PRIMARY CARE SKILLS FOR PSYCHIATRISTS

Medical and Psychiatric Provider Summit
Washington D.C.
August 13th, 2014

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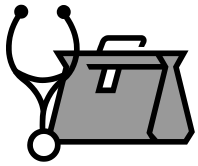

Primary Care Skills for Psychiatrists

a collaboration of:

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Meet Bill…

- 46 yo single, white, male w/ schizophrenia
- Stable psychiatrically w/
  - Intensive case management
  - Long acting Risperidone shot
  - Olanzapine 20mg (added s/p his hospitalization 18m ago)
- Eats at local fast food restaurants
- Smokes cigarettes and marijuana
- Sees his psychiatrist monthly but refuses to see a primary care doctor

Today in clinic…

- Looks like Bill has been gaining weight
- Currently 287lbs w/ BMI of 37.9
- On chart review, you see he was 210lbs b/f starting Olanzapine w/ BMI of 27.7 (18 mo ago)
- You ask yourself:
  - Just how bad is his BMI?
  - What can I do to help Bill with his weight?

OBESITY

Edited from slides prepared by:
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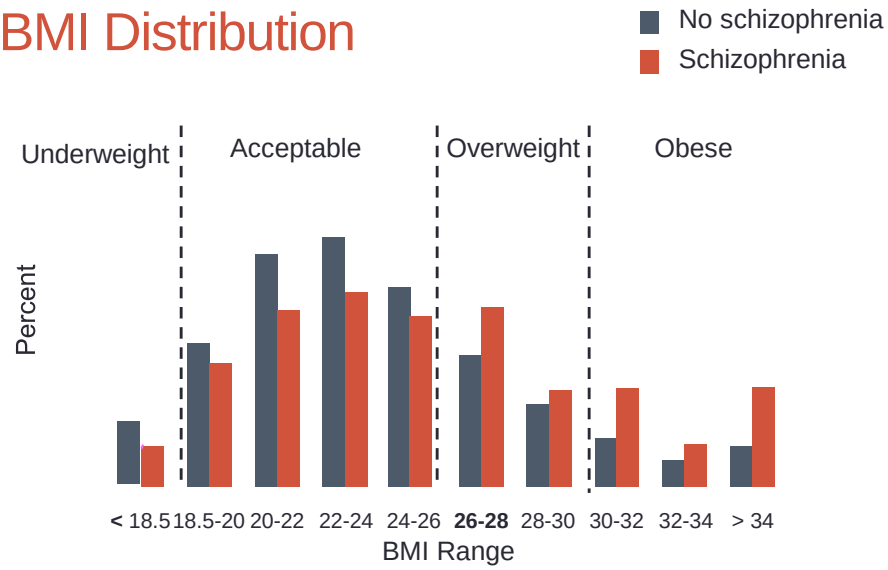
The Epidemic of Obesity

- 68% of US adults are overweight; 35.7% are obese
- 2nd leading cause of preventable death
- $147 billion in medical costs

http://www.cdc.gov/obesity/data/adult.html

BMI Distribution



Allison DB et al. J Clin Psychiatry. 1999;60:215-220.

Management of Obesity

Interventions

- Behavioral / Lifestyle Modification
- Pharmacologic
- Surgical

SMI Obesity-Related Conditions

- Dyslipidemia
  - 45% with TG > 150 mg/dl;
  - 35% with cholesterol > 200
- Diabetes
  - 33 % with Impaired Fasting Glucose
- Hypertension
  - 51% with BP > 130/85

Correll CU et al. Psychiatr Serv 2010; 61(9): 892-898

What Can Psych Providers Do?

Behavioral Strategy	Pharmacologic Treatment
• Patient Education • Behavioral Counseling • Peer support • Lifestyle Modification	• Antipsychotic Switching • Pharmacologic treatment of obesity

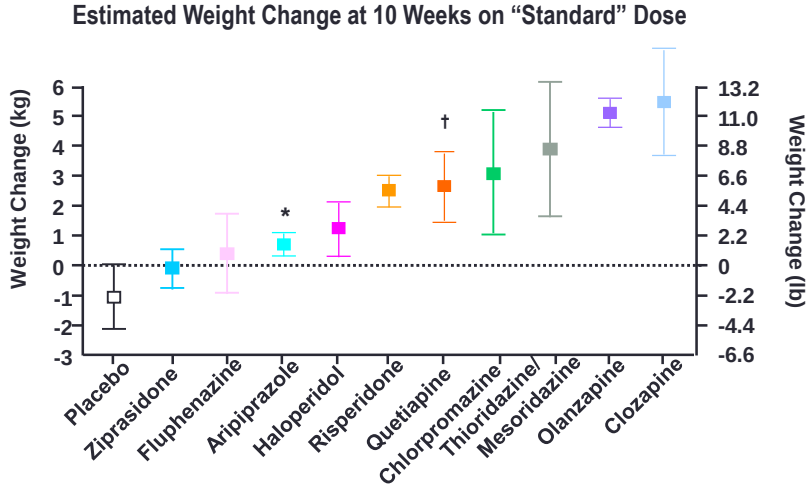
Nonpharmocologic Treatment Options

- Follow medication screening guidelines (monitoring BMI, abdo circ, lipids, glucose)
- Behavioral Weight Management
  - Encourage decreased caloric intake
  - Encourage increased physical activity
  - Share CBT strategies to reinforce positive changes in dietary habits and activities

Pharmacological Considerations

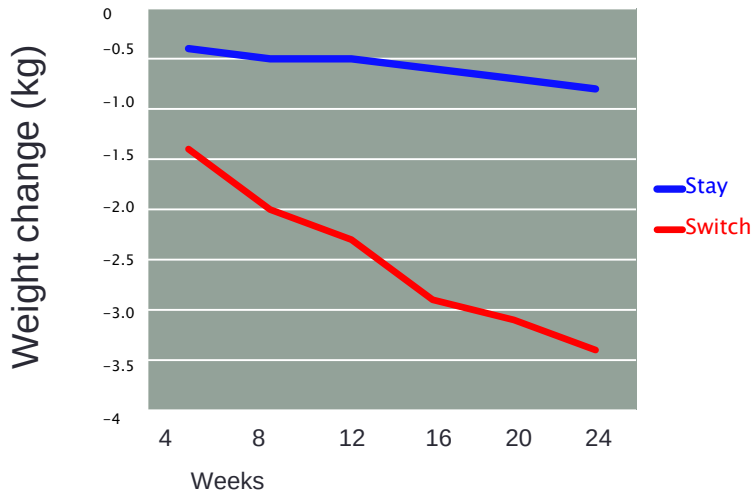
- Ideally, choosing a weight neutral medication when applicable
- Reevaluate need for medications that are contributing to weight gain frequently
- Common culprits:
  - AD: Amitriptyline, Paroxetine, Mirtazipine
  - MS: Valproate, Lithium, Gabapentin, Carbamazepine
  - AP: Clozapine, Olanzapine, Quetiapine, Risperidone, Thioridazine, Chlorpromazine

Mean Weight Change With Antipsychotic Medications



*4–6 week pooled data (Marder SR et al. *Schizophr Res*. 2003;1;61:123-36; †6-week data adapted from Allison DB, Mentore JL, Heo M, et al. *Am J Psychiatry*. 1999;156:1686-1696; Jones AM et al. ACNP; 1999.

Switch to Reduce Metabolic Risk (CAMP)



Stroup TS, et al. Am J Psychiatry 2011; 168: 947-956

Pharmacotherapy

Agent	Evidence in schizophrenia
Orlistat	+/-
Phenteramine-Topiramate	Topiramate: 5 kg weight loss
Lorcaserin	None
Metformin	12 clinical trials: BMI decrease of 1.82 (1.44, 2.19)
Naltrexone	+

Das C, et al. Annals of Clinical Psychiatry 2012; 24(3): 225-239

Bariatric Surgery

- Indications based on current guidelines[1]
  - Class III obesity (BMI > 40 kg/m2)
  - Class II obesity (BMI = 35-39.9) with medical complication (DM, Sleep apnea)
  - Class I obesity with poorly-controlled T2 DM
- Dramatic increase in the past two decades[2]
  - 350,000 procedures in 2008
- Mean BMI of those having procedures is > 45[3]

[1] *NHLBI, NIH Publication No. 98-4083, 1998*
[2] *Samuel I et al Am J Surg 2006; 192(5):657-662*
[3] *Buchwald H et al JAMA 2004; 292 (14): 1724-1737*

Bariatric Surgery Procedures

Adjustable Gastric Band (AGB)

Sleeve Gastrectomy (SG)

Roux-en-Y Gastric Bypass (RYGB)

Unique Considerations

- Limited data about the efficacy and tolerability of surgery in SMI population
- Preliminary results support outcomes comparable to individuals without serious mental illness (Hamoui et al. 2004; Ahmed et al. 2013).
- How assess for appropriateness of surgery?
  - No uniform guidelines
  - Important to stress maintenance of weight loss & lifestyle change vs. quick fix
- Considerations regarding psychiatric illness after bariatric surgery
  - Impact of fat malabsorption on medication dose
  - Impact on cognition and functional status
  - Impact of body image and altered social role

Steinmann WC et al. Obes Surg 2011; 21: 1323-1329

Summary

- Individuals with SMI are at greatly increased risk of obesity
- Mental health providers should consider providing treatment for obesity
  - There is substantial data for efficacy of lifestyle modification for weight loss in SMI
  - Switching to antipsychotic medications with lower metabolic liability should be considered whenever possible
- Bariatric surgery is the treatment of choice for class III obesity, with substantial evidence of long-term health benefits

So… For Bill's BMI of 37

- Consider switching his olanzapine
- Encourage lifestyle modifications
  - Ask him to walk to his CMHC visits
  - Stress substituting soda pop with low or no calorie beverages
  - Encouraging cooking or healthy options at the fast food restaurant
- You decide to do some lab work
  - Non fasting glucose 194
  - HbA1C 6.1%
- You wonder:
  - Does Bill have diabetes?
  - What can be done to help Bill avoid further medical complications in the future?

DIABETES

Edited from slides prepared by:
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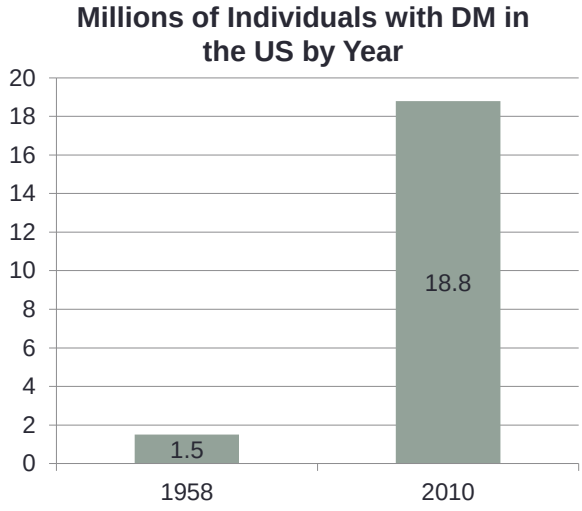
Epidemiology of DM: A Growing Problem



Diabetes in SMI

Bipolar Disorder	Schizophrenia
• 8-17% • RR 1.5-2	• 10-15% • RR 2

De Hert, World Psychiatry 2009;8:15-22

Which kind?

Type 1	Type 2
• 5 to 10%	• 90 to 95%
• Age < 30	• Age > 40
• Autoimmune mediated	• Insulin resistance
• Destruction of islet cells	• Inadequate insulin secretion
• Absolute insulin deficiency	• Complex interaction of genes and environment
• Low C peptide	• Normal/High C Peptide

Risk Factors for Diabetes

- **Overweight adult** with one or more of the following:
  - **Family history**
  - **Race/Ethnicity**
  - **History of gestational diabetes**
  - **Hypertension**
  - **Abnormal lipid levels**
  - **IGT or IFG**
  - **Signs of insulin resistance**
  - **Vascular disease**
  - **Inactive lifestyle**
- **If none of above**, age over 45

Risk Factors for Diabetes: SMI

Risk factors for Diabetes	Schizophrenia % (RR)	Bipolar disorder % (RR)
Obesity	**45-55 (1.5-2)**	**21-49 (1-2)**
Hypertension	**19-58 (2-3)**	**35-61 (2-3)**
Dyslipidemia	**25-69 (<=5)**	**23-38 (<=3)**
Metabolic syndrome	**37-63 (2-3)**	**30-49 (1.5-2)**

De Hert et al. World Psychiatry. 2011 February; 10(1): 52–77.

Risk Factors for Diabetes: SMI

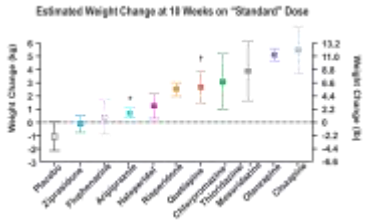
Drug	Weight Gain	Risk for Diabetes
Clozapine (Clozaril)	+++	++
Olanzapine (Zyprexa)	+++	++
Risperidone (Risperdal) Paliperidone (Invega)	++	+/-
Quetiapine (Seroquel)	++	+/-
Aripiprazole* (Abilify)	+/-	-
Ziprasidone* (Geodon)	+/-	-

ADA/APA Consensus Conference on Antipsychotic Drugs

Risk Factors for Diabetes: SMI

Weight Gain with Newer Atypical Antipsychotics

- Short term:
  - Iloperidone +2.50 kg
  - Paliperidone +1.24 kg
  - Asenapine +1.16 kg
  - Lurasidone +0.49 kg
- Long term:
  - Paliperidone +0.50 kg
  - Asenapine +1.30 kg



Slide

De Hert et al CNS drugs 26.9 (2012):733-759.

Diabetes and Antipsychotics: Is it all about weight gain?

- 20-25% of antipsychotic-associated DM2 *does not* appear to be due to weight gain
- Antipsychotics can affect beta-cell function without weight gain (Houseknecht et al, 2005)
- Insulin resistance in non-obese tx w/ olanzapine and clozapine (Henderson 2006)

Screening:

- Screen at baseline, 12 weeks and 12 months on anyone started on atypical antipsychotic.
- Screen every 1 to 3 years IN THOSE AT RISK:
  - Sustained Blood pressure 135/80
  - hypertension or hyperlipidemia
  - Risk factors: Gestational diabetes, over 45 years old, BMI >25, family history, sedentary lifestyle, acanthosis nigricans, PCOS, clozapine and olanzapine.
- Risk calculator: http://www.diabetes.org/diabetes-basics/prevention/diabetes-risk-test/

Diabetes: Diagnosis

Random glucose >200 with symptoms

polyuria, polydipsia, polyphagia, weight loss

OR

	A1C (percent)	Fasting Plasma Glucose (mg/dL)	Oral Glucose Tolerance Test (mg/dL)
Diabetes	6.5 or above	126 or above	200 or above
Prediabetes	5.7 to 6.4	100 to 125	140 to 199
Normal	About 5	99 or below	139 or below

American Diabetes Association. Diabetes Care. 2012;35(Supp 1):S12, table 2.

Nonpharmacologic Treatment

- **Diet**
- **Exercise**
- **Treatment** of comorbid conditions
- **Foot care**
- **Dilated eye exam**
- **Smoking** cessation
- **Immunizations**

Pharmacologic Treatment

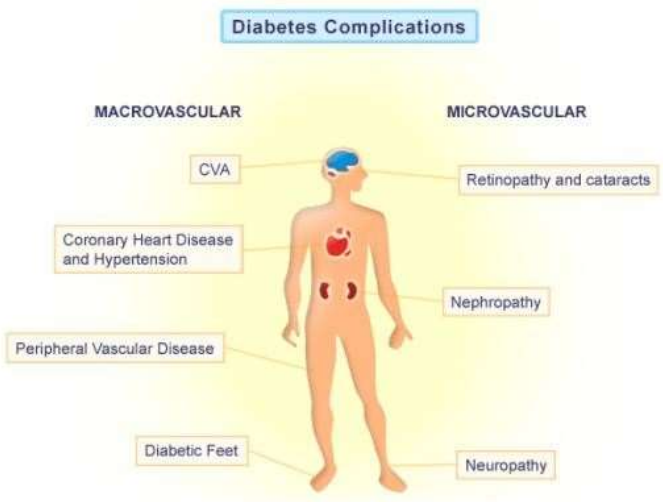
- **Metformin** is first line
  - Works well if HbA1c <9
  - Some nausea and diarrhea 1st week
  - Start at 500mg bid and titrate slowly to 1000mg bid (Max dose 2550mg daily)
  - Contraindications
    - Creatinine > 1.4 mg/dL in women, > 1.5 mg/dL in men
    - During and for 48 hours after major surgery or radiologic contrast use

Pharmacologic Treatment

- After **metformin** (or not tolerated): start **sulfonylurea**
  - Consider glipizide (glucotrol)
    - Start 5mg daily (2.5mg in elderly)
    - Optimal dosing BID
    - Max daily dose 40mg
  - **Risk of hypoglycemia**
  - Avoid long-acting formulas
  - Caution w hepatic or renal insufficiency but no absolute cutoff

Goals of Care

- A1c 7-8
- BP less than 130/80
- ACE-I for proteinuria
- Statin
- Aspirin?
- Eye exam/foot exam annually



Monitoring

- Every 6 months (3 months if changing therapy)
  - **HbA1c**
- Yearly
  - Lipids
  - Creatinine
  - LFTS
  - Electrolytes
  - Urine microalbumin, Urine Cr, U/A
  - TSH

Self-Monitoring of Glucose

- **Metformin**: No need to monitor
- **Sulfonylurea**: 1-2 times daily while titrating
- **Insulin**: QID
- For sulfonylureas and insulin monitor for:
  - Heavy exercise
  - Illness

Back to Bill…

- Falls in pre-diabetic range (HgbA1C of 6.1%)
- You consider…
  - Further lifestyle interventions
  - Referral to local self-management group
  - Adding Metformin or Topirimate for helping with weight loss
  - Switching his antipsychotic therapy
- After discussion w/ Bill, you decide to:
  - Switch Olanzapine to Aripiprazole
  - Check in on psych symptoms regularly
  - Plan to recheck labs in 3 months
  - Consider adding Metformin 500mg bid at that time if no improvement

On review of his other labs…

- You note on a non-fasting lipid panel:
  - Total cholesterol 260 mg/dL
  - HDL 33 mg/dL
  - Triglycerides 258 mg/dL
  - LDL *calculated* 175 mg/dL
- You wonder:
  - Does Bill have high cholesterol, and does it put him at risk for CVD?
  - Can I use these labs to diagnose high cholesterol or monitor treatment?
  - What can I do to help Bill address his cholesterol values?

CHOLESTEROL

Edited from slides prepared by:
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Department of Psychiatry

2013: Out with the old, in with the new

~2002

NCEP ATPIII:

- LDL (bad cholesterol) was the focus
- Treat to pre-specified target LDL based on risk
- Calculate risk on Framingham cohort
- Add drugs to treatment regimen until the target was met

2013!

ACC/AHA

- Appropriate placement on a **statin is target**
- Calculate risk based on ***pooled cohort equations***
- Ensure that therapy is effective (patients adherent) by checking cholesterol panels
- No evidence for alternative lipid-lowering treatments

Screening: Who and When?

- US General Population at Average Risk
  - Males: ***Every 5 years***, beginning age 35
  - Females: ***Every 5 years***, beginning age 45
- Those at elevated risk could be screened beginning at age 20

USPSTF 2008

Risk for CVD

CVD Risk Equivalents **(10-year risk of CVD ~20%, risk-class high):**
Diabetes Mellitus
Previous personal history of CVD
Abdominal Aortic Aneurysm
Peripheral Arterial Disease
Carotid Artery Stenosis

Major Risk Factors:
Family history of CVD in 1st deg relative (male < 55, female < 65)
Cigarette smoking
Hypertension, treated or untreated
Age (male > 45, female > 55)
HDL < 40 mg/dL

Nonfasting Labs

Table 1

Recommended screening guidelines and frequency for adults taking second-generation antipsychotics[a]

Parameter[b]	Measurement Method	Abnormal cutoff	Measurement period					
			Baseline	4 weeks	8 weeks	12 weeks	Every 3 months	Annually
Medical or family history	Interview	na	✓					✓
Weight (BMI)	Office	>7% weight gain over baseline OR ≥25 kg/m^2	✓	✓	✓	✓	✓	
Waist circumference	Office	Men: 40 inches; women: 35 inches	✓					✓
Blood pressure[c]	Office	≥140/90 mmHg	✓			✓		✓
Nonfasting HBA1c or random plasma glucose[d,e]	Venipuncture	Diabetes, ≥6.5%; prediabetes, ≥5.7%; OR diabetes, ≥200 mg/dl; prediabetes, ≥140 mg/dl	✓			✓		✓
Nonfasting TC and HDL (non-HDL=TC-HDL)[e,f]	Venipuncture	Non-HDL, ≥220 mg/dl; OR 10-year risk, ≥7.5%[g]	✓			✓		✓

[a] Unless noted, guidelines are unchanged from the 2004 screening guidelines issued jointly by the American Diabetes Association and the American Psychiatric Association.
[b] BMI, body mass index (kg/m^2); TC, total cholesterol; HDL, high-density lipoprotein.
[c] Criteria for diagnosis require two measurements collected at least 1 week apart with the subject in an upright position measured over the brachial artery at the level of the heart.
[d] American Diabetes Association updated classification of diabetes diagnosis and screening (15). Criteria for diagnosis require two samples collected via venipuncture on separate days. HBA1C, glycated hemoglobin.
[e] Venipuncture is the preferred method of diagnosis. Finger-stick point-of-care testing has not been validated, and results should be interpreted with caution or verified with venipuncture.
[f] American College of Cardiology and American Heart Association updated guideline on screening and diagnosis of dyslipidemia (13).
[g] Risk calculators are available online (23).

Vanderlip, et al Nonfasting Screening for Cardiovascular Risk Among Individuals Taking Second Generation Antipsychotics. Psychiatric Services, Vol. 65 No. 5. 573 - 576

Bill– Lipid Profile Interpretation

- **46 YO** white male with:
  - Schizophrenia, controlled with **Atypical Antipsychotics**
  - **Hypertension**, (last 155/94)
  - Smoker
  - **Non-diabetic**

Since Non-HDL is greater than **220 mg/dL**, that is considered extremely high and alone warrants high-intensity statin (slide)

Note: *Both Total Cholesterol and HDL vary by less than 2% with respect to fasting status (Sidhu 2012).*

Lipid Profile

Total Cholesterol:	260 mg/dL
HDL Cholesterol:	33 mg/dL
Triglycerides*:	258 mg/dL
LDL Direct Measure:	**185 mg/dL**
LDL Calculated*:	175 mg/dL

***Non-fasting**

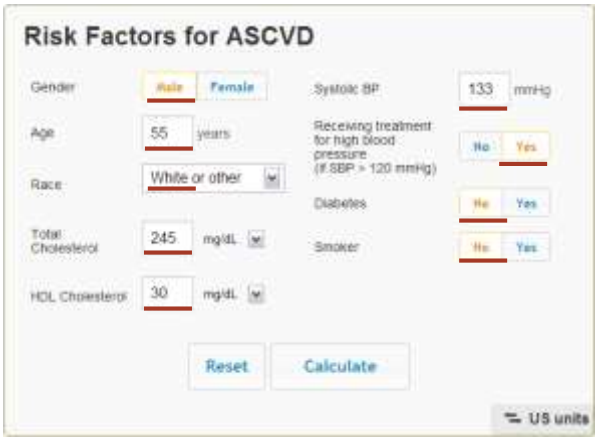
Calculated LDL is artificially low if non-fasting (slide).

Non-Fasting Lipid Profile

Total Cholesterol:	260 mg/dL
HDL Cholesterol:	33 mg/dL
Non-HDL:	**227 mg/dL**
Triglycerides*:	258 mg/dL

Non-HDL is much more reliable with respect to fasting vs. non-fasting, cut-offs are set ***30 pts higher than LDL***

Cardiovascular Risk



http://clincalc.com/Cardiology/ASCVD/PooledCohort.aspx

This uses the newer pooled cohort equations.

What you need to calculate risk:

1. Gender
2. Age
3. Race (w/nw)
4. Smoking Status
5. Recent BP and +/- tmt
6. DM status
7. Total Cholesterol
8. HDL Cholesterol

You do not need LDL values for this calculation.

Bill's Risk

- **ASCVD Risk Evaluation**
  - 10-yr risk of ASCVD: 29.4%
  - 10-yr risk in pt w/ optimal risk factors: 1.3%
  - Goal LDL <130mg/dL
- **ASCVD Risk Interpretation** [1,2]
  - Elevated 10-year risk (≥ 7.5%) for atherosclerotic cardiovascular disease (ASCVD)
  - Consider a high intensity statin
  - In individuals not receiving cholesterol-lowering drug therapy, recalculate the 10-year ASCVD risk every 4 to 6 years

Treatment of Dyslipidemia

Diet

- Low saturated fat
- No trans fat
- < 300 mg chol/day
- Fish oil
- Tree nuts
- Soy
- Fiber

Exercise

Aerobic exercise

- 30 min/day
- 120 min/week

Meds

- Statins
- Statins
- Statins

Switching AP's?

Treatment: 4 Types of Statin Candidates

	Clinical Characteristic	Type of Prevention	Applicable Age Range	Preferred Statin Intensity	Potential Actions
1	Clinical Presence of **ASCVD***	Secondary	**21** to 75	**High**	--
2	Serum LDL > 190 mg/dL *OR* **non-HDL > 220 mg/dL**	Primary	**21** to 75	**High**	Work-up potential secondary causes
3	**Type II Diabetes**	Primary	40 to 75	**Moderate** to **High**	--
4	10-year risk greater than **7.5%**	Primary	40 to 75	**Moderate**	

High: ~50% cholesterol reduction

Moderate: 30-50% reduction

Stone 2013, ACC AHA Guidelines

***ASCVD**: prior MI, PVD, stable or unstable angina, AAA or ischemic stroke

High Cholesterol: Secondary Causes

Class	Details
Disease/Medical/ Genetic	Diabetes mellitus **Hypothyroidism** Chronic kidney disease Nephropathy, proteinuria Familial (genetic) hyperlipidemia Pregnancy*
Substance Use	**Excessive alcohol intake**
Medications	Estrogen HIV Anti-retroviral therapy Anti-psychotic medications Steroids, immunosuppressants
Diet	Extreme obesity High saturated and trans-fats

(Stone et al. 2013; Vodnala, Rubenfire, and Brook 2012)

Treatment: Not all Statins are Equal

Statin Drug (mg)						Serum Cholesterol		
Rosuvastatin (Crestor®)	Atorvastatin (Lipitor®)	Simvastatin (Zocor®)	Lovastatin (Mevacor®)	Pravastatin (Pravachol®)	Fluvastatin (Lescol®)	Total	LDL	
—	—	10	20	20	40	22%↓	27%↓	
—	10	20	40	40	80	27%↓	34%↓	Low
5	20	40	80	80	—	32%↓	41%↓	
10	40	80	—	—	—	37%↓	48%↓	Moderate
20	80	—	—	—	—	42%↓	55%↓	
40	—	—	—	—	—	47%↓	63%↓	High

High potency, AM dosing possible

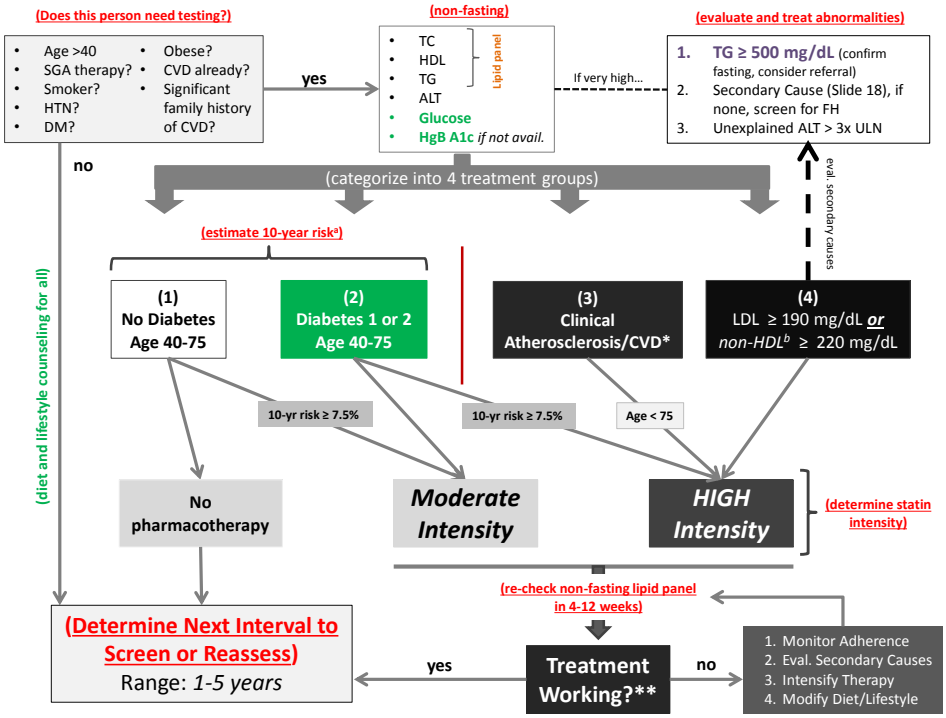
Source: www.effectivehealthcare.ahrq.gov Published online: May 16, 2013

Treatment: Statin Details

- **Monitoring**:
  - LFT's should be checked at baseline and 3 mos. if concern about compromised liver exists
  - **Safe with liver co-morbidities**, don't let transaminases elevate > 3-fold over baseline
  - Myalgias are ~10%
    - If present, hold statin and check CK
    - Myositis/rhabdomyolysis is rare, CK should be > 10-fold above baseline
    - If CK OK, may consider fluvastatin/pravastatin
- **Pregnancy *category X***
- Many psych meds go through CYP450
  - ***Consider pravastatin (generic, dual metabolism)***
- Only rosuvastatin (Crestor) and atorvastatin (Lipitor) may be dosed regardless of time

Follow-Up

1. Recheck lipid profiles periodically (at 3-12 mo. Intervals) to ensure adherence / therapeutic effects
   - **High** Potency 50% Reduction
   - **Moderate** Potency 30-50% Reduction
   - **Low** Potency 30% Reduction
2. Maintain therapy until >75 years, then consider moderation of dose or discontinuation
3. If intolerant of statin, try lower dose or lower potency
   - (OK to start on highest recommended dose – titration not necessary)
4. If general cholesterol goals not met and adherent, consider secondary causes and referral



What do you do for Bill's Cholesterol?

- You decide to start Bill on Atorvastatin 20 mg
  - Once a day
  - In the morning w/ his Aripiprazole
  - High dose statin (vs weaker Pravastatin) for aim of 50% reduction
  - Monitor for interactions due to cytochrome P450 inhibition w/ Risperidone (which you are considering titrating down over time)

And how about that blood pressure?

- Initially 155/94mmHg
- After 3 months of lifestyle changes: 156/95mmHg

- You ask:
  - When does he need a medication to treat his blood pressure?
  - What type of medication should we use to treat his hypertension?

HYPERTENSION

Edited from slides prepared by:
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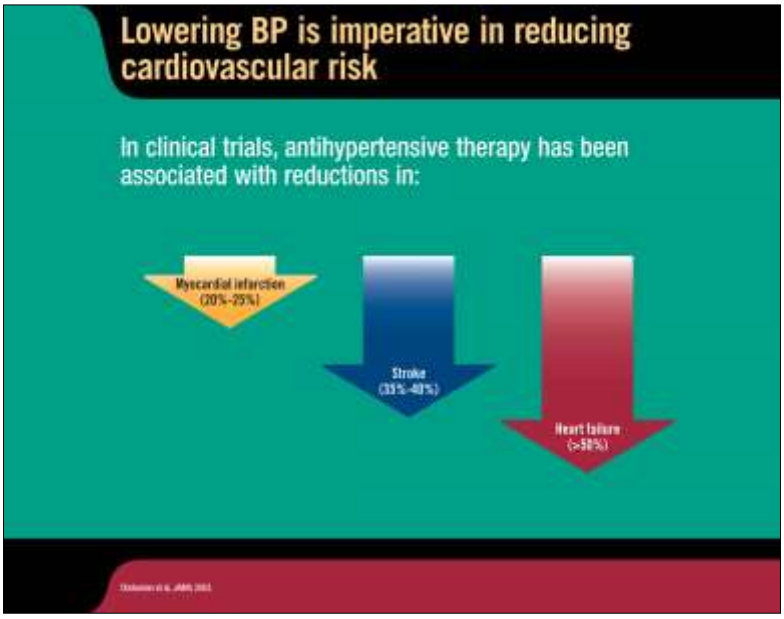
Hypertension

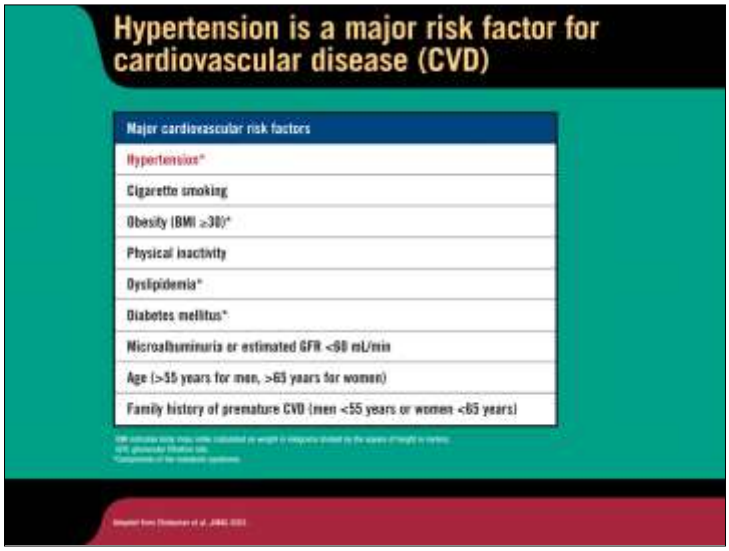
- Up to 65 million American adults – over 30% -- have hypertension
- Only half have their blood pressure under control
- Treatment of HTN is the most common reason for clinical visits and for the use of prescription drugs

JAMA 2010;303(20);2043

HYPERTENSION



HYPERTENSION

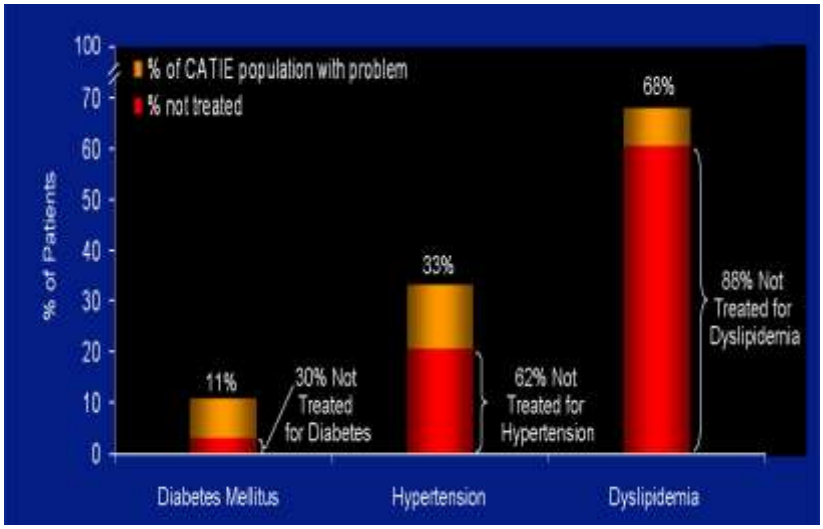


Mental Illness and Hypertension

- Those with severe mental illness (SMI) are more likely to be obese and therefore more likely to have HTN
- Those with SMI are more likely to have HTN and not be diagnosed or treated
- People who are chronically depressed are more likely to have HTN
- HTN is a key contributor to the significant decreased life span in those who have SMI!

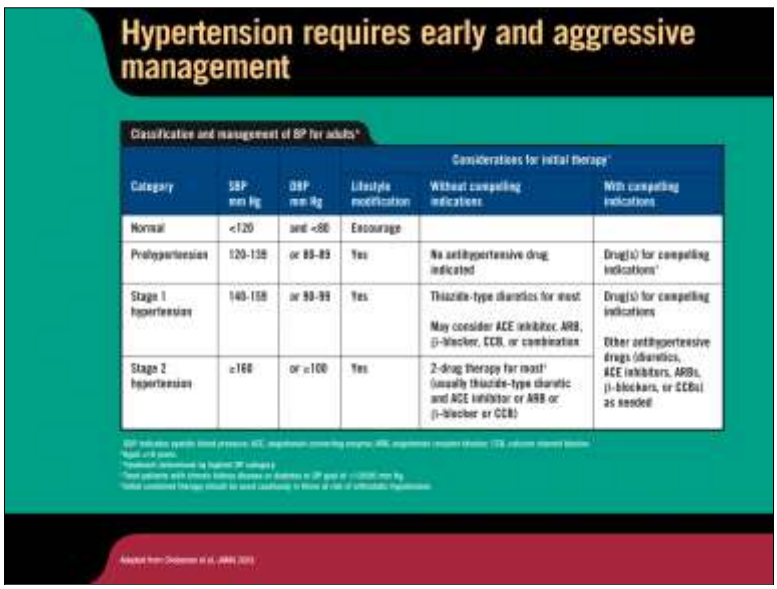
Schizophrenia Research 2006(86)

Hypertension --- We Are Missing the Target

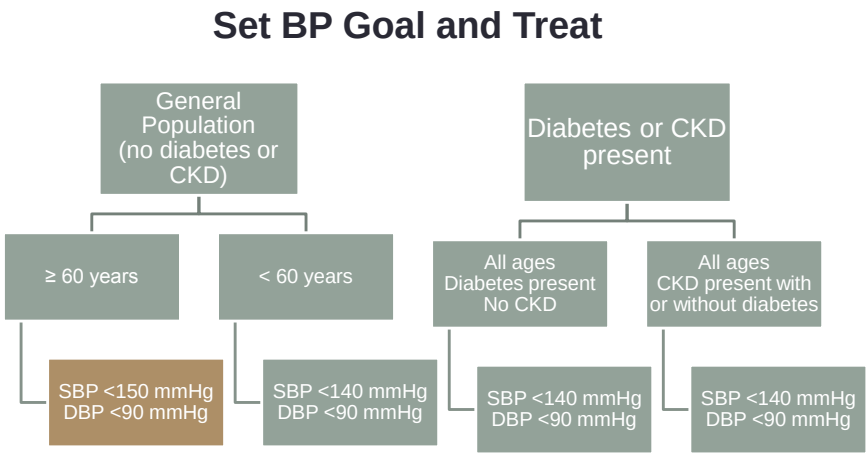


Schizophrenia Research 2006(86)

Hypertension…Past Definitions (JNC 7)



How We Treat NOW…



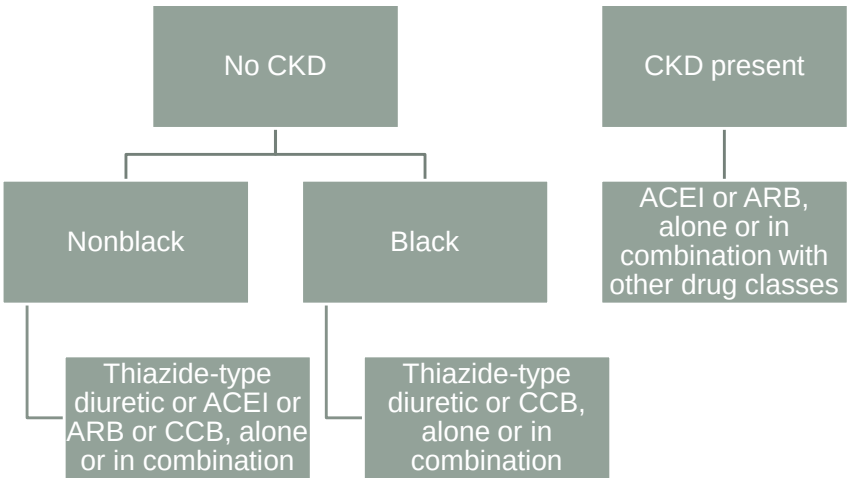
(*JNC-8 2013 Guidelines*)

The Best Treatment is Prevention…

- Screen if normal blood pressure every 2 years
- Consider checking blood pressure at every visit
- Diagnosis of hypertension is made after 3 abnormal readings, made on separate visits

Initiate BP Lowering-Medication

Based on Age, Diabetes, CKD



JNC-8 JAMA Dec 2013

Drug treatment titration strategy

A. Maximize first medication before adding second or

B. Add second medication before reaching maximum dose of first medication or

C. Start with 2 medication classes separately or as fixed-dose combination.

JNC-8 JAMA Dec 2013

At goal BP?

No

- Reinforce medication lifestyle and adherence.
- For strategies A and B, add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).
- For strategy C, titrate doses of initial medications to maximum.

JNC-8 JAMA Dec 2013

At goal BP?

No

- Reinforce medication and lifestyle adherence.
- Add additional medication class (eg, β-blocker, aldosterone antagonist, or others) and/or refer to physician with expertise in hypertension management.

Yes

- Continue current treatment and monitoring.

JNC-8 JAMA Dec 2013

Lifestyle modifications in the management of hypertension

Modification	Recommendation	Approximate systolic BP reduction, range*
Weight reduction	Maintain normal body weight (BMI, 18.5 to 24.9 kg/m2)	5 to 20 mmHg per 10-kg weight loss
Adopt DASH eating plan	Consume a diet rich in fruits, vegetables, and low-fat dairy products with a reduced content of saturated and total fat	8 to 14 mmHg
Dietary sodium reduction	Reduce dietary sodium intake to no more than 100 meq/day (2.4 g sodium or 6 g sodium chloride)	2 to 8 mmHg
Physical activity	Engage in regular aerobic physical activity such as brisk walking (at least 30 minutes per day, most days of the week)	4 to 9 mmHg
Moderation of alcohol consumption	Limit consumption to no more than 2 drinks per day in most men and no more than 1 drink per day in women and lighter-weight persons	2 to 4 mmHg

For overall cardiovascular risk reduction, stop smoking. The effects of implementing these modifications are dose and time dependent and could be higher for some individuals; they are not all additive.
BMI: body mass index; BP: blood pressure; DASH: Dietary Approaches to Stop Hypertension.
Reproduced from: The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Available at http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf.

Considerations for individualizing antihypertensive therapy

Indication	Antihypertensive drugs
Compelling indications (major improvement in outcome independent of blood pressure)	
Systolic heart failure	ACE inhibitor or ARB, beta blocker, diuretic, aldosterone antagonist*
Post-myocardial infarction	ACE inhibitor, beta blocker, aldosterone antagonist
Proteinuric chronic kidney disease	ACE inhibitor and/or ARB
Angina pectoris	Beta blocker, calcium channel blocker
Atrial fibrillation rate control	Beta blocker, nondihydropyridine calcium channel blocker
Atrial flutter rate control	Beta blocker, nondihydropyridine calcium channel blocker
Likely to have a favorable effect on symptoms in comorbid conditions	
Benign prostatic hypertrophy	Alpha blocker
Essential tremor	Beta blocker (noncardioselective)
Hyperthyroidism	Beta blocker
Migraine	Beta blocker, calcium channel blocker
Osteoporosis	Thiazide diuretic
Perioperative hypertension	Beta blocker
Raynaud's syndrome	Dihydropyridine calcium channel blocker
Contraindications	
Angioedema	ACE inhibitor
Bronchospastic disease	Beta blocker
Depression	Reserpine
Liver disease	Methyldopa
Pregnancy	ACE inhibitor, ARB (includes women likely to become pregnant)
Second- or third-degree heart block	Beta blocker, nondihydropyridine calcium channel blocker
May have adverse effect on comorbid conditions	
Depression	Beta blocker, central alpha agonist
Gout	Diuretic
Hyperkalemia	Aldosterone antagonist, ACE inhibitor, ARB
Hypokalemia	Thiazide diuretic
Renovascular disease	ACE inhibitor or ARB

* A survival benefit from an aldosterone antagonist has only been demonstrated in patients with advanced heart failure; in patients with less severe disease, an aldosterone antagonist is primarily given for hypokalemia.
Adapted from The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, JAMA 2003; 289:2560.

Common Drug Class Interactions

Antihypertensive Medication Class	Psychotropics	Caution
Diuretics	Lithium	Watch for dehydration and increased serum lithium level
Multiple taken at the same time	Venlafaxine	Potential for increased blood pressure
Multiple taken at the same time	Psychotropics with high α-1 blockade	Potential for hypotension
Any class	MAOI's	1)Hypotension (α-1 block) 2)Hypertension (food with tyramine might cause a catecholamine surge and hypertensive crisis)
Any class	Stimulants	Potential for increased blood pressure

For Bill's Blood Pressure

- You decide to:
  - Start Hydrochlorathiazide (HCTZ) 12.5mg
  - If he had DM, you would have started an ACE Inhibitor
- Two weeks later his BP is 148/93
  - Increase his HCTZ to 25mg
- One month later, his BP is 141/90 but his K+ is 3.3mg/dL
  - Add in an ACE inhibitor to help w/ BP control and help spare his potassium
- Two weeks later, BP is 130/85- Goal!
  - Creatinine and Potassium are normal
- He uses a pill box to help him manage his new medications

What about Bill's tobacco use?

- Rolls his own q 20-30min while awake
- Approximately 28/day
- Started at age 16, you estimate 60 pack yr hx
- Tried quitting several times
- Went "cold turkey" for 6 months when he was in a state hospital
- He's not sure what he'd do to pass time if he didn't smoke
- You wonder:
  - Can Bill successfully stop smoking?
  - Will smoking cessation impact his mental illness, or have an effect on his medications?
  - Are cessation medications safe or even effective for Bill?

TOBACCO

Edited from slides prepared by:
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PSYCHIATRIC SERVICES

psychiatryonline

From: Cigarette Smoking Among Persons With Schizophrenia or Bipolar Disorder in Routine Clinical Settings, 1999–2011

Psychiatric Services. 2013;64(1):44-50. doi:10.1176/appi.ps.201200143

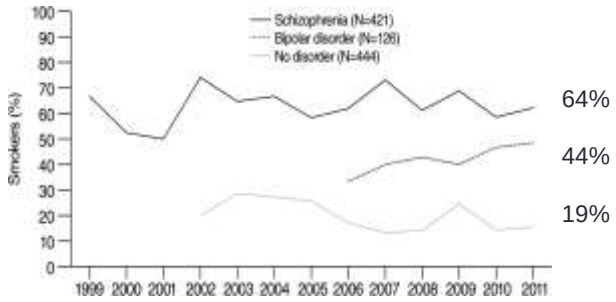
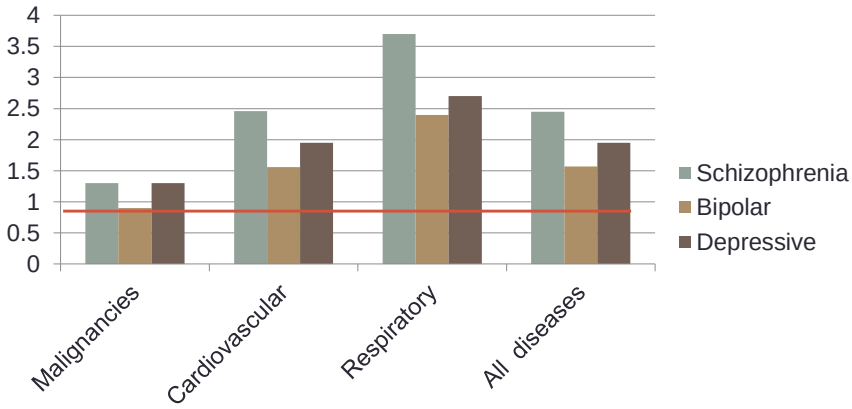


Figure Legend:

Percentage of smokers by diagnostic group and year of enrollment[aa]Data are not shown for the bipolar disorder sample prior to 2007 or for the control group (no psychiatric illness) for 2004 because N<10 for each of these years for these groups. Number of persons in each of the other groups, by year, follows. For schizophrenia: 1999, 15; 2000, 21; 2001, 10; 2002, 27; 2003, 34; 2004, 15; 2005, 48; 2006, 21; 2007, 26; 2008, 49; 2009, 77; 2010, 41; 2011, 37. For bipolar disorder: 2007, 15; 2008, 14; 2009, 20; 2010, 30; 2011, 33. For the no-disorder control group: 2002, 71; 2003, 28; 2005, 66; 2006, 35; 2007, 45; 2008, 64; 2009, 61; 2010, 35; 2011, 39

(Dickerson 2013)

Tobacco-Linked Standardized Mortality Ratios in SMI Populations



Tobacco Use linked to approximately 50% of total deaths in all three psychiatric conditions

(Callaghan et al 2013)

TOBACCO DEPENDENCE: A 2-PART PROBLEM and MANAGEMENT

Tobacco Dependence

Physiological	↔	Behavioral
Addiction to nicotine → Treatment → Medications for cessation		Habit of using tobacco → Treatment → Behavior change program

National guidelines recommend ALL smokers should be screened, advised to quit and offered treatment that address both aspects of dependence

(APA 2006, US PHS 2008, Fiore 2000)

FIVE A's for TREATING TOBACCO

AAMC 2005 Survey
Psychiatrists are the least likely to address (vs FM, IM, OBGYN)

PSY	IM		
62%	89%	ASK	about tobacco USE
62%	93%	ADVISE	tobacco users to QUIT
44%	73%	ASSESS	readiness to make a QUIT attempt
56%	93%	ASSIST*	with the QUIT ATTEMPT
14%	19%	ARRANGE	FOLLOW-UP care

*medications, cessation materials

(Fiore 2008, AAMC 2007)

Why Psychiatrists?

- Most frequent contact / knows the patient best
- Can combine meds and behavioral/counseling
- Trained in substance abuse treatment
- Can identify / address changes in psychiatric symptoms during the quit attempt

Failure to address tobacco use tacitly implies that quitting is not important or that the patient is not worth helping.

1. ASSESS readiness on "stages of change"

Motivational Interviewing

Assist

Behavioral Modification: In-Office

- Educate on withdrawal symptoms
- Set a quit date
- Cognitive- identify / modify reinforcing thoughts
- Behavioral- Modify routine, Identify triggers

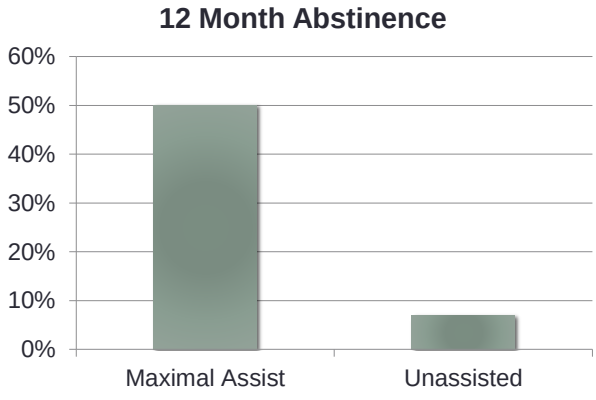
OR

Behavioral Modification: Community

Know your community resources!

Expectations and Maximizing Success

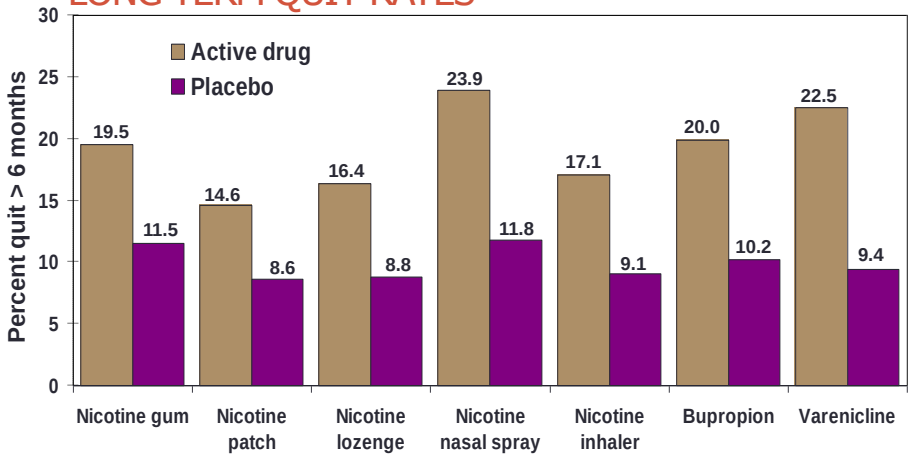
It's a learning process: reframe success!



(Zhu et al 2000, Hall et al 2004)

ASSIST: Ready to Quit

FDA Approved Pharmacotherapy LONG-TERM QUIT RATES



Silagy et al. (2004). *Cochrane Database Syst Rev;* Hughes et al., (2004). *Cochrane Database Syst Rev.;* Gonzales et al., (2006). *JAMA* and Jorenby et al., (2006). *JAMA*

Consider Combination NRT

- Start with one slow-release NRT form (i.e. patch) and add short-acting NRT (e.g. gum/inhaler/lozenge) for break-through cravings
- Achieve sustained levels of nicotine w/ rapid adjustment for acute needs for withdrawal symptoms
- Recipients report greater levels of comfort
- More efficacious than single NRT

FDA Label Change: decreased safety concerns, increased flexibility

Previous

Drug Facts Labeling

Warnings

Do not use.

- If you continue to smoke, chew tobacco, use snuff, or use a different NRT product or other nicotine-containing products

Directions

- Stop smoking completely when you begin using the NRT product
- It is important to complete treatment. Stop using the NRT product at the end of a specified number of weeks. If you still feel the need to use the NRT product, talk to your doctor

Current

Drug Facts Labeling

Warnings

None.

The "Do not use" statement has been removed

Directions

- Begin using the NRT product on your quit day
- It is important to complete treatment. If you feel you need to use the NRT product for a longer period to keep from smoking, talk to your healthcare provider

(FDA 2013)

Safe to use before quit day
Safe to use > 12 weeks
May use during a lapse or relapse and improve outcome

(Zapawa 2011)

BUPROPION SR

ADVANTAGES

- Can be used with NRT
- May be beneficial in patients with depression and schizophrenia
- Taper not necessary

DISADVANTAGES

- Avoid if risk for seizures, eating d/o, unmanaged bipolar
- Common side effects:

  dry mouth, anxiety, insomnia (avoid bedtime dosing)

BUPROPION SR:
DOSING for SMOKING CESSATION

Begin therapy 1 week PRIOR to quit date

Initial treatment

- 150 mg po q AM x 3 days, then:
- 150 mg po qam & qafternoon x 7–12 weeks

If 300 mg is not well tolerated:

- Reduce dose to 150 mg and reassure that 150 mg dose is still efficacious

(Swan 2003)

VARENICLINE: DOSING

- **Begin therapy 1 week PRIOR to quit date**
- **Take after eating, with full glass of water to reduce nausea.**

Treatment Day	Dose
Days 1–3	0.5 mg qd
Days 4–7	0.5 mg bid
Day 8 – Week 12	1 mg bid

Can simply write for "Month Starter PAK," then 2 months of 1 mg bid

Varenicline: Warning label in package insert

"Serious neuropsychiatric events including, but not limited to, depression, suicidal ideation, suicide attempt, and completed suicide"

- Based on case reports, Led to FDA alert in 2/08

Since then…

- No association in most retrospective studies (Stapleton 2009, Williams et al 2011)
- No association in prospective cohort (Thomas et al 2013) and prospective DB randomized studies (Anthenelli et al 2013) and may actually improve mood (Cinciripini 2013)
- No association in reanalysis of 17 RCT's and Dept of Defense observational data (Gibbons et al 2013)

Cost of Treatment

- American Lung Association has state by state tobacco cessation coverage listed
- http://lungusa2.org/cessation2/
- Specifically discusses which NRT, pharmacotherapy and counseling options are covered
  - Medicaid coverage
  - State employee health plan coverage
  - Private insurance resources
  - What NRT 1-800-QUIT-NOW can dispense

Pharmacotherapy Summary

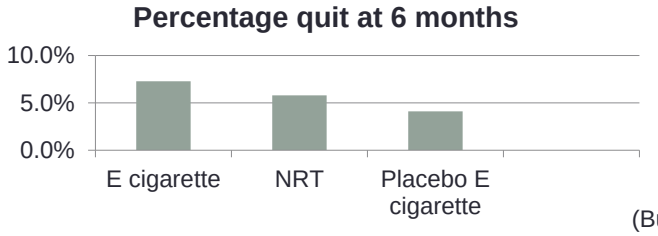
	NRT (Patch)	Bupropion SR	Varenicline
Initiation	On quit date	1-2 w before quit date	1 w before quit date
Dosing	**<** 10 cigs/d: 14 mg x 6 w, 7 mg x 2 w **>** 10 cigs/d: 21 mg x 6 w, 14 mg x 2 w, 7 mg x 2 w	150 mg qam x 3 d, then 150 mg qam and qafternoon (8 hours later)	0.5 mg qd x 3 d, then bid x 4 d, then 1 mg bid
Duration	12 w	12 w	12 w
Precautions	Local Reaction	Eating disorder Seizure disorder Unmanaged bipolar	Monitor for adverse mood and behavior changes

RCT Data specifically for:	NRT	Bupropion SR	Varenicline
Depression (history of)	++	++	++
Schizophrenia	?	++	+
Bipolar	?	?	?

? Insufficient data + limited data ++ RCT data support use NRT Nicotine Replacement Therapy

Electronic Cigarettes "Vaping"

- Controversial!!
  - Not regulated by FDA
  - Harm Reduction vs "gateway" to smoking
  - Safety concern (FDA 2009) but less safe compared to other NRT?
  - Not cheap
- Some states banning use in minors
- First RCT with e cigarettes:
  - Low abstinence overall, insufficient power to conclude superiority
  - Well tolerated



(Bullen 2013)

Bill wants to quit!

- You set a quit date
- Start Buproprion SR 150mg 2 weeks prior
- Start the Nicotine Patch (21mg) on quit date and increase Buproprion SR to 300mg
- Ask his case manager to check in and encourage him
- He enrolls in a smoking cessation class

- After one month…
  - He is only smoking 2-3cig/day at times of major craving
  - You add in short acting NRT (gum) for those times

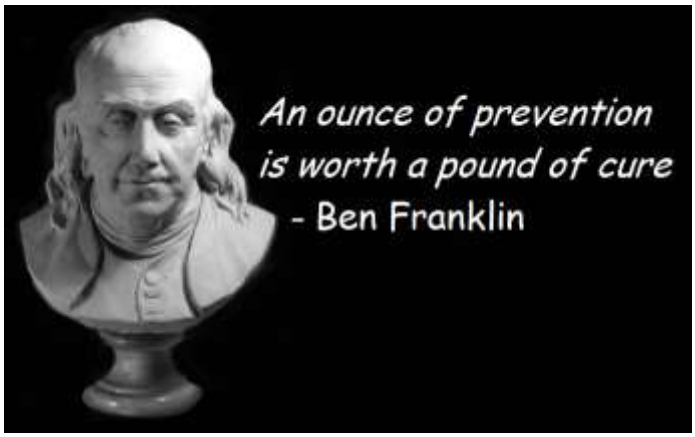
After 6 months…

- Bill has quit smoking and his chronic diseases are under good control
- His 10-year CVD risk is now 4%, down from 29% just 6 months earlier
- You realize that he may be at risk for many other diseases and wonder:
  - What steps can I take to help identify or reduce his risk of infectious diseases?
  - What types of cancer screening would he be a candidate for?

PREVENTION

Edited from slides prepared by:
Jeffrey Rado, MD
Assistant Professor
Rush University

Why prevention?



Types of Prevention

- ***Primary Prevention***: Prevent disease in individual with no symptoms or diagnosed disease (e.g. sunscreen, vaccines).
- ***Secondary Prevention***: Goal is to find and diagnose disease early (before symptoms are evident) so that treatment can be initiated as early as possible (mammography, PAP smears).
- ***Tertiary Prevention***: Disease is diagnosed and patient exhibits symptoms; goal is to prevent complications or progression of disease.

What makes a good screening test?

- Disease:
  - Common condition with significant morbidity and mortality (important public health problem).
  - Effective treatment available.
- Screening tool:
  - Available at a reasonable cost.
  - Safe and tolerable to patient.
  - Capable of identifying the disease and shown to lead to improved outcomes.

Where do recommendations come from?

- U.S. Preventive Services Task Force (USPSTF)
- American Academy of Family Practice (AAFP)
- American College of Physicians (ACP)
- American Academy of Pediatrics (AAP)
- American College of Obstetrics and Gyn (ACOG)
- American Psychiatric Association (APA)
- American Academy of Child and Adolescent Psych
- American Medical Association (AMA)
- Centers for Disease Control (CDC)
- Insurance Companies (CMS, Commercial etc.)
- Special Societies (American Cancer Society, American Heart Association)

U.S. Preventive Services Task Force Grading Recommendations

- **A** There is high certainty that the net benefit is substantial. Offer this service.
- **B** There is Moderate certainty that the net benefit is moderate to substantial. Offer this Service.
- **C** "It depends" May be a benefit depending on the individual patient and there symptoms, presentation.
- **D** No benefit and possible harm. Discourage using this service.
- **I** Statement: We don't know.
- Also quality statement: Good, Fair and Poor

Breast Cancer

- Mammography:
  - Age 40-49: Individualized discussion of risk/benefits
  - Age 50-74: Every two years
  - Age 75+: benefit of screening uncertain.
  - ONLY 70% of eligible women receive mammograms—most common reason women give is that their doctor never told them to get one.

Self Breast Exam: no benefit

Unknown if beneficial:

- Breast MRI
- Clinical Breast Exam

Cervical Cancer

- PAP Cytology
  - Up to age 21: do not screen
  - Age 21-65: every 3 years (usually with reflexive HPV testing).
  - Age 30-65: every 3 years or every 5 years with HPV testing
  - Over age 65: do not screen
  - Do not screen HPV before age 30.

Colon Cancer

- No screening recommended prior to age 50 for average risk persons.
- Age 50-75:
  - FOBT yearly
  - Flexible Sigmoidoscopy every 3-5 years
  - Colonoscopy every 10 years
- Age 75+: no screening
  - There may be considerations that support colorectal cancer screening in an individual patient between age 75 and 85.

Lung Cancer

- Low dose CT scan of Chest for individuals age 55-80 with a 30 pack-year history who currently smoke or quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery**.** (new December 2013—Grade B recommendation)

Other Cancers

- No benefit from screening:
  - Pancreatic
  - Ovarian
  - Testicular
  - Prostate
- Unknown benefit from screening:
  - Bladder
  - Skin
  - Oral

Cardiovascular Disease

- *Hypertension*: every 2 years in adults.
- *Hyperlipidemia*: every 5 years in men age 35 or older and women age 45 and older.
- *AAA*: single screening ultrasound in MEN age 65-75 who have ever smoked.
- *Tobacco*: ask at every encounter.
- Screening for peripheral artery disease or carotid artery disease not recommended.

Endocrine Disorders

- ***Diabetes***: screen every three years only if Blood pressure is >135/80 (Grade B).
- ***Thyroid Disorders***: not recommended due to unclear benefit.
- ***Osteoporosis***: DEXA scan in women >65 years older with out known fractures or secondary causes of osteoporosis (Grade B).

Infectious Diseases

- ***HIV***: all individuals age 15-65 should be screened.
- ***Hepatitis C***: All adults born between 1945 and 1965 should receive one time testing.
- ***Chlamydia and Gonorrhea***: screen all sexually active women, including those who are pregnant, for gonorrhea infection if they are at increased risk for infection (that is, if they are young or have other individual or population risk factors).

Vaccines

- ***Influenza***: Yearly for everyone age 6 months and older.
- ***Pneumococcal polysaccharide***:
  - One dose after age 65
  - One or two doses prior to age 65 for individuals with chronic medical illnesses.
- ***Zoster*** (Shingles): single dose at age 60 or older.
- ***Tetanus/Diptheria (Td):*** every 10 years. One dose booster should be TDAP.
- ***Hepatitis B***: Recommended if risk factors present.
- ***HPV***: three doses before age 26 in females and before age 21 in males.

Resources: CDC website

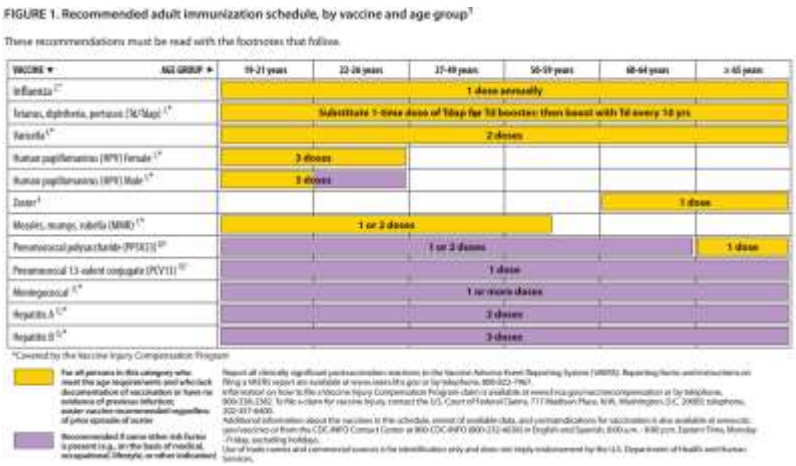


FIGURE 1. Recommended adult immunization schedule, by vaccine and age group[1]

These recommendations must be read with the footnotes that follow.

VACCINE ▼ AGE GROUP ▶	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	≥ 65 years
Influenza[2]	1 dose annually					
Tetanus, diphtheria, pertussis (Td/Tdap)[3]	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs					
Varicella[4]	2 doses					
Human papillomavirus (HPV) Female[5]	3 doses					
Human papillomavirus (HPV) Male[5]	3 doses					
Zoster[6]					1 dose	
Measles, mumps, rubella (MMR)[7]	1 or 2 doses					
Pneumococcal polysaccharide (PPSV23)[8]	1 or 2 doses					1 dose
Pneumococcal 13-valent conjugate (PCV13)[9]	1 dose					
Meningococcal[10]	1 or more doses					
Hepatitis A[11]	2 doses					
Hepatitis B[12]	3 doses					

*Covered by the Vaccine Injury Compensation Program.

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; under routine recommended regardless of prior episode of zoster

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indication)

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at www.vaers.hhs.gov or by telephone, 800-822-7967. Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400.

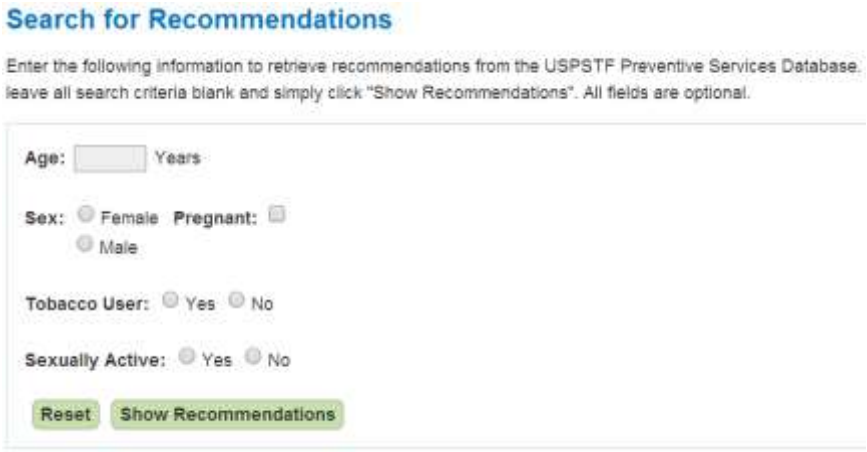
Additional information about the vaccines in the schedule, except of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 8:00 a.m. – 8:00 p.m. Eastern Time, Monday – Friday, excluding holidays.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

http://www.cdc.gov/vaccines/schedules/downloads/adult/mmwr-adult-schedule.pdf

Resources: http://healthfinder.gov/myhealthfinder/

Resources: http://epss.ahrq.gov/ePSS/search.jsp



Also available on mobile devices.

After reviewing the guidelines…

- You decide to screen Bill for HIV, syphilis, hepatitis B and C, and tuberculosis with a skin test
- You administer a flu shot, TDaP and Hepatitis A and B
- He has no family history of cancers so he is not due for screening until age 50
  - At 50, recommend colon cancer screening and discuss prostate cancer screening
- At age 55, you would consider the low dose CT scan of chest to screen for lung cancer (given < 15 yrs since smoking cessation)

Questions?

"You're fifty-seven years old. I'd like to get that down a bit."

Primary Care Skills for Psychiatrists

a collaboration of:

APA Workgroup on Integrated Care
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