S.Congress, 20 of whom were male and 17 were members of the Republican party.
114th Congress (2015 – 2017)
From 2015-2017, there were 18 physicians in U.S. Congress. All were male and 15 were members of the Republican party. (38% Lawyers)
115th Congress (2017 – 2019)
From 2017-2019 there were 15 physicians in U.S. Congress, all were male and 13 were members of the Republican party. (3% Physicians)

Neal Dunn, MD (R), 2017-2018
US Congress
2nd District Florida




Sometimes you just have to hold your nose and jump into something.
Mary Carillo


hospitals
senate
tea party
rx
repeal
government
ideas
pharma
mandates
individual
medical
voters
courts
law
providers
uphold
rally
HEALTH CARE
REFORM
obamacare
politicians
costs
congress
debt
democrats
business
taxes
campaign
president
debates
doctors
dependents
agents
insurance
issues
brokers
republicans
false or true facts

Legislative Successes

Senate Bill 33 2011 Malpractice Reform

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

S D

SENATE DRS95005-TG-10 (01/25)

Short Title:	Medical Liability Reforms.	(Public)
Sponsors:	Senators Apodaca, Brown and Rucho.	
Referred to:		

A BILL TO BE ENTITLED

AN ACT TO REFORM THE LAWS RELATING TO MEDICAL LIABILITY BY PROVIDING LIMITED PROTECTION FROM LIABILITY TO THOSE PROVIDING EMERGENCY MEDICAL CARE, BY AUTHORIZING THE BIFURCATION OF TRIALS ON ISSUES OF LIABILITY AND DAMAGES IN CERTAIN ACTIONS, BY LIMITING THE AMOUNT OF NONECONOMIC DAMAGES THAT MAY BE AWARDED, BY AUTHORIZING THE PERIODIC PAYMENT OF FUTURE ECONOMIC DAMAGES IN LIEU OF A LUMP-SUM PAYMENT, AND BY MODIFYING APPEAL BONDS IN MEDICAL MALPRACTICE ACTIONS.

The General Assembly of North Carolina enacts:

North Carolina Senate Bill 33 2011

Caps on noneconomic damage

SB 33 caps compensation for noneconomic damages at $500,000. “Noneconomic damages” refers to compensation for pain, suffering, personal loss, professional loss or anything else that cannot be defined monetarily.

Immunity for emergency personnel

In addition to the cap, SB 33 gave extra protection to emergency personnel by putting tougher standards to prove medical malpractice in an emergency situation. Plaintiffs must prove “gross negligence” when pursuing a malpractice case classified as an emergency.

North Carolina Senate Bill 33 2011

Almost didn't happen:
- Although passed in Senate and then in House
- BUT—Vetoed by Governor Bev Perdue

NCMS and other Stakeholders went into action
- urging physicians to visit their legislators and made their voices heard one on one

Veto Overridden!!! 74-42

Physician Advocacy Works!!!!!

PHYSICIAN ADVOCACY PROGRAM®

North Carolina Senate Bill 33 2011

Results:

- 55-65% decrease in malpractice cases since 2011

- Stabilization of Malpractice Rates
  - Medical Mutual Investment Program

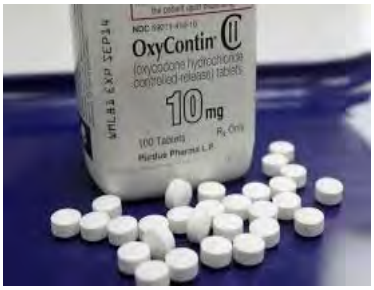
2014 marked the second consecutive year that malpractice payout amounts in the U.S. rose, according to Diederich Healthcare. However, North Carolina was one of four states in which payouts fell.

IN NC a total of $44,009,050 was paid in med mal claims in North Carolina in 2014 – 28.67 percent less than in 2013.

NC House Bill 243 "STOP ACT"

Opioid Epidemic in NC

- *4 die from Opioid Overdose each day in NC
- *1:100 babies born addicted to Opioids
- *Wilmington, NC #1 worst city in US (NC w 4 out of top 15)



<u>SOMETHING had to be done</u>

- *State Attorney General, other non-medical Legislators drafted up initial Legislation
- *First Draft <u>VERY</u> burdensome to physicians
- *Made sure a physician at the table to direct the Legislation

Physician Leadership in Legislation
House Bill 243

News Obits Opinion Workweek Sports Look Go-Guides Photos & Videos Feed

Murphy takes lead on opioid legislation

Ginger Livingston

Friday, March 3, 2017

Legislation that limits the number of painkillers doctors can prescribe and strengthens reporting requirements will help stem an epidemic of opioid abuse in North Carolina, the bill's chief sponsor, state Rep. Greg Murphy of Greenville, said.

Murphy was among lawmakers who introduced and promoted the Strengthen Opioid Misuse Prevention Act — known as the STOP Act — during a news conference at the state capitol on Thursday. The proposal includes provisions addressing prescribing and dispensing medication. It also includes $20 million for treatment and recovery programs over two years.

Murphy, R-Pitt, is the lead sponsor of the House bill; a companion bill was introduced in the Senate. By 2:30 p.m. Thursday 34 other

NC House Bill 243
"STOP ACT"

Initial restriction of 3 day script for Opioids
- *Would have been exceedingly bothersome for MD's
- *Subsequently changed to 5 day restriction for Acute Pain
- *Post Op pain to 7 days

Required Queries of Controlled Substance Reporting System (CSRS) with each Narcotic prescription to check patients history
- *Must document in EHR
- *Had to explain what limitations EHR's have
- *Allow paper script to be used at times

Attorney General wanted to fine MD's $250 for each instance *CSRS not queried
- *Changed language to reporting to NCMB—no fine

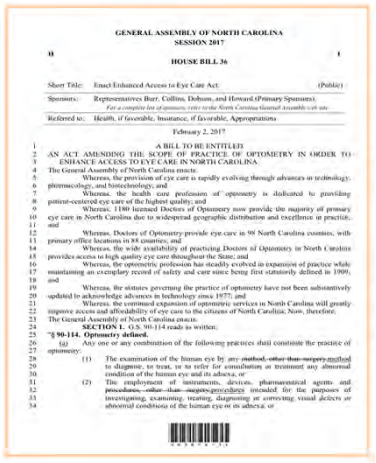
Initially a yearly fee of $50 per doc to keep CSRS going
- *Negotiated that down to $20

STOP ACT SUMMARY

- Initial prescription limits for ACUTE PAIN
- CSRS Queries with each prescription
- Escribing of Opioids
- Work Requirement
- Closer consultation with NP's/PA's/MD's at Pain Clinics
- Better defined disposal of Prescribed Opioids (Hospice)
- Standing Order for Naloxone
- Pharmacy Reporting with CSRS and regulations
- Mandatory yearly review of CSRS
- Over $30 Million dollars secured for Community Substance Abuse treatment.

Playing Defense

Playing Defense…. House Bill 36



GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

H 1

HOUSE BILL 36

Short Title: Enact Enhanced Access to Eye Care Act. (Public)

Sponsors: Representatives Burr, Collins, Dobson, and Howard (Primary Sponsors).

Referred to: Health, if favorable, Insurance, if favorable, Appropriations

February 2, 2017

A BILL TO BE ENTITLED

AN ACT AMENDING THE SCOPE OF PRACTICE OF OPTOMETRY IN ORDER TO ENHANCE ACCESS TO EYE CARE IN NORTH CAROLINA.

The General Assembly of North Carolina enacts:

Whereas, the provision of eye care is rapidly evolving through advances in technology, pharmacology, and biotechnology; and

Whereas, the health care profession of optometry is dedicated to providing patient-centered eye care of the highest quality; and

Whereas, 1180 licensed Doctors of Optometry now provide the majority of primary eye care in North Carolina due to widespread geographic distribution and excellence in practice; and

Whereas, Doctors of Optometry provide eye care in 98 North Carolina counties, with primary office locations in 88 counties; and

Whereas, the wide availability of practicing Doctors of Optometry in North Carolina provides access to high quality eye care throughout the State; and

Whereas, the optometric profession has steadily evolved in expansion of practice while maintaining an exemplary record of safety and care since being first statutorily defined in 1909; and

Whereas, the statutes governing the practice of optometry have not been substantively updated to acknowledge advances in technology since 1977; and

Whereas, the continued expansion of optometric services in North Carolina will greatly improve access and affordability of eye care to the citizens of North Carolina; Now, therefore,

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 90-114 reads as written:

"**§ 90-114. Optometry defined.**

(a) Any one or any combination of the following practices shall constitute the practice of optometry:

(1) The examination of the human eye by ~~any method, other than surgery,~~ method to diagnose, to treat, or to refer for consultation or treatment any abnormal condition of the human eye and its adnexa, or

(2) The employment of instruments, devices, pharmaceutical agents and ~~procedures, other than surgery,~~procedures intended for the purposes of investigating, examining, treating, diagnosing or correcting visual defects or abnormal conditions of the human eye or its adnexa, or

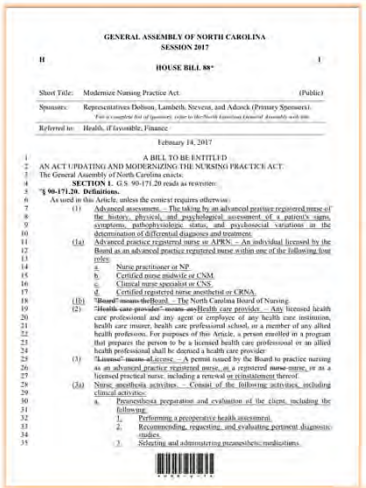
Bill to allow Optometrists to perform Laser Surgery in their Offices

Optometrists hired $750K worth of Lobbyists

Would have had profound implications if passed

As a Chair able to get it blocked completely and turned into a ‘study bill’, then died in Senate….(for now anyway)

Scope of Practice Issues HB 88



GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

H 1

HOUSE BILL 88*

Short Title: Modernize Nursing Practice Act. (Public)

Sponsors: Representatives Dobson, Lambeth, Stevens, and Adcock (Primary Sponsors).

Referred to: Health, if favorable, Finance

February 14, 2017

A BILL TO BE ENTITLED

AN ACT UPDATING AND MODERNIZING THE NURSING PRACTICE ACT.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 90-171.20 reads as rewritten:

"**§ 90-171.20. Definitions.**

As used in this Article, unless the context requires otherwise:

(1) Advanced assessment. – The taking by an advanced practice registered nurse of the history, physical, and psychological assessment of a patient's signs, symptoms, pathophysiologic status, and psychosocial variations as the determination of differential diagnoses and treatment.

(1a) Advanced practice registered nurse or APRN. – An individual licensed by the Board as an advanced practice registered nurse within one of the following four roles:

a. Nurse practitioner or NP.
b. Certified nurse midwife or CNM.
c. Clinical nurse specialist or CNS.
d. Certified registered nurse anesthetist or CRNA.

(1b) "Board" means theBoard. – The North Carolina Board of Nursing.

(2) ~~"Health care provider" means any~~Health care provider. – Any licensed health care professional and any agent or employee of any health care institution, health care insurer, health care professional school, or a member of any allied health professions. For purposes of this Article, a person enrolled in a program that prepares the person to be a licensed health care professional or an allied health professional shall be deemed a health care provider.

(3) "License" means a license. – A permit issued by the Board to practice nursing as an advanced practice registered nurse, as a registered nurse nurse, or as a licensed practical nurse, including a renewal or reinstatement thereof.

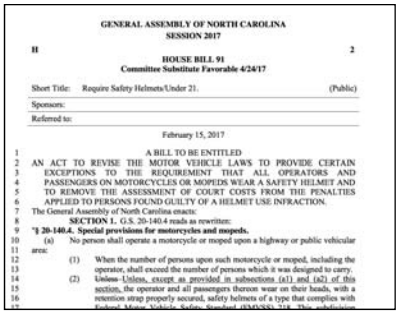
(3a) Nurse anesthesia activities. – Consist of the following activities, including clinical activities:

a. Preanesthesia preparation and evaluation of the client, including the following:
1. Performing a preoperative health assessment.
2. Recommending, requesting, and evaluating pertinent diagnostic studies.
3. Selecting and administering preanesthetic medications.

HB 88 seeks to allow NP’s, CRNA’s and Midwives to practice without supervision.

Would fundamentally change the way Health Care is delivered in NC

Defense: Motor Cycle Helmet Law



GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

H 2

HOUSE BILL 91
Committee Substitute Favorable 4/24/17

Short Title: Require Safety Helmets/Under 21. (Public)

Sponsors:

Referred to:

February 15, 2017

A BILL TO BE ENTITLED

AN ACT TO REVISE THE MOTOR VEHICLE LAWS TO PROVIDE CERTAIN EXCEPTIONS TO THE REQUIREMENT THAT ALL OPERATORS AND PASSENGERS ON MOTORCYCLES OR MOPEDS WEAR A SAFETY HELMET AND TO REMOVE THE ASSESSMENT OF COURT COSTS FROM THE PENALTIES APPLIED TO PERSONS FOUND GUILTY OF A HELMET USE INFRACTION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 20-140.4 reads as rewritten:

"§ 20-140.4. Special provisions for motorcycles and mopeds.

(a) No person shall operate a motorcycle or moped upon a highway or public vehicular area:

(1) When the number of persons upon such motorcycle or moped, including the operator, shall exceed the number of persons which it was designed to carry.

(2) Unless Unless, except as provided in subsections (a1) and (a2) of this section, the operator and all passengers thereon wear on their heads, with a retention strap properly secured, safety helmets of a type that complies with

Would have allowed persons 21 years and older to no longer be required to wear helmets

Pharmacists are practicing medicine now

Follow this post | Share | ★★★★★ Average Rating (11 ratings)

Posted by eeisman on August 24, 2017 - 09:14AM EDT

Author Specialties: Internal Medicine and Cardiology

My partner got a call from a pharmacist that a patient of hers should be taking a statin. Of course she flew off the handle and told the pharmacist that she know nothing about ther patient, has not examined the patient, the patient has refused to take a statin, and we should not get stupid calls from the drugstore. The drugest said that she was a DOCTOR of pharmacy and will report her to the authorities.

Other insanities….

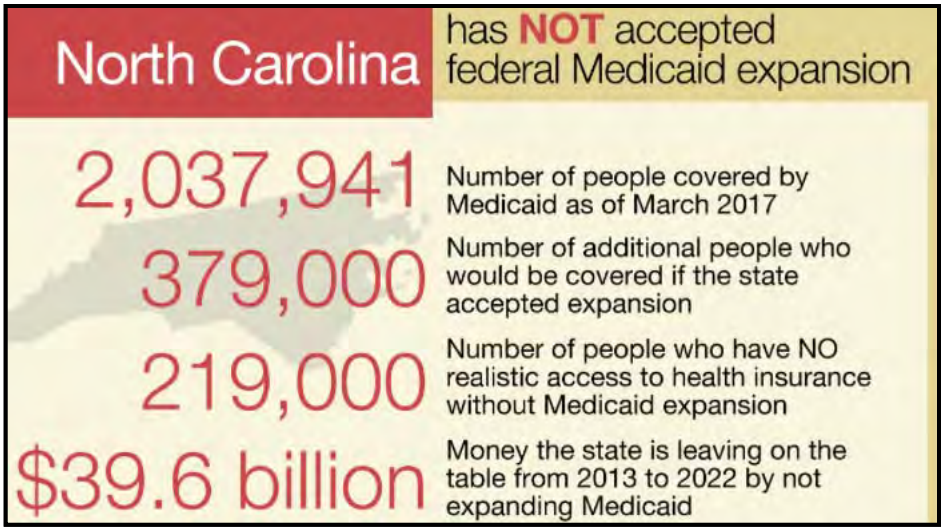
Require out of network payments to be equal to Medicare only

"Assignment of Benefits" issue…

Allow Chiropractors to do Sports Physicals…

HB 36 and HB 88 not dead….

MEDICAID EXPANSION
in NORTH CAROLINA



Carolina Cares HB 662

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

H **1**

HOUSE BILL 662

Short Title:	Carolina Cares.	(Public)
Sponsors:	Representatives Lambeth, Murphy, Dobson, and White (Primary Sponsors). *For a complete list of sponsors, refer to the North Carolina General Assembly web site.*	
Referred to:	Health Care Reform	

April 11, 2017

A BILL TO BE ENTITLED

AN ACT TO PROVIDE HEALTH COVERAGE TO RESIDENTS OF NORTH CAROLINA UNDER THE CAROLINA CARES PROGRAM.

The General Assembly of North Carolina enacts:

SECTION 1. Carolina Cares. – It is the intent of the General Assembly to facilitate

Carolina Cares HB 662

- Key Components
  - Alternative to Medicaid Expansion
  - Health Insurance for the State's Working Poor
  - Participant's required to do health maintenance activities
  - Paid for by Fed return of monies to state and tax on Hospitals (2:1 return)
  - Participant Contributions
    - 2% of household's income
    - Required

Future Unclear…..

So again…*why did I agree to do this*?....

The <u>only physician</u> in our entire General Assembly….

Health Care Crisis the #1 domestic issue facing our state and our nation

The Bottom Line…..

#1 Comment when Controversial Medical issue comes up

"I never hear from doctors unless they want something"

You have to get to know your Legislator and you MUST Contribute to their campaigns.

Treatment of Opiate Addiction: What Do We Do Now?

Michael Lang MD
Clinical Associate Professor
Internal Medicine and Psychiatry

Objectives

- Explore the extent of substance abuse disorders in the prescription drug population
- Identify problematic behaviors indicating substance abuse, drug seeking in the clinical setting
- Explain the diagnostic criteria for opiate abuse/dependence diagnosis
- Compare/contrast treatment measures for opiate dependence

What is the Risk of Addiction?

From a systematic review from 38 studies – rates of misuse, abuse, and addiction in chronic pain

Misuse rates: 21-29%

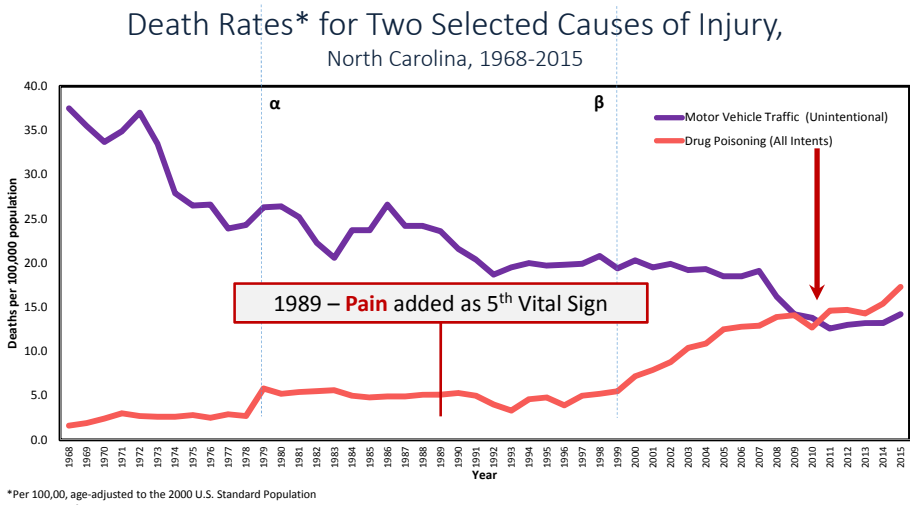
- Opioid use contrary to the directed or prescribed pattern of use, regardless of the presence or absence of harm or adverse effects.

Addiction rates: 8-12%

- Pattern of continued use with experience of, or demonstrated potential for, harm (ex: "compulsive use; continued use despite harm, and craving").

Source: Vowles KE, et al, Pain 2015

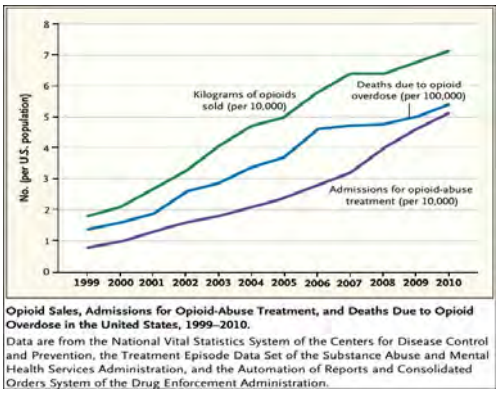
Drug Overdose Deaths on the Rise



*Per 100,00, age-adjusted to the 2000 U.S. Standard Population
α - Transition from ICD-8 to ICD-9
β – Transition from ICD-9 to ICD-10

National Vital Statistics System, http://wonder.cdc.gov, multiple cause dataset
Source: Death files, 1968-2015, CDC WONDER
Analysis by Injury Epidemiology and Surveillance Unit

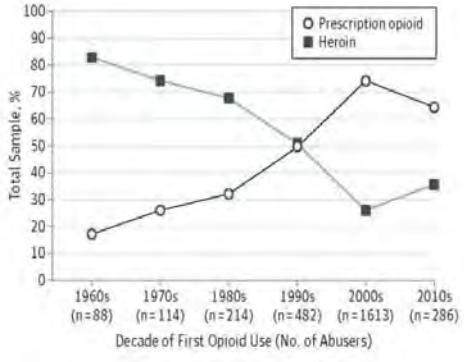
The extent of the addiction



Opioid Sales, Admissions for Opioid-Abuse Treatment, and Deaths Due to Opioid Overdose in the United States, 1999–2010.

Data are from the National Vital Statistics System of the Centers for Disease Control and Prevention, the Treatment Episode Data Set of the Substance Abuse and Mental Health Services Administration, and the Automation of Reports and Consolidated Orders System of the Drug Enforcement Administration.

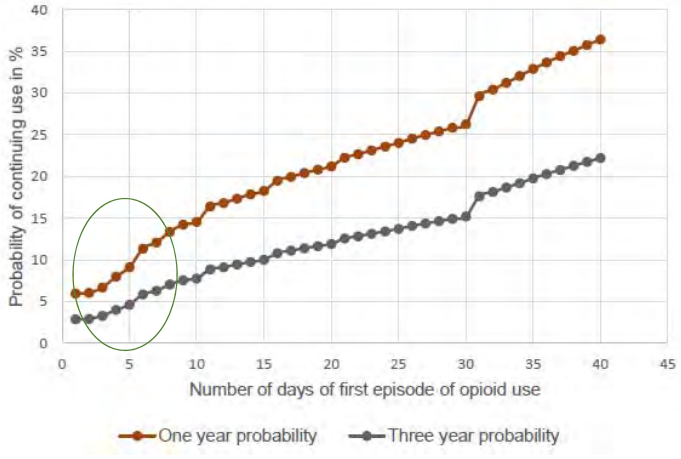
Cicero, et al, 2014



Muhuri, et al, 2013

Acute Pain Treatment Leading to Long Term Use[4]

One-and 3-year probabilities of opioid use by duration of first episode in days



CDC Weekly March 17, 2017 / 66(10); 265-269 *"Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015"*

	Lower Risk	Medium Risk	Higher Risk
Etiology of Pain	Clear/Identified		Vague/Non-specific
Substance Abuse	Negative history	Past history but stable recovery	Active abuse or addiction
Psychiatric Conditions	None	Few / Stable	Multiple / Unstable
Environment	Stable/Supportive/ Resources		Unstable/Few supports/ Few resources
Activity	Employed/Active		Unemployed/Inactive
Engagement	Active self-mgmt/ Uses non-med modalities		Poor self mgmt/ Emphasis on med only
CSRS	One prescriber/Low dose/No benzo.	One prescriber/Moderate dose/Benzos	>1 prescriber/High dose/Benzos/Irregularities
Initial Drug Screen	C/W prescription history/ No illicit drugs		Not c/w prescription history/Illicit drugs

Signs of Opioid Intoxication

Physical

- ❖Pupillary Constriction
- ❖Slurred Speech
- ❖Drowsiness
- ❖Impaired Attention
- ❖Respiratory slowing
- ❖Bradycardia
- ❖Pulmonary Edema
- ❖Coma

Psychiatric

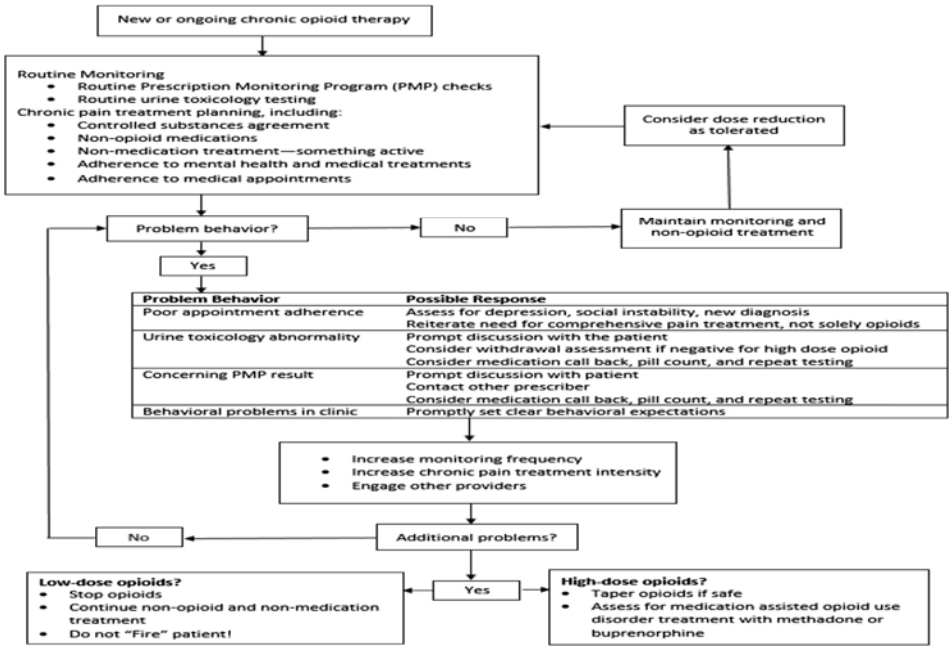
- ❖Euphoria (esp at onset)
- ❖Apathy
- ❖Dysphoria
- ❖Psychomotor agitation (onset)
- ❖Psychomotor retardation (later)
- ❖Impaired judgement

Risk Assessment Tools

Quantifying Function & Risk

- Pain scales
  - BPI, McGill Pain Questionnaire, PEG
  - Back Pain Functional Scale (BPFS)
- Psychiatric scales
  - PHQ-9, PHQ-4, GAD-7
- Substance use evaluation
  - ORT or other scales
  - ETOH use
  - Smoking
- Aggregate data represented as single number
- Consider developing predetermined treatment actions for particular scores

Passik, Weinreb. 1998



Merrill and Duncan 2014

Dependence vs. Addiction

- **Physical dependence** is characterized by tolerance and withdrawal
  - A patient can be *dependent* on a drug without being *addicted*
- **Addiction** is a primary, chronic, neurobiological disease with genetic, psychosocial and environmental influences
  - Aberrant behaviors: Loss of control, compulsive use, continued use despite harm, craving

Opioid Use Disorder (DSM-V)

- Taken in larger amounts or for longer periods
- Persistent desire/unsuccessful efforts to reduce usage
- Great deal of time spent obtaining/using opioids
- Craving, or strong desire to use opioids
- Failure to fulfill work/home obligations due to opioid use
- Lack of concern for problems due to recurrent opioid use
- Lack of interest in activities that used to be important
- Recurrent use of opioids despite hazards
- Continued use despite known problems due to opioid use

APA DSM 5 workgroup 2013

Opioid Use Disorder (DSM-V)

- Tolerance (except for those under medical supervision)
  - Markedly increased amounts to achieve desired effect
  - Markedly diminished effect with continued use at same amount
- Withdrawal (except for those under medical supervision)
  - Characteristic opioid withdrawal syndrome
  - Opioids are taken to relieve or avoid withdrawal syndrome

Mild OUD: 2-3 Criteria
Moderate OUD: 4-5 Criteria
Severe OUD: ≥6 Criteria

APA DSM 5 workgroup 2013

Communication About Addiction

- Focus on "benefits/risk" mindset
- Address patient behaviors which raise concerns about abuse (running out, "lost" scripts, etc.)
- Remember that patients may suffer from *both* chronic pain and addiction
- Intervention *based on level of risk* and concern for safety: **"I cannot responsibly continue prescribing opioids because I feel it would cause more harm than good"**
- Always offer referral to treatment
- May need to abandon risky treatment, but *not* patient.
  - Maximize non-opioid treatment options

Merrill, Duncan 2014

Does My Patient Need to Stop?

Criteria to consider discontinuing long-term opioid therapy: Inability to achieve or maintain expected pain relief or functional improvement despite dose escalation

- Intolerable adverse effects at the minimum dose that produces effective analgesia
- Persistent non-adherence with patient treatment agreement
- Deterioration in physical, emotional or social functioning attributed to opioid therapy
- Resolution or healing of the painful condition

Berna, et al. 2015

Does My Patient Need to Taper?

- Use shared decision making as much as possible in planned taper; set expectations
- Individualize tapering plans based on patient goals, concerns, and length of time on opioid therapy
- Speed of taper depends on level of concern vs. apparent risk of harm (consider detox trt at this point)
- Build up alternative pain treatment modalities
- Consider treatment for substance use disorder if present
- Communicate clearly with patient and document plan

Berna, et al. 2015

Opioid Overdose Reversal: Naloxone HCL

- Mu-opioid receptor antagonist
- Can't get 'high' from it (no potential for abuse)
- Quick acting, acts in 3-5 minutes
- Delivered via injection 0.4 mg (IM, SC, IV) or nasal 2/4 mg
- NC: no prescription required under standing
- www.naloxonesaves.org

ASAM Guideline

- Developed to guide management for opiate overdose and treatment of opiate use disorders
- Diagnostic recommendations (Part 1)
  - History and assessment of behavior
  - DSM 5 criteria
  - Quantify using a validated scale
    - Objective Opioid Withdrawal Scale (OOWS)
    - Clinical Opioid Withdrawal Scale (COWS)
  - Urine drug screens
    - Type of screen, cost are considerations

Kampman, Jarvis 2015

ASAM Guideline

- Comprehensive assessment (part 1)
- Full medical history & exam
  - Focus on Hepatitis, HIV, TB, acute trauma, pregnancy
  - Identify co-morbid psychiatric disease
  - Full substance use history
    - Concurrent use etoh, sedatives, hypnotics, anxiolytics
    - Tobacco use
- Identify facilitators and barriers to treatment

Kampman, Jarvis 2015

Social/Environmental Factors

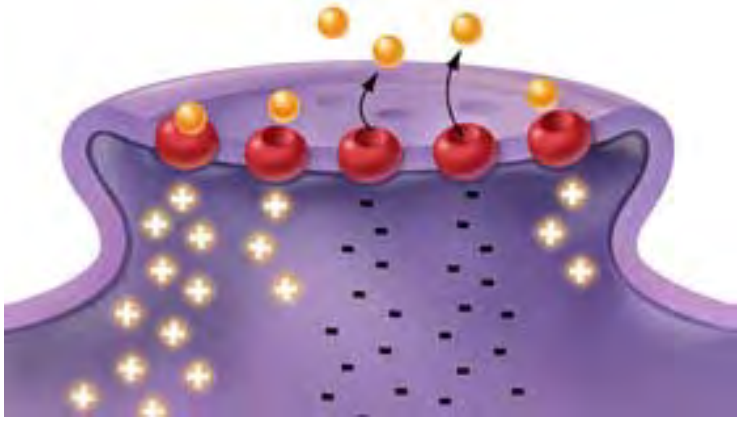
- Barriers
  - Government regulations
  - Insurance costs
  - Lack of Pharmaceutical industry interest
  - Provider education/experience
  - Treatment philosophy
  - Logistical issues
  - Lack of patients awareness

Oliva, Gordon 2011

Part 2: Select the Appropriate Level of Care

Kampman, Jarvis 2015

Part 3: Manage Opiate Withdrawal



Koston, George. 2002 Kampman, Jarvis 2015

Opiate Detoxification

- Four commonly used strategies
  - Methadone substitution
  - Clonidine
  - Clonidine/Naltrexone combination
  - Buprenorphine
- Little risk of adverse medical consequences
- Goals
  - Stabilization
  - Preparation for long term treatment

Kampman, Jarvis 2015

Opiate Detoxification

Methadone Substitution

- Long duration action
  - Smoother transition
- Start at 20-40mg/day
  - Lethal in non addicts
- Adjust dose over next few days based on symptoms
  - Adjust 10-15% per week
- Advised only for use in highly addictive items
  - Heroin, Demerol

Fishbain et al 2011

Clonidine

- Alpha receptor agonist
  - 0.1-0.3 q6-8 hrs
- Serves to reduce sympathetic output
  - Fast heart rate, BP
  - N/V/D/belly cramps
  - Sweats, chills
- Most common side effects
  - Sedation low BP
- For less addictive items
  - Codeine, Oxycodone

Kampman, Jarvis 2015

Opiate Detoxification

Clonidine/Naltrexone

- Combo addresses shortcomings of clonidine
- Shortens time to detox
  - Often 2-3 days
- First 8 hours can be risky
  - Naltrexone can cause massive w/d and lower BP
- May need meds for cramps
- Alternative to Methadone

Fishbain et al 2011

Buprenorphine

- Partial mu agonist
- Previously only by injection
  - Suboxone is outpatient mainstay
- Very Safe
  - Ceiling effect
- Blocks cravings
- Blocks rewards
- Some potential for abuse

Kampman, Jarvis 2015

Opiate Treatment After Detox

- Coping strategies for stress are critical to long term abstinence
- Many of same drugs used for detox are adjusted for abstinence
  - Methadone maintenance
  - Suboxone clinics
- All MAT options must be accompanied by case-appropriate psychosocial interventions to achieve best outcome

Kampman, Jarvis 2015

Can Psychosocial Intervention Truly Benefit?

- Kentucky Medicaid Wellcare Initiative
- 1300 members identified as high risk
  - Connected to 1 pharmacy, 1 provider, 1 care manager
- Care manager set up required engagement in community services
  - Counseling, social services, exercise
- Results
  - 50% reduction opiate prescribing
  - 35% drop in cyclobenzaprine prescribing
  - 30% drop in benzodiazepine prescribing

Walker 2017

The Therapy Component

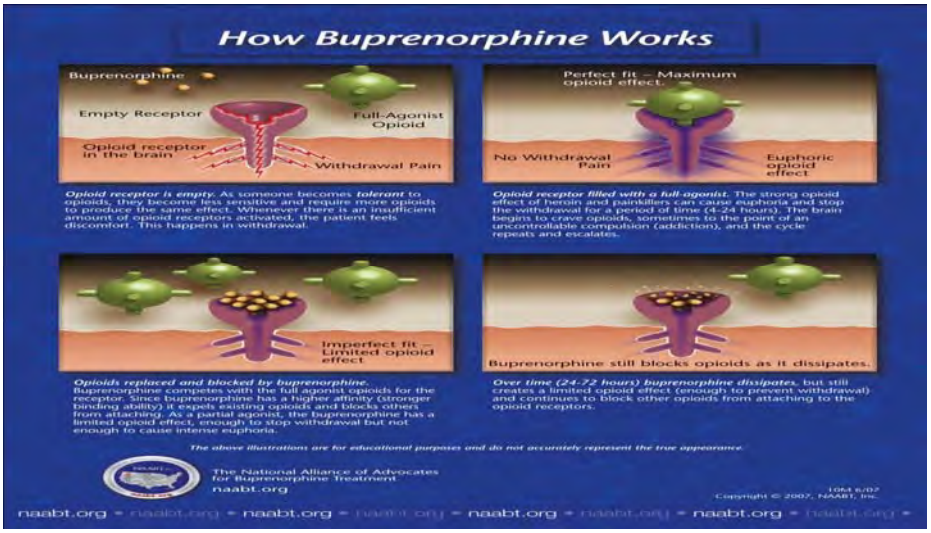
- Group & Individual Therapy
  - Critical for relapse prevention
  - Address psychological, social factors
- No one approach is best for all patients
  - In general group > individual
  - Group allows for peer support, guidance
  - Individual best for focus on co-morbid dx

Merrill, Duncan 2014

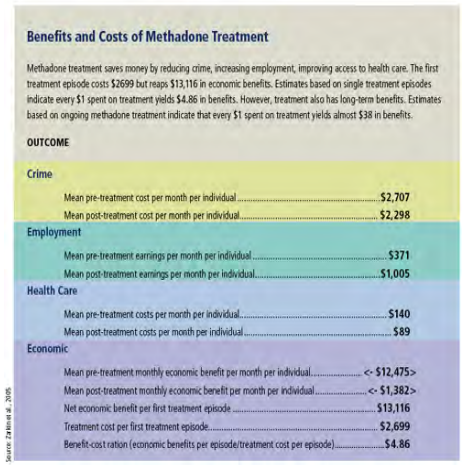
- Most evidence based interventions
  - Cognitive behavioral therapy
  - Motivational interviewing
  - Contingency management
  - Harm reduction
  - 12 step facilitation/12-step programs
  - Relapse prevention

Dutra et al 2008

Detox to Maintenance: Buprenophine



Methadone Maintenance



Benefits and Costs of Methadone Treatment

Methadone treatment saves money by reducing crime, increasing employment, improving access to health care. The first treatment episode costs $2699 but reaps $13,116 in economic benefits. Estimates based on single treatment episodes indicate every $1 spent on treatment yields $4.86 in benefits. However, treatment also has long-term benefits. Estimates based on ongoing methadone treatment indicate that every $1 spent on treatment yields almost $38 in benefits.

OUTCOME	
Crime	
Mean pre-treatment cost per month per individual	$2,707
Mean post-treatment cost per month per individual	$2,298
Employment	
Mean pre-treatment earnings per month per individual	$371
Mean post-treatment earnings per month per individual	$1,005
Health Care	
Mean pre-treatment costs per month per individual	$140
Mean post-treatment costs per month per individual	$89
Economic	
Mean pre-treatment monthly economic benefit per month per individual	<- $12,475>
Mean post-treatment monthly economic benefit per month per individual	<- $1,382>
Net economic benefit per first treatment episode	$13,116
Treatment cost per first treatment episode	$2,699
Benefit-cost ration (economic benefits per episode/treatment cost per episode)	$4.86

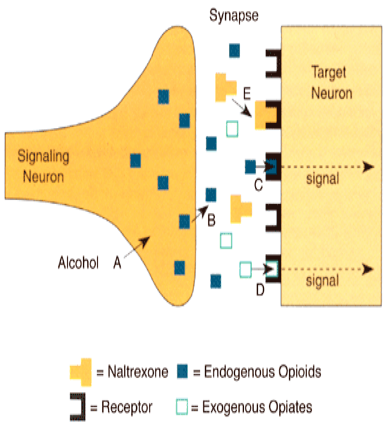
Source: Fahrenet al., 2005

Fullerton, Kim, Thomas 2014

- 40 years of clinical data
  - Still significant stigma
  - Separated from other med settings
- Duration 24-36hrs
  - Given dose to prevent w/d
  - Urine screens frequently
- Daily dosing
  - Target dose 60-120mg
  - Visit frequency on continuum
- Given in licensed facility only!

Merrill, Duncan 2014

Naltrexone

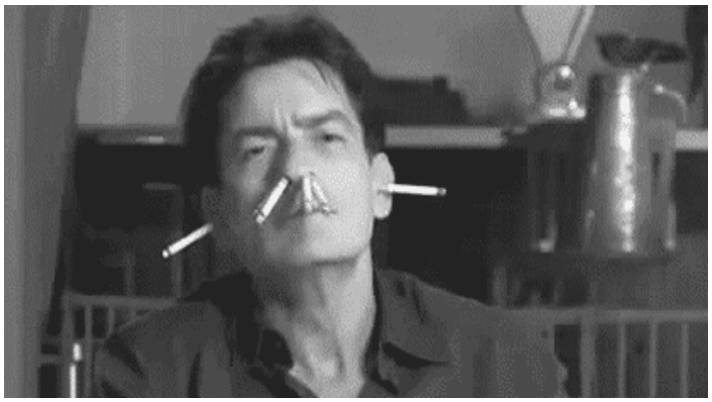


- Originally designed for opiate addiction
- Also blocks reward of alcohol effect on enkephalins
- Can see effect within 7-10 days
- 60% response rate
- Serious side effects rare
  - Liver injury
- Best choice-motivated pt, short hx of abuse
  - Extended release injection if adherence is a concern

DeWitt, et al 2005. Kampman, Jarvis 2015

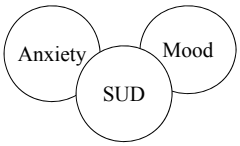
The Multimodal Team

Substance Abuse & Psychiatric Co-Morbidity



Psychiatric Co-morbidity of SA

- Most prevalent psychiatric disorders in US:
  - Substance use disorders
  - Mood disorders
  - Anxiety disorders
- These tend to merge with time
- Any & all require attention & possible treatment



Kessler, 2000

Co-Morbidity: The Chicken or The Egg?

- Given a substance dependent patient
  - Comorbidity is the norm
  - Although not absolute
- Faced with a chronic substance abuser endorsing psychiatric symptoms
  - Did drug induce the problem?
  - Did problem predate the drugs?
    - Self medicating
- First verify safety
  - Substance treatment facility vs. behavioral health unit
- Monitor carefully for drug-drug interactions
- Consider ACT teams for these patients

Kampman, Jarvis 2015

Substance Abuse & Chronic Pain

- Can be very difficult to tease out
- Standard is to treat objectively- verify diagnosis
  - Exam findings
  - Labs, X-Rays
- Take substance abuse history into account
  - NSAIDs, acetaminophen if feasible
  - Ideally stop buprenorphine and use high potency opiate
    - If needed realize dosing will need to be higher given tolerance
  - If active opiate use disorder & not in treatment-methadone, buprenorphine
- Allowable with close scrutiny-especially if outpatient setting
  - Pain contracts
  - Frequent re-evaluation and treatment

Kampman, Jarvis 2015

Special Population: Pregnancy

- Medical evaluation (status of pregnancy) and psychosocial assessment 1st
  - GYN involved early
  - HIV, Hepatitis, other STDs
- Position on reporting substance use in pregnancy
- Given pregnancy proceed to maintenance rather than withdrawal management
  - Methadone preferred
  - Buprenorphine second line
  - Avoid naloxone unless in setting of OD
- Have a low threshold for hospitalization especially in 3rd trimester

Special Population: Adolescents

- Psychosocial treatments are mandatory and vital
  - Should be instituted first and maintained
  - Often teens are seen in more specialized facilities with multimodal services
- The full spectrum of pharmacotherapy options should be considered
  - Methadone and buprenorphine included
- A special focus of health maintenance should be STD risk reduction

Kampman, Jarvis, 2015

Special Population: Criminal Justice System

- MAT has been shown to be effective in correctional setting
- Just as in other setting psychosocial treatment should work as adjunct to MAT
- No one medication option is show as superior or safer
- MAT should be maintained especially once paroled
  - Should be started minimum 30 days prior to release
  - Structured follow-up must be in place

Kampman, Jarvis 2015

New Horizons- Separating Analgesia from Addiction

NKTR-181

- Phase 3 trials currently for mod-severe chronic pain
- Low permeability/slow entry across BBB
  - Reduced effect on dopamine release
- 42 recreational drug users
  - 3 doses of NKTR vs. Oxycodone 40mg
    - Drug liking score sig lower for all but 400mg dose

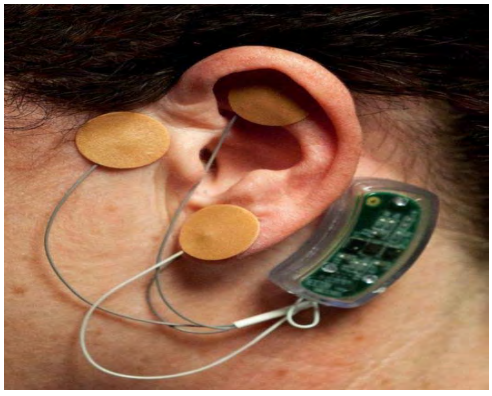
CR845

- Selectively activates K-opioid receptor (KOR)
  - No activity at mu receptor
  - Can't cross BBB
- Given IV for lap hysterectomies and bunionectomies
- 4 way x-over design for 44 recreational drug users
  - Placebo, 5mcg/kg CR8, 15mch/kb CR8, 0.5mg/kg Pentazocine
  - Drug liking scores sig best for Pentazocine, placebo and CR8 essentially equal

Bender, July 2017

New Horizons- NSS-2 Bridge Neurostimulator

- FDA approved November 2017
  - 73 patients 5 treatment centers
  - Withdrawal scale scores dropped 63% after 20 min of use compared to sham
    - 88% pts successfully moved to MAT
  - Based on concept of auricular acupuncture
- Intended for short term use only
  - Battery dies after 120 hours
  - 2nd Rx for those transitioning off methadone
- No significant adverse effects for duration of therapy



Zagorski 2018

Clinicians should consider offering naloxone to which of the following patient groups?

- History of opioid overdose
- History of substance use disorder
- Higher opioid dosages (≥50 MME/day)
- Any dose of an opioid + benzodiazepine
- All of the above

Coffin P, et al 2016

Chronic pain patients with current opioid addiction can get the best benefit from which of the following interventions?

- Detoxification from opioids followed by opioid analgesic therapy
- Buprenorphine treatment along with behavioral interventions
- Methadone taper followed by naltrexone
- Benzodiazepine and SSRI combination

Kampman, Jarvis 2015

A Few Final Points

- Opioid use disorder is a chronic, potentially fatal, but treatable condition associated with a significant genetic predisposition that is on the rise.
- Keep diagnostic criteria in mind and engage patients early
- MAT with buprenorphine, methadone or naltrexone reduces mortality and improves health & social outcomes
- Federal and state regulations draw sharp distinction between use of opioids to treat pain *vs*. opioid use disorder.
- DEA-registered MD, PA, NP may access free training to qualify for DATA 2000 waiver to prescribe buprenorphine for opioid use disorder.

Thank You For Your Attention

Questions or Comments

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Non-Insulin Therapy for Type 2 Diabetes

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Disclosure

- No conflict of interest
- Residency: Internal Medicine at East Carolina University
- Fellowship: Diabetes fellowship at East Carolina University

Objectives

- Discuss the rationale of non-insulin therapy
- Review and compare two common diabetes guidelines
- Explore the different approaches for common clinical scenarios
- Review when and how to initiate newer classes

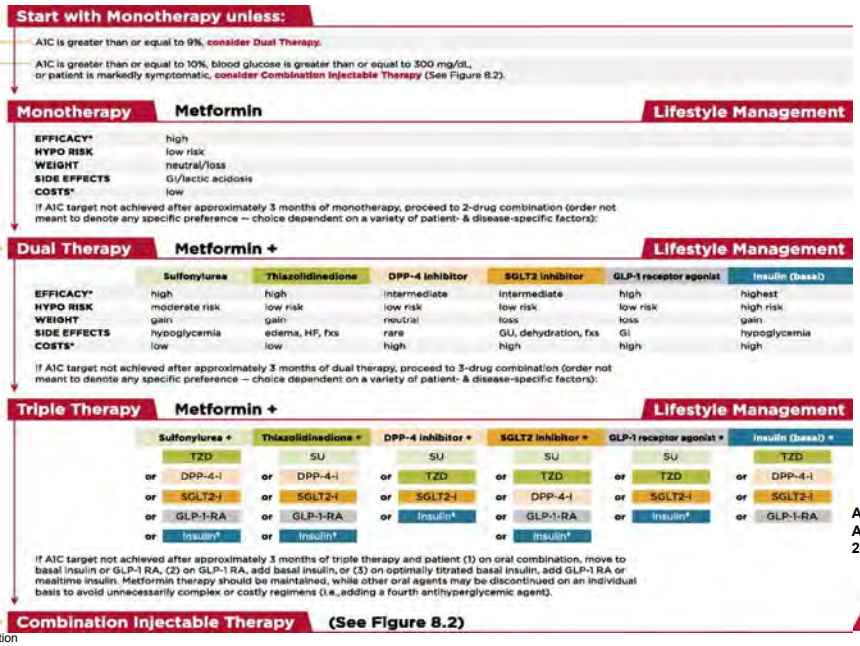
Insulin Resistance

- **Insulin resistance** in **muscle** and **liver** associated with relative **β-cell failure** (collectively called **"Triumvirate"**) represent the core pathophysiologic defects in type 2 diabetes [1].
- The United Kingdom Prospective Diabetes Study (UKPDS 33) [2] concluded that intensive blood-glucose control by either sulfonylurea or insulin substantially decreased the risk of microvascular complications but not macro-vascular disease in patients with type 2 diabetes.

That is why this lecture is important!!

[1] Diabetes 2009; 58: 773. [2] Lancet 1998; 352: 837.

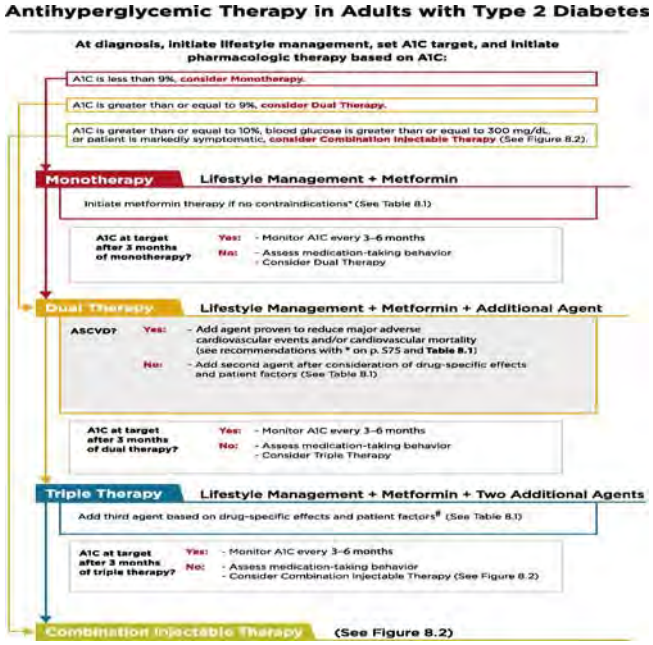
ADA Guideline 2017



American Diabetes Association Dia Care 2017;40:S64-S74

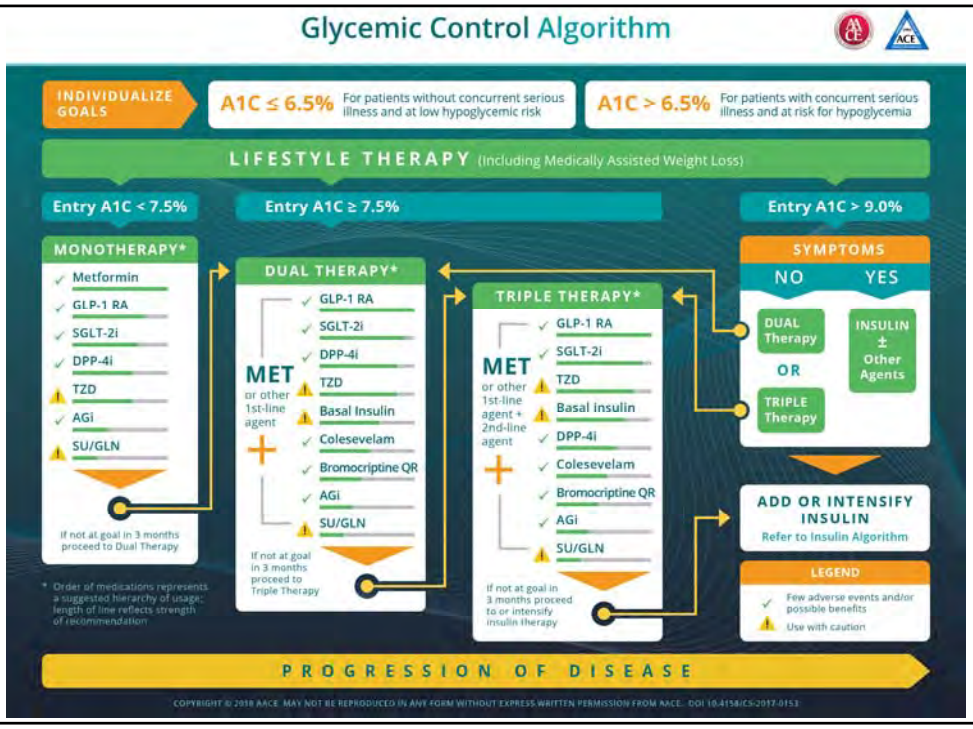
American Diabetes Association.

ADA Guideline 2018



American Diabetes Association Dia Care 2018;41:S73-S85

American Diabetes Association.



Endocrine Practice 2018; 24: 91

Case 1

- A 45-year-old Male with no significant past medical history who is presenting to clinic today for an annual physical exam.
- Physical exam shows acanthosis nigricans and multiple skin tags.
- Hemoglobin **A1c** is **8.5%** (repeat is 8.4%).
- Patient is **not on any medication** for his diabetes.

What is the most appropriate next step in management?

Management of newly-diagnosed type 2 diabetes

ADA guideline	AACE/ACE guideline
Hemoglobin A1c is less than 9%	Hemoglobin A1c is more than or equal 7.5%
One agent Preferably Metformin	**Two agents** Metformin AND preferably GLP-1 RA

American Diabetes Association Dia Care 2018;41:S73-S85

Endocrine Practice 2018; 24: 91

Case 2

- A 45-year-old Female who has a history of recently diagnosed type 2 diabetes who is presenting to clinic for follow up.
- Hemoglobin **A1c** is **8.0% (3-months ago was 8.5%).**
- Patient is **on maximally tolerated dose of metformin extended release.**

What is the most appropriate next step in management?

Add-on therapy to metformin

ADA guideline	AACE/ACE guideline
Diabetes is uncontrolled On maximally tolerated metformin	Diabetes is uncontrolled On maximally tolerated metformin
Does the patient have ASCVD?	Add an agent as suggested by the hierarchy order
No ➔ Add an agent from the six preferred groups	Preferably add GLP-1 RA then SGLT-2i

American Diabetes Association Dia Care 2018;41:S73-S85

Endocrine Practice 2018; 24: 91

Case 3

- A 46-year-old Female with history of type 2 diabetes, **coronary artery disease**, **hypertension**, **dyslipidemia**, and **obesity**.
- Her hemoglobin A1c 3 months ago was 7.5% but today is 7.8%.
- Patient is on maximally tolerated dose of metformin.

Is this patient different from the previous case?

What is the most appropriate next step in management?

Add-on therapy to metformin

ADA guideline	AACE/ACE guideline
Diabetes is uncontrolled On maximally tolerated metformin	Diabetes is uncontrolled On maximally tolerated metformin
Does the patient have ASCVD?	Add an agent as suggested by the hierarchy order
Yes ➔ Consider adding an agent with proven cardiovascular benefit	Preferably add GLP-1 RA or SGLT-2i

American Diabetes Association Dia Care 2018;41:S73-S85

Endocrine Practice 2018; 24: 91

Cardiovascular safety studies for GLP-1 RA

Trial (# of participants)	Groups (median fu)	Characteristics	MACE outcome	CV mortality	All-cause mortality	hHF	Occurrence of MI or stroke
LEADER (9340) [1]	Liraglutide vs placebo (3.8 years)	High risk for cardiovascular disease (81.3% had CV disease)	Lira: 608/4668 (13%) Plac: 694/4672 (14.9%) **HR 0.87 (0.78 – 0.97)**	Lira: 219 (4.7%) Plac: 278 (6%) **HR 0.78 (0.66 – 0.93)**	Lira: 381 (8.2%) Plac: 477 (9.6%) **HR 0.85 (0.74-0.97)**	Lira: 218 (4.7%) Plac: 248 (5.3%) HR 0.87 (0.73-1.05)	No differences were not significant
SUSTAIN-6 (3297) [2]	Semaglutide vs placebo (2.1 years)	High risk for cardiovascular disease (83% had CV disease)	Sema: 108/1648 (6.6%) Plac: 146/1649 (8.9%) **HR 0.74 (0.58 – 0.95)**	Sema: 44 (2.7%) Plac: 46 (2.8%) HR 0.98 (0.65 – 1.48)	Sema: 62 (3.8%) Plac: 60 (3.6) HR 1.05 (0.74-1.5)	Sema: 59 (3.6) Placebo: 54 (3.3) HR 1.11 (0.77-1.61)	Significantly lower incidence for non-fatal stroke
EXSCEL (14,752) [3]	**Exenatide** vs placebo (3.2 years)	With or without cardiovascular disease (73.1% had CV disease)	Exen: 839/7356 (11.4%) Plac: 905/7396 (12.2%) **HR 0.91 (0.83 – 1.00)**	Exen: 340 (4.6%) Plac: 383 (5.2%) HR 0.88 (0.76 – 1.02)	Exen: 507 (6.9%) Plac: 584 (7.9%) **HR 0.86 (0.77-0.97)**	Exen: 219 (3.0%) Plac: 231 (3.1%) HR 0.94 (0.78-1.13)	No differences were not significant
ELIXA (6068) [4]	Lixisenatide vs placebo (25 months)	Had acute coronary event within 180 days before screening	Lixi: 406/3034 (13.4%) Plac: 399/3034 (13.2%) HR 1.02 (0.89 – 1.17)	Lixi: 156 (5.1%) Plac: 158 (5.2%) HR 0.98 (0.78 – 1.22)	Lixi: 211 (7.0%) Plac: 223 (7.4%) HR 0.94 (0.78-1.13)	Lixi: 122 (4.0%) Plac: 127 (4.2%) HR 0.96 (0.75-1.23)	No differences were not significant

[1] NEJM 2016; 375: 311. [2] NEJM 2016; 375: 1834. [3] NEJM 2017; 377: 1228. [4] NEJM 2015; 373: 2247.

Cardiovascular safety studies for SGLT-2i and TZD

Trial (# of participants)	Groups (average fu)	Characteristic	MACE Outcome	CV mortality	All-cause mortality	hHF	Occurrence of MI or stroke
EMPAREG (7020) [1]	Empagliflozin vs placebo (3.1 years)	Established CV (99%) disease	Empa: 490/4687 (10.5%) Plac: 282/2333 (12.1%) **HR 0.86 (0.74-0.99)**	Empa: 172 (3.7%) Plac: 137 (5.9%) **HR 0.62 (0.49 – 0.77)**	Empa: 269 (5.7%) Plac: 194 (8.3%) **HR 0.68 (0.57-0.82)**	Empa: 126 (2.7%) Plac: 95 (4.1%) **HR 0.65 (0.5-0.85)**	No significant difference between groups
CANVAS CANVAS-R (10,142) [2]	Canagliflozin vs placebo (188.2 weeks)	High CV risk (65% had CV disease)	**HR 0.86 (0.75 – 0.97)**	HR 0.87 (0.72 – 1.06)	HR 0.87 (0.74-1.01)	**HR 0.67 (0.52-0.87)**	No significant difference between groups
PROactive (5238) [3, 4]	Pioglitazone vs placebo (34.5 months)	Extensive macro-vascular disease	Pio: 257/2605 (9.9%) Plac: 313/2633 (11.9%) **HR 0.82 (0.70-0.97)**	Pio: 127 (4.9%) Plac: 136 (5.2%) HR 0.94 (0.74-1.20)	Pio: 177 (6.8%) Plac: 186 (7.1%) HR 0.96 (0.78-1.18)	Pio: 149 (6%) Plac: 108 (4%) **p=0.007**	**Pio reduced the risk of recurrent stroke [5] and recurrent MI [6].**

[1] NEJM 2015; 373: 2117. [2] NEJM 2017; 377: 644. [3] Lancet 2005; 366: 1279. [4] Am Heart J 2008; 155: 712. [5] Stroke 2007; 38: 865. [6] J Am Coll Cardiol 2007; 49: 1772.

Bonus question

Intensification of diabetes medications was investigated in a retrospective analysis published in 2011 involving 12,566 patients with type 2 diabetes who were uncontrolled on metformin monotherapy.

According to this article, how long did it take to intensify treatment in uncontrolled patients?

- 3-6 months
- 9-12 months
- 14 months
- 16 months

[1] Diabetes Obes Metab 2011; 13: 765.

When and how to initiate Metformin

Initiation of metformin [1]:

- Start metformin 500 mg once or twice daily with meals for 1 week
- After a week, if no GI side effects, increase metformin to 1000 mg twice daily
- If GI side effects appear as doses advanced, decrease to previous lower dose.

- **My way** ➔ One pill of the metformin 500 mg XR once weekly to a maximum dose of 1000 mg twice daily or to a maximally tolerated dose without GI side effects

[1] Diabetes Care 2009; 32: 193

When and how to initiate GLP-1 RA

	GLP-1 RA
Reasons to consider this group	• Reduction of hemoglobin A1c (high potency) • No hypoglycemia (except if added to SU/insulin) • Weight loss • Cardiovascular benefit (particularly with Liraglutide and Semaglutide) • Some are once weekly (Dulaglutide, Exenatide ER, and Semaglutide)
Drug-specific and patient factors to consider	• GI side effects (Nausea, vomiting, and diarrhea) • ? Pancreatitis • Avoid in patients with personal or family history of medullary thyroid carcinoma or multiple neoplasia syndrome type 2 (MEN 2) • Injectable and expensive
Compounds	• **Liraglutide:** Start 0.6 mg once daily for 1 week ➔ increase to 1.2 mg daily • If remains uncontrolled, may increase to 1.8 mg once daily. • No renal or hepatic dose adjustment. There is limited data in renal patients. • **Semaglutide:** Start 0.25 mg once weekly for 4 weeks to be increased to 0.5 mg once weekly. • If remains uncontrolled, may increase to 1 mg once weekly. • **Exenatide extended release:** 2 mg once weekly • CrCl <30 mL/min or ESRD: Not recommended • **Dulaglutide:** Start 0.75 mg once weekly. • If remains uncontrolled, may increase to 1.5 mg once weekly. • No renal adjustment • Exenatide twice daily: Start 5 mcg twice daily within 60 minutes prior to meals. May increase to 10 mcg after one month. • Lixisenatide: Start 10 mcg qd for 14 days then increase to 20 mcg qd. • GFR <15 mL/minute/1.73 m^2: Not recommended.

[1] Diabetes Care 2018; 41 (suppl 1): S73. [2] Endocrine Practice 2018; 24: 91

When and how to initiate SGLT-2i

	SGLT-2i
Reasons to consider this group	• Reduction of hemoglobin A1c (intermediate potency) • No hypoglycemia (except if added to SU/insulin) • Weight loss • Cardiovascular benefit (empagliflozin and canagliflozin)
Drug-specific and patient factors to consider	• Dehydration and orthostatic hypotension • Genital infections • Increased bone fracture • Risk for amputation with canagliflozin • Less common: euglycemic DKA and urosepsis • Relatively expensive

Compound (s)	• **Empagliflozin:** Start 10 mg once daily. May increase to 25 mg once daily
	  • GFR <45 mL/min/1.73 m²: Use is not recommended
	• **Canagliflozin:** Start 100 mg once daily before first meal. May increase to 300 mg once daily
	  • GFR 45-59 mL/min/1.73 m²: Maximum dose is 100 mg once daily
	  • GFR <45 mL/min/1.73 m²: Use is not recommended
	• **Dapagliflozin:** Starting 5 mg once daily. May increase to 10 mg once daily
	  • GFR <60 mL/min/1.73 m²: Use is not recommended
	• Ertugliflozin: Starting 5 mg once daily. May increase to 15 mg once daily
	  • GFR <60 mL/min/1.73 m²: Use is not recommended

[1] Diabetes Care 2018; 41 (suppl 1): S73. [2] Endocrine Practice 2018; 24: 91

Case 4

- A 46-year-old man who has **no previous past medical history** who is seen in clinic today for a routine physical. He is **asymptomatic**.
- His **hemoglobin A1c checked today in clinic is 11%** (repeat is 11.1%).

What is the most appropriate next step in management?

Therapy for hemoglobin A1c >9%

ADA guideline

A1c is greater than or equal 10%, blood glucose is greater than or equal 300 mg/dL, or patient is markedly symptomatic

↓

Consider combination injectable therapy

AACE/ACE guideline

A1c is greater than 9%

↓

Is the patient symptomatic?

↓

No ➔ May consider dual or triple non-insulin therapy

American Diabetes Association Dia Care 2018;41:S73-S85

Endocrine Practice 2018; 24: 91

Case 5

- A 45-years-old Male with history of type 2 diabetes, hypertension, dyslipidemia, and coronary artery disease.
- He is taking **metformin XR 500 mg as two pills twice daily**, **insulin glargine 120 units daily**, and **insulin aspart 40 units three times daily before meals**.
- Weight is 100 kg. Insulin/weight is 2.4 units/kg.
- **Hemoglobin A1c is 10%.**

What is the next step in management?

Add-on therapy to insulin

ADA guideline

Suboptimal glycemic control requiring large insulin doses

Adjunctive use of TZD or SGLT-2i may help to improve control and reduce the amount of insulin needed

American Diabetes Association Dia Care 2018;41:S73-S85

Summary

- When metformin fails, we need to evaluate ASCVD risk and consider agents with established data to reduce cardiovascular disease.
- Drugs with proven CV benefits are:
  - Empagliflozin and canagliflozin
  - Liraglutide and semaglutide (exenatide ER had a trend but were not significant)
  - Pioglitazone (however, caution while using given heart failure)
- Non-insulin agents can be considered even with severely uncontrolled diabetes (ie hemoglobin A1c >9%).
- Non-insulin agents can be added at almost all stages of the disease even while on insulin.

Questions?

- A Quote from Egypt

A difference of opinion does not spoil relations

- A Quote by Aristotle

The more you know, the more you know you don’t know