KEY ARTICLES & CLINICAL DEVELOPMENTS OF 2022* IN FAMILY MEDICINE

BY DAN WALDMAN, MD

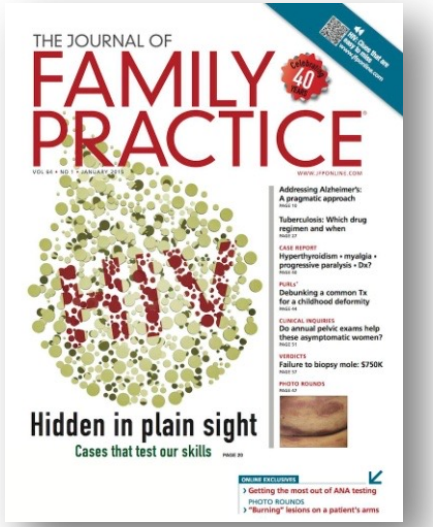
DEPARTMENT OF FAMILY & COMMUNITY MEDICINE

Disclosures: None

Learning Objectives

At the end of this presentation, the attendee will be able to:

1. Cite important and clinically-relevant research articles of the past year in the field of Family Medicine.
2. Describe methods for staying current in clinical medicine.


THE JOURNAL OF
FAMILY PRACTICE
Hidden in plain sight
Cases that test our skills


Annals of Internal Medicine


American Family Physician
60TH ANNIVERSARY
Celebrating Six Decades of Publishing


BMJ
OVERDIAGNOSIS
Harming the healthy


ANNALS OF
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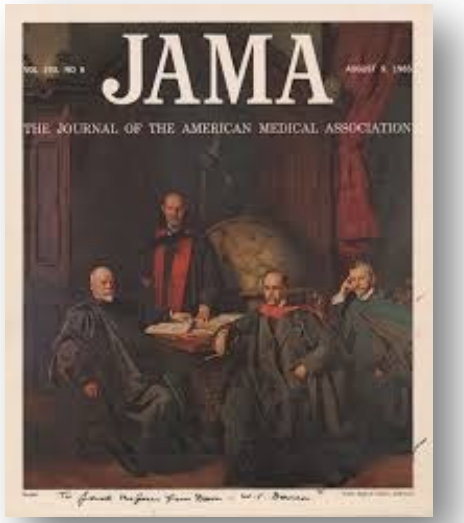

JAMA
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION


The NEW ENGLAND
JOURNAL of MEDICINE


THE LANCET


OBSTETRICS &
GYNECOLOGY


The American Journal of
Sports
Medicine

How Did I Choose Things?

Essential Evidence/Daily POEMS

Journal Watch

Our Faculty

Various “Top” Lists

<u>Prioritized:</u>

- key areas of FM practice
- might directly change clinical practice
- might be leading to paradigm changes

Vitamin D Supplementation for Skeletal Health

Vitamin D in Skeletal Health Background

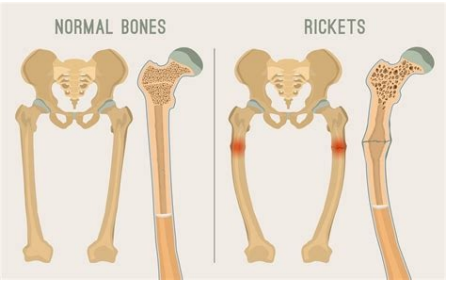
Rickets recognized in 17th century (bony deficiencies recognized earlier)

Vit D deficiency recognized as the cause of rickets in 1920s: lack of exposure to sunshine or vitamin D rich food

Vit D: enhances intestinal absorption calcium and phosphate. Low Ca absorption ->rise in PTH ->increased bone resorption

Optimal Vit D supplementation for skeletal health: uncertain

Q: Does supplemental vit D reduce the risk of fracture in older adults?



VITAL Study

Sub analysis of “VITAL” trial (Double Blinded RCT)

Original goal of Vital: to evaluate the effect of Vit D supplements with/without omega 3 supplements on cancer and CV outcomes (***Vit D did not prevent CV events or cancer***)

Patients not selected on the basis of fracture risk or vitamin D levels

participants with a history of cancer, CV disease, or hypercalcemia were excluded

Randomized 25,871 men ≥50 years and women ≥ 55

- 2000 IU vitamin D per day vs placebo, and/or
- 1000 mg omega-3 fatty acid per day or placebo

Mean age of participants was 57, 51% were women, and 20% were Black

N Engl J Med 2022; 387:299

VITAL Study

~25% of patients had a baseline vitamin D level of <24 ng/mL and 1.5% had a value of <12 ng/mL

42% in each group were already taking supplemental vitamin D, which they agreed to limit to no more than 800 mg per day during the study

Results: Vitamin D supplementation had no effect on the incidence of total, nonvertebral, or hip fractures and no effect on "major osteoporotic fractures" (hip, wrist, humerus, or clinical spine fractures)

Subgroup analyses performed: no benefit in patients who weren't already taking supplemental vitamin D, or patients with a previous fragility fracture

No effect modification seen in the 20% who were also taking supplemental calcium

No difference in fracture rates in different quartiles of vitamin D levels, including patients with vitamin D levels <24.0 ng/mL and <12 ng/mL

Potential Harms minimal: no differences in renal stones, hypercalcemia or other adverse events

N Engl J Med 2022; 387:299

Other Recent Vit D Evidence

Systematic review of RCTs conducted prior to VITAL: vitamin D supplementation did not prevent fractures in community-dwelling adults

J Clin Endocrinol Metab 2022; 107:882

Australian “D-Health” trial: ~21k adults (age, ≥60) received monthly doses of 60,000 IU of vitamin D or placebo

- mortality at 6 years of follow-up was the same in both groups ~5%.
- The subgroup of participants with baseline 25(OH)D levels <20 ng/mL did not gain any mortality benefit either

Lancet Diabetes Endocrinol 2022; 10:120

Some Thoughts

Vital was over ~5 ½ years…but it was a large trial and included many people with very low Vit D levels

Vitamin D levels are a good *surrogate marker* for ill health but not necessarily a useful *treatment goal* to reduce fracture risk

Thresholds for “deficiency” or “insufficiency” remain controversial

Take home: vitamin D supplementation has no benefit in the primary prevention of COVID-19, heart disease, cancer, or for fractures **in otherwise healthy individuals**

Perhaps: continue to check Vit D levels for older women/pts who are at higher risk for developing osteoporosis, given limited harms

Some existing guidance

Canadian choosing wisely campaign: only measure vit D levels in pts with renal or other significant metabolic disease, they do recommend routine supplementation.

Choosing Wisely Canada™

"The US Preventive Services Task Force (USPSTF) concludes that the ***overall evidence on the benefits of screening for vitamin D deficiency is lacking***. Therefore, the balance of benefits and harms of screening for vitamin D deficiency in asymptomatic adults cannot be determined (2021)"

U.S. Preventive Services TASK FORCE

Diabetic Neuropathy Meds

Are amitriptyline, duloxetine, and pregabalin effective in decreasing pain in adults with diabetic peripheral neuropathy?

Interesting study design (cross-over trial)

- 130 adults (94% white, 74% male) with DM and pain associated with distal symmetrical polyneuropathy, for at least 3 months
- Participants each randomly assigned to three 16-week pathways, separated by a 2-week washout period
- Everyone got all 3 different combos during the study - if they didn't drop out (84/130 pts made it to the end)

Lancet 2022 Aug 27; 400:680.

Treatment Pathways

3 Pathways

- Oral amitriptyline supplemented with pregabalin (A-P)
- Pregabalin supplemented with amitriptyline (P-A)
- Duloxetine supplemented with pregabalin (D-P)
- Treatments were titrated towards maximum tolerated dose (75 mg/day for amitriptyline, 120 mg/day for duloxetine, and 600 mg/day for pregabalin

Lancet 2022 Aug 27; 400:680.

More Study Design Info

- Each pathway started with a 2-week period where the medication was titrated to the maximum tolerated dose, followed by 6 weeks of maintenance monotherapy
- At the end of 6 weeks: those with pain ≤ 3/10 were classified as “responders” and maintained on monotherapy for 10 weeks
- “Nonresponders” received the second drug for 10 weeks. During the next 10 weeks meds titrated for goal of pain levels ≤ 3/10
- After 16 weeks: researchers stopped all study drugs for 2-week washout period, then the participants started the next drug combo (everyone tried the 3 pathways)

Lancet 2022 Aug 27; 400:680.

Why these specific combos of meds?

Rationale provided:

- No gabapentin: similar mechanism of action to pregabalin, 3x daily, tricky pharmacokinetics, long titration period
- No P-D pathway: a previous study showed no difference in pain reduction if duloxetine was added to pregabalin
- No A-D pathway: Both amitriptyline and duloxetine are antidepressants, felt to be little rationale for combining both

Results

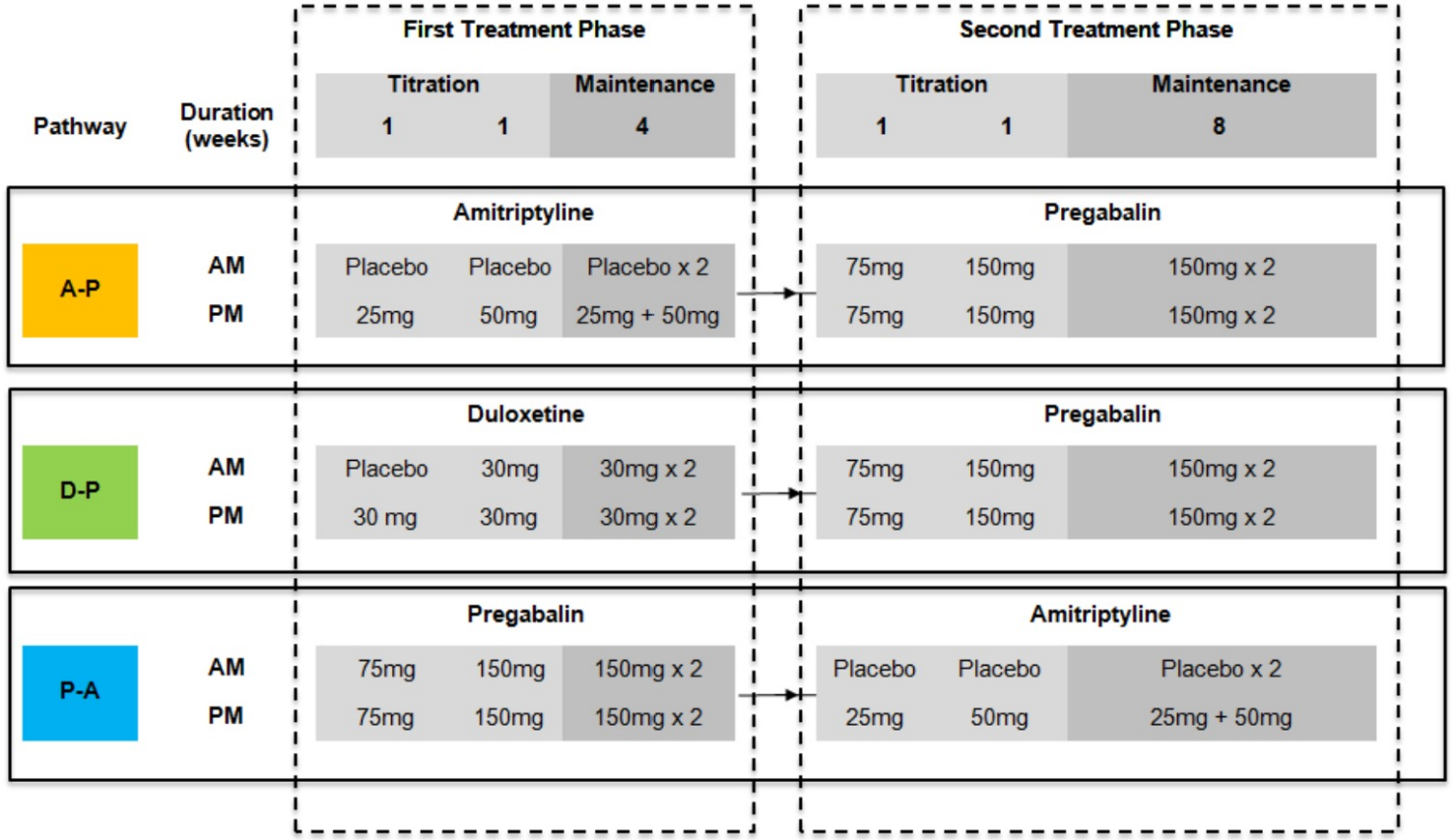
Pain scores at week 16 decreased from mean of 6.6 out of 10 (SD 1.5) to 3.3 (1.8) at week 16 in all three pathways

- About 1/3 of patients had ≥50% pain relief with monotherapy, and another 15% achieved that with addition of a second agent (no major differences by pathway)
- At 16 weeks an additional ~15% who needed the 2nd med got to ≥ 50% reduction, similar across the 3 pathways

Expectation setting: what is the significance of 50% pain reduction? 30%?

Lancet 2022 Aug 27; 400:680.

Dosing



"titrated to max Tolerated dose"

Figure S1: Dosing and titration schedule for Treatment Pathways: A-P (amitriptyline supplemented by pregabalin), D-P (duloxetine supplemented by pregabalin) and P-A (pregabalin supplemented by amitriptyline). Each pathway had two Treatment Phases, each with a 2-week initial titration period towards maximum tolerated dose. Participants continued on maximum tolerated maintenance dose of the drug from the first Treatment Phase for the duration of the second Treatment Phase. For patients with eGFR 30-59 ml/min/1.73m^2 the maximum pregabalin dose was 300mg/day.

Side effects

	A-P	P-A	D-P	*P* value
Dizziness	12%	16%	24%	0.036
Nausea	5%	23%	7%	0.0011
Dry mouth	32%	8%	17%	0.0003

	Monotherapy (weeks 0–6)				Combination therapy (weeks 7–16)				Treatment pathway (weeks 0–16)			
	Amitriptyline (n=104)	Duloxetine (n=100)	Pregabalin (n=107)	p value	A-P (n=45)	D-P (n=42)	P-A (n=47)	p value	A-P (n=104)	D-P (n=100)	P-A (n=107)	p value
Fatigue	18 (17%)	17 (17%)	11 (10%)	0·25	4 (9%)	3 (7%)	9 (19%)	0·20	21 (20%)	18 (18%)	22 (21%)	0·88
Dry mouth	22 (21%)	5 (5%)	10 (9%)	0·036	10 (22%)	3 (7%)	9 (19%)	0·16	33 (32%)	8 (8%)	18 (17%)	0·0003
Dizziness	8 (8%)	8 (8%)	19 (18%)	0·029	5 (11%)	5 (12%)	4 (9%)	0·90	12 (12%)	16 (16%)	26 (24%)	0·036
Sedation	19 (18%)	6 (6%)	10 (9%)	0·021	2 (4%)	3 (7%)	5 (11%)	0·52	21 (20%)	11 (11%)	15 (14%)	0·17
Diarrhoea	8 (8%)	10 (10%)	6 (6%)	0·45	7 (16%)	6 (14%)	1 (2%)	0·16	18 (17%)	16 (16%)	9 (8%)	0·12
Nausea	4 (4%)	19 (19%)	6 (6%)	0·0042	1 (2%)	3 (7%)	2 (4%)	0·64	5 (5%)	23 (23%)	7 (7%)	0·0011
Oedema	2 (2%)	5 (5%)	14 (13%)	0·010	4 (9%)	3 (7%)	1 (2%)	NC	9 (9%)	10 (10%)	17 (16%)	0·15
Constipation	9 (9%)	8 (8%)	5 (5%)	0·57	3 (7%)	5 (12%)	2 (4%)	0·56	11 (11%)	13 (13%)	8 (7%)	0·47
Headaches	8 (8%)	10 (10%)	7 (7%)	0·68	1 (2%)	3 (7%)	0	NC	9 (9%)	14 (14%)	8 (7%)	0·33
Fall	3 (3%)	6 (6%)	5 (5%)	0·25	2 (4%)	4 (10%)	5 (11%)	0·20	7 (7%)	12 (12%)	10 (9%)	0·88
Excessive sweating	7 (7%)	7 (7%)	1 (1%)	0·14	1 (2%)	1 (2%)	5 (11%)	0·16	9 (9%)	10 (10%)	6 (6%)	0·58
Vomiting	5 (5%)	9 (9%)	1 (1%)	0·079	1 (2%)	2 (5%)	5 (11%)	NC	7 (7%)	11 (11%)	8 (7%)	0·51
Insomnia	3 (3%)	7 (7%)	3 (3%)	0·31	3 (7%)	2 (5%)	3 (6%)	0·85	6 (6%)	8 (8%)	7 (7%)	0·90
Abdominal cramping	4 (4%)	4 (4%)	3 (3%)	0·78	1 (2%)	0	1 (2%)	NC	5 (5%)	6 (6%)	4 (4%)	0·58
Ataxia	1 (1%)	2 (2%)	7 (7%)	0·091	3 (7%)	0	1 (2%)	NC	4 (4%)	4 (4%)	8 (7%)	0·41
Inability to concentrate	4 (4%)	1 (1%)	6 (6%)	0·23	1 (2%)	0	0	NC	5 (5%)	1 (1%)	6 (6%)	0·24

Data are n (%). Patients could report treatment emergent adverse events during monotherapy or combination therapy or both. Some p values could not be calculated with a model with both treatment and period as covariates. p values are for a global test across treatment groups. A-P=amitriptyline supplemented with pregabalin. D-P=duloxetine supplemented with pregabalin. NC=not calculated. P-A=pregabalin supplemented with amitriptyline.

Table 4: **Treatment-emergent adverse events reported in over 5% of patients during monotherapy (weeks 0–6, first 42 days), while on combination therapy (weeks 7–16, after 42 days), and on treatment pathway as a whole (weeks 0–16)**

As-Needed Inhaled Corticosteroids for Patients with Asthma

Background

Use of intermittent inhaled corticosteroids (ICS) for asthma now is recommended widely, but **uptake in the U.S. has been slow**

Global Initiative for Asthma (GINA) and the U.S. National Asthma Education and Prevention Program (NAEPP) guidelines: both recommend ICS/formoterol as a single maintenance and rescue inhaler for patients with moderate-to-severe asthma

The long-acting β-agonist (LABA) formoterol felt to be suitable for both roles since it is both long-acting and has quick onset of action

American Lung Association.

Asthma and COPD Medicines

Quick Reliever Medicines

Short-Acting Beta$_2$-Agonists (SABA)

Albuterol Sulfate HFA
albuterol sulfate
90 mcg
G

Albuterol Sulfate Neb
0.64 mg/3 ml; 1.25 mg/3 ml; 2.5 mg/3 ml

ProAir® Digihaler™
albuterol sulfate
117 mcg

ProAir® RespiClick
albuterol sulfate
117 mcg

Proventil® HFA
albuterol sulfate
120 mcg
G

Ventolin® HFA
albuterol sulfate
90 mcg

Xopenex HFA®
levalbuterol tartrate
50 mcg
G

Xopenex® Neb
levalbuterol hydrochloride
0.31 mg/3 ml; 0.63 mg/3 ml; 1.25 mg/3 ml
G

Short-Acting Muscarinic Antagonists (SAMA)

Atrovent® HFA
ipratropium bromide
17 mcg
C

Atrovent® Neb
ipratropium bromide
250/500 mcg
G

Short-Acting Combinations (SABA-SAMA)

Combivent® Respimat®
ipratropium bromide and albuterol
20/100 mcg
C

DuoNeb®
ipratropium bromide and albuterol sulfate
0.5 mg-3 mg/3 ml
G

How-To Videos

American Lung Association

Maintenance/Controller Medicines

Inhaled Corticosteroids (ICS) asthma only

Alvesco® HFA
ciclesonide
80/160 mcg

ArmonAir™ RespiClick®
fluticasone propionate
55/113/232 mcg

Arnuity® Ellipta®
fluticasone furoate
100/200 mcg

Asmanex® HFA
mometasone furoate
100/200 mcg

Asmanex® Twisthaler®
mometasone furoate
110/220 mcg

Budesonide Inhalation Suspension
0.25 mg/2 ml/.5 mg/2 ml/1 mg/2 ml

Flovent® Diskus®
fluticasone propionate
50/100/250 mcg

Flovent® HFA
fluticasone propionate
44/110/220 mcg

Pulmicort® Flexhaler®
budesonide
90/180 mcg

Pulmicort Respules®
budesonide inhalation suspension
0.25 mg/2 ml, 0.5 mg/2 ml, 1 mg/2 ml

QVAR® Redihaler™
beclomethasone dipropionate
40/80 mcg

Combination Therapy (Inhaled Corticosteroid - Long-Acting Beta$_2$-Agonists) (ICS-LABA)

Advair Diskus®
fluticasone propionate and salmeterol
100/50, 250/50, 500/50 mcg
G

Advair® HFA
fluticasone propionate and salmeterol xinafoate
45/21, 115/21, 230/21 mcg

AirDuo® RespiClick®
fluticasone propionate and salmeterol
55/14, 113/14, 232/14 mcg
G

Breo® Ellipta®
fluticasone and vilanterol
100/25, 200/25 mcg
G

Symbicort®
budesonide and formoterol fumarate dihydrate
80/4.5, 160/4.5 mcg
G
S

Dulera®
mometasone furoate and formoterol fumarate dihydrate
50/5, 100/5, 200/5 mcg
A
S

Wixela™ Inhub™
fluticasone propionate and salmeterol xinafoate
100/50, 250/50, 500/50 mcg

Triple Therapy (ICS-LABA-LAMA)

Trelegy Ellipta
fluticasone/vilanterol/umeclidinium
100 mcg/62.5 mcg/25 mcg A C
200 mcg/62.5 mcg/25 mcg A

Breztri Aerosphere®
budesonide glycopyrrolate formoterol fumarate
160/9/4.8 mcg
C

Long-Acting Muscarinic Antagonists (LAMA)

Incruse® Ellipta®
umeclidinium
62.5 mcg
C

Lonhala Magnair®
glycopyrrolate
25 mcg/1 ml
C

Spiriva® HandiHaler®
tiotropium bromide
18 mcg

Spiriva® Respimat®
tiotropium bromide
1.25 mcg

Tudorza™ Pressair™
aclidinim bromide
400 mcg
C

Yupelri® Neb
revefenacin
175 mcg/3 ml
C

Long-Acting Beta$_2$-Agonists (LABA) COPD only

Brovana® Neb
arformoterol
15 mcg

Perforomist® Neb
formoterol fumarate dihydrate
20 mcg

Serevent® Diskus®
salmeterol xinafoate
50 mcg

Striverdi® Respimat®
olodaterol hydrochloride
2.5 mcg

LAMA-LABA COPD only

Anoro® Ellipta
umeclidinium and vilanterol
55/22, 62.5/25 mcg

Bevespi Aerosphere®
glycopyrrolate and formoterol
9/4.8 mcg

Duaklir® Pressair®
aclidinium and formoterol
400/12 mcg

Stiolto® Respimat®
olodaterol and tiotropium bromide
2.5/2.5 mcg

Add-On Medicines

Monoclonal Antibody (biologics, injection) A

Cinqair®
reslizumab
100 mg

Dupixent®
dupilumab
100/200/300 mg

Fasenra™
benralizumab
30 mg

Nucala®
mepolizumab
100 mg

Tezspire™
tezepelumab-ekko
210 mg

Xolair®
omalizumab
75/150 mg

PDE4 Inhibitor

Daliresp®
roflumilast
250/500 mcg
C

Leukotriene Receptor Antagonists (LTRA)

Singulair®
montelukast sodium
4/5/10 mg

Zyflo®
zileuton ER
600 mg

Use a valved holding chamber/spacer

All HFA inhalers should be used with a compatible valved holding chamber/spacer.

Definitions

- ICS = Inhaled Corticosteroid
- ICS-LABA or LAMA-LABA = Combination Therapy
- ICS-LABA-LAMA = Triple Therapy
- LABA = Long-Acting Beta$_2$-Agonist
- LAMA = Long-Acting Muscarinic Antagonist
- LTRA = Leukotriene Receptor Antagonist
- SABA = Short-Acting Beta$_2$-Agonist
- SAMA = Short-Acting Muscarinic Antagonist
- SMART = Single Maintenance and Reliever Therapy

Disease States: A Asthma C COPD G Generic S SMART Therapy

Lung HelpLine: 1-800-LUNGUSA | Lung.org

Two Studies Published This Year

Both provide further support for using as-needed ICS for adolescents and adults with moderate-to-severe asthma — but both used albuterol plus ICS as the reliever combination

The recently updated (2020) U.S. guidelines endorse use of ICS/albuterol or ICS/formoterol as reliever therapy for adults with persistent asthma however, in the U.S., we are limited by:

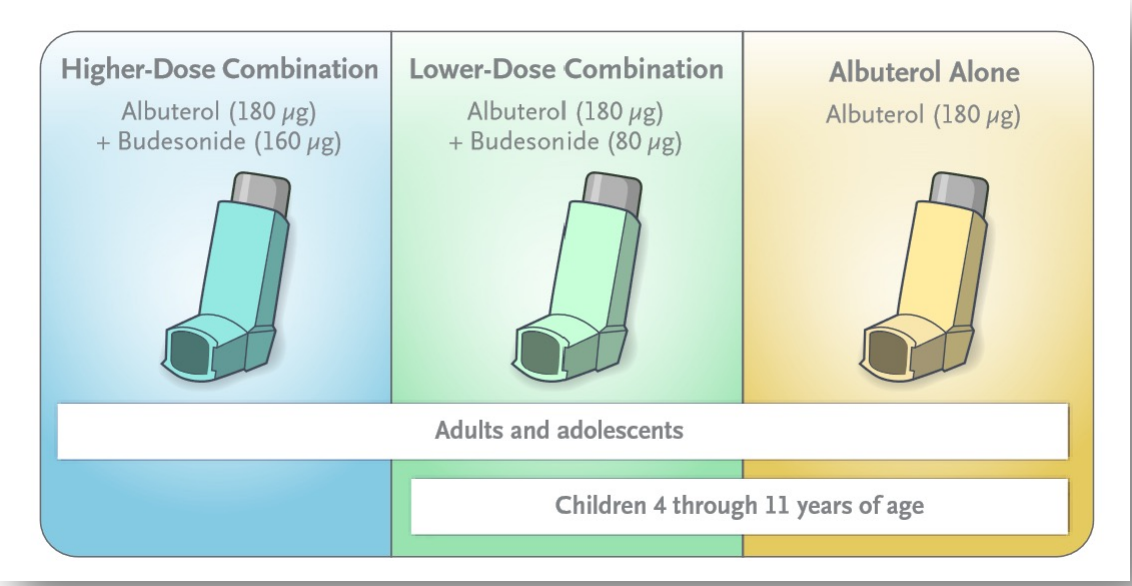
- cost of ICS inhalers (generic Symbicort still expensive)
- lack of U.S. FDA approval for rescue use of ICS/formoterol
- lack of an ICS/albuterol single inhaler

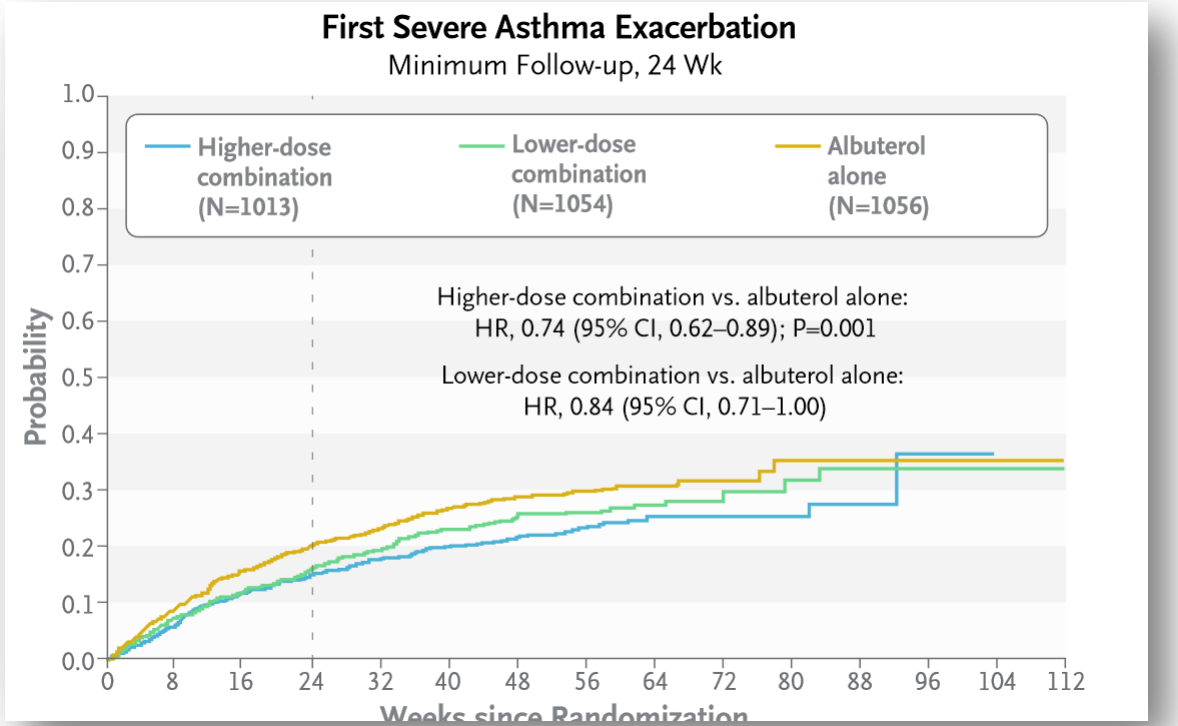
Study 1: Rescue ICS+Albuterol

3100 adolescents and adults with uncontrolled moderate-to-severe asthma received either **budesonide/albuterol or albuterol alone as a rescue inhaler** (while continuing their maintenance therapy with daily ICS or ICS/LABA)

- After 24 weeks, severe exacerbations requiring systemic steroids were less common in the high-dose budesonide/albuterol group than in the albuterol rescue group (annualized rate, 0.45 vs. 0.59)
- Patients who received inhaled ICS as part of their rescue plan received slightly less total systemic steroid exposure over the duration
- A small number of children 4 to 11 years of age were included; thus, no conclusions in this age group could be drawn

N Engl J Med 2022; 386:2071





N Engl J Med 2022; 386:2071

Study 2: More rescue ICS+Albuterol

In the U.S., asthma mortality has improved overall since 2001 but has increased among Black and Puerto Rican patients

Difference thought to be due to differential healthcare access including overuse of albuterol and underuse of inhaled corticosteroids (ICS)

Study: 1200 U.S. Black and Latino adults (considered to be at high risk for fatal asthma exacerbations) randomized to use **inhaled beclomethasone (80 µg) or placebo every time they used their albuterol rescue inhaler**

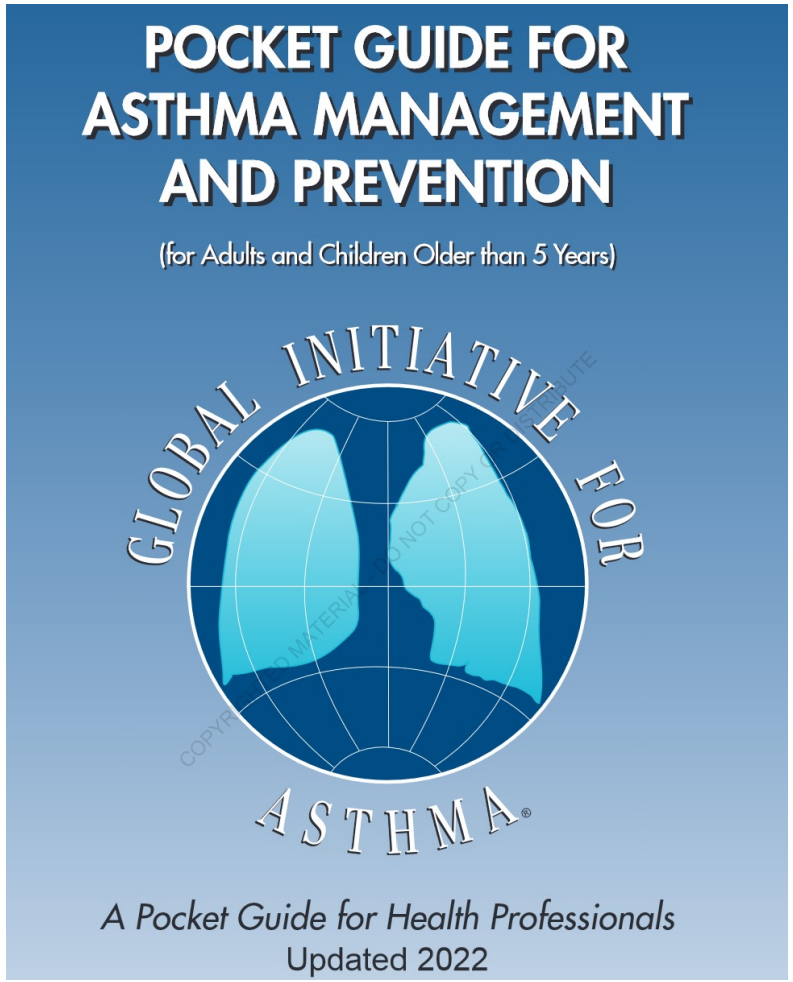
One puff of ICS was taken for every puff of albuterol used (or 5 puffs of ICS with each nebulized treatment)

Also continued their daily maintenance inhalers if they used

Over 15 months: annualized rate of severe asthma exacerbations was 15% lower among ICS users (0.69 vs. 0.82) and asthma symptoms were improved. An average of 1.1 canisters per year of additional ICS were used in the ICS group

N Engl J Med 2022; 386:1505

Based on these new 2022 studies, a good choice is 2-4 puffs of albuterol followed by 80 to 250 µg of beclomethasone equivalent every 4 hours as needed for asthma symptoms (in addition to a baseline controller if they use)



https://ginasthma.org

Global Initiative for Asthma - Global Initiative for Asthma - GINA

This is not a table of equivalence, but suggested total daily ICS doses for the 'low', 'medium' and 'high' dose options in Boxes 7 and 8. It is based on available studies and product information. Doses may be country-specific depending on local availability, regulatory labelling and clinical guidelines, and for mometasone, with addition of LAMA to ICS-LABA.

Low dose ICS provides most of the clinical benefit for most patients. However, ICS responsiveness varies between patients, so some patients may need **medium dose ICS** if asthma is uncontrolled despite good adherence and correct inhaler technique with low dose ICS.

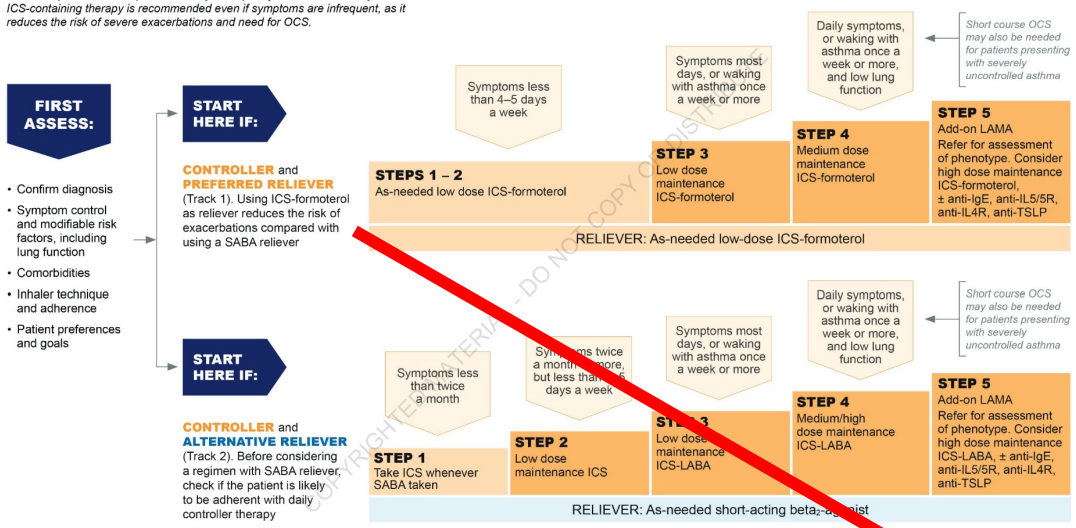
High dose ICS is needed by very few patients, and its long-term use is associated with an increased risk of local and systemic side-effects.

Adults and adolescents	**Total daily ICS dose (mcg)**		
Inhaled corticosteroid	**Low**	**Medium**	**High**
BDP (pMDI*, HFA)	200–500	>500–1000	>1000
BDP (DPI or pMDI, extrafine particle, HFA)	100–200	>200–400	>400
Budesonide (DPI or pMDI*, HFA)	200–400	>400–800	>800
Ciclesonide (pMDI, extrafine particle, HFA)	80–160	>160–320	>320
Fluticasone furoate (DPI)	100		200
Fluticasone propionate (DPI)	100–250	>250–500	>500
Fluticasone propionate (pMDI*, HFA)	100–250	>250–500	>500
Mometasone furoate (DPI)	Depends on DPI device		
Mometasone furoate (pMDI*, HFA)	200–400		400
Children 6–11 years	**Total daily ICS dose (mcg)**		
Inhaled corticosteroid	**Low**	**Medium**	**High**
BDP (pMDI*, HFA)	100–200	>200–400	>400
BDP (pMDI, extrafine particle, HFA)	50–100	>100–200	>200
Budesonide (DPI)	100–200	>200–400	>400
Budesonide (nebules)	250–500	>500–1000	>1000
Ciclesonide (pMDI, extrafine particle, HFA)	80	>80–160	>160
Fluticasone furoate (DPI)	50		n.a.
Fluticasone propionate (DPI)	50–100	>100–200	>200
Fluticasone propionate (pMDI*, HFA)	50–100	>100–200	>200
Mometasone furoate (pMDI*, HFA)	100		200

Box 7B. Initial treatment: adult or adolescents with a diagnosis of asthma

STARTING TREATMENT
in adults and adolescents with a diagnosis of asthma

Track 1 is preferred if the patient is likely to be poorly adherent with daily controller. ICS-containing therapy is recommended even if symptoms are infrequent, as it reduces the risk of severe exacerbations and need for OCS.



ICS: inhaled corticosteroid; SABA: short-acting beta$_2$-agonist
For initial asthma treatment in children 6–11 years, see Box 8B (p 28). For more details about treatment recommendations including supporting evidence, and clinical advice about implementation in different populations see the full GINA 2022 report (www.ginasthma.org). For more details about Step 5 add-on therapies, see Chapter 3E of the GINA report, or the GINA 2022 Short Guide on Difficult to Treat and Severe Asthma, and check eligibility criteria with local payers.

START HERE IF:

Symptoms less than 4–5 days a week

CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever

STEPS 1 – 2
As-needed low dose ICS-formoterol

RELIEVER:

AAFP 2023 Hypertension Guideline

AAFP Hypertension Guideline

Based on a systematic review of RCTs

AAFP endorsed JNC8 in 2014, reaffirmed it in 2019, developed a joint guideline with ACP in 2017

Have notably not endorsed other guidelines due to "*differences in methodologic rigor, insufficient consideration of harms, and the management of conflicts of interest*"

Still recommend using shared decision making along with the evidence

Ann Fam Med. 2023 Mar-Apr;21(2):190-191. doi: 10.1370/afm.2972.

2 Main Recommendations

Rec 1: AAFP treat adults with hypertension to a standard BP target <140/90 mm to reduce the risks of all-cause and CV mortality

Rec 2: Consider treating adults who have hypertension to a BP target <135/85 to reduce the risk of myocardial infarction, based on evidence showing a small additional benefit with this lower target (not mortality or stroke risk)

In general AAFP is more concerned about adverse of effects of lower targets, bias in some studies, early discontinuation of studies

Ann Fam Med. 2023 Mar-Apr;21(2):190-191. doi: 10.1370/afm.2972.

TABLE 4

Comparison of Recommended Blood Pressure Targets in Recent Guidelines

Guideline	18 to 59 years of age (mm Hg)	60 to 69 years of age (mm Hg)	70 to 79 years of age (mm Hg)	Older than 80 years (mm Hg)
2022 American Academy of Family Physicians*	< 140/90	< 140/90	< 140/90	< 140/90
2022 National Institute for Health and Care Excellence[13]	< 140/90	< 140/90	< 140/90	< 150/90
2021 European Society of Hypertension Council[14]	< 130/80†	< 130/80†	< 140/80	< 140/80
2020 International Society of Hypertension‡[44]	< 130/80	< 140/90§	< 140/90	< 140/90
2020 U.S. Department of Veterans Affairs/U.S. Department of Defense‖[15]	< 130/90¶	< 150/90	< 150/90	< 150/90
2017 American College of Cardiology/American Heart Association*[16]	< 130/80	< 130/80	< 130/80	< 130/80
2017 American College of Physicians and American Academy of Family Physicians[11]	—	< 150/90	< 150/90	< 150/90
2014 Eighth Joint National Committee[10]	< 140/90	< 150/90	< 150/90	< 150/90

*—Lower targets are reasonable based on clinical judgment and patient preferences or values.
†—A target of less than 140/90 mm Hg is recommended for patients with chronic kidney disease.
‡—Recommendation is to treat all patients to less than 140/90 mm Hg but states it is optimal to treat persons younger than 65 years and people with coronary artery disease, chronic kidney disease, heart failure, previous stroke, chronic obstructive pulmonary disease, or diabetes mellitus to less than 130/80 mm Hg (less than 140/80 mm Hg in older patients).
§—Recommendation is to transition from target of 130/80 mm Hg to 140/90 mm Hg at 65 years of age.
‖—A target of less than 140/90 mm Hg is recommended in patients with diabetes.
¶—Recommendation is to treat all patients 18 to 59 years of age (including those with diabetes) to a systolic blood pressure target of less than 130 mm Hg. For patients 30 years and older, a diastolic blood pressure target of less than 90 mm Hg is recommended.

Information from references 10, 11, 13-16, and 44.

Ann Fam Med. 2023 Mar-Apr;21(2):190-191. doi: 10.1370/afm.2972.

Clinical Guidance

Hypertension: Clinical Guidance and Practice Resources

Hypertension is a leading cause of death worldwide.* In the U.S., hypertension affects approximately 32% of adults** and costs between $131 and $198 billion annually, including costs of medications, health care services, and loss of productivity from premature death.*** Family physicians play a critical role in diagnosing, monitoring, and treating hypertension.

Screening Recommendations

Screening for Hypertension in Adults

Screening for High Blood Pressure in Children and Adolescents

Treatment and Management Recommendations

Blood Pressure Targets in Adults with Hypertension: A Clinical Practice Guideline from the AAFP

Slowing CKD

ACE/ARB in Advanced CKD

Q: In patients with advanced chronic kidney disease (stage IV or V), does the continued use of renin-angiotensin system inhibitors have a worsening effect on renal function?

UK Government funded study

Pts with GFR<30, not on dialysis, pts who were on ACE/ARB ≥ 6 months before the study began

Randomized to continue or discontinue the ACE/ARB

- 411 pts, median median creatinine 3.4 median eGFR of 18
- 45% were ≥ 65 and 36% had either type 2 or type 1 diabetes
- BP otherwise controlled by physician with other classes

N Engl J Med 2022;387(22):2021-2032

ACE/ARB in Advanced CKD

Results

- median follow-up of 3 years
- eGFR numerically higher with continued RAS inhibitor use (13.3 vs 12.6 mL/min/1.73 m^2), not statistically significant
- patients in the continuation group had a strong *trend* toward a lower rate of requiring renal replacement therapy (56% vs 62%; hazard ratio 1.28; 95% CI 0.99 - 1.65)
- Hospitalizations, CV events, and deaths were similar between groups
- Proteinuria/BP increased transiently in the discontinuation group, but later, no differences were noted between groups
- Adherence to the assigned treatment was very good and there was no difference between groups in serious adverse events
- Overall findings persuasive to *continue* these drugs unless worrisome hyperkalemia or sudden decline in GFR (starting less clear in advanced CKD)

N Engl J Med 2022;387(22):2021-2032

Other study: Empagliflozin Slows Progression of Chronic Kidney Disease

Systematic review and meta-analysis of SGLT2 inhibitor trials

13 trials involving 90k participants

Main efficacy outcomes

- kidney disease progression
- ≥50% decrease in estimated eGFR from randomization
- sustained low eGFR
- end-stage kidney disease
- death from kidney failure
- acute kidney injury
- composite of CV death or hospitalization for heart failure

Lancet 2022; 400, 1788-801

Empagliflozin Slows Progression of Chronic Kidney Disease

Results:

- Results beneficial in pts both with/without diabetes
- Reduced the risk of CKD progression by 37%
- Reduced the risk of acute kidney injury by 23%
- Reduced risk of CV death or hospitalization for heart failure by 23%
- Did not significantly reduce the risk of non-CV death (0.94, 0.88–1.02)
- Outcomes broadly similar irrespective of trial mean baseline eGFR

Lancet 2022; 400, 1788-801

Quicker Summaries

Quick Summaries

Canadian Syncope Risk Score: Validated internationally and now the best studied syncope risk stratification tool

Ann Intern Med 2022 Apr 26; [e-pub]

Pulse Oximetry (SpO2) is less accurate in patients with darker skin pigmentation, using ABG-derived SaO2 as a comparison. Black (and possibly Asian) patients more likely to have unrecognized hypoxemia. 6.2% of black pts vs 3.6% of white pts in an ICU

Crit Care Med 2022; 50:204

Another ICU study: avg SpO2 for black pts 97.6% (vs 96.7% for white pts) while having 95% and 96% SaO2 respectively. Hispanic pts on average in between

JAMA Intern Med 2022; 182:849

Quick Summaries

Men who have sex with men and transgender women who have or are at risk of HIV disease benefit from taking a single dose of doxycycline 200 mg following condomless sexual intercourse (NNT = 5). The patients studied were at high risk of STI based on history. Intervention group: lower likelihood of any STI at a quarterly visit. (11.8% vs 30.5%)

N Engl J Med 2023;388(14):1296-1306

Symptomatic recurrences in patients who had initially recovered from a COVID-19 infection are common: 44% in a placebo group of Covid treatments. Cough (44%), fatigue (35%) and headache most common

JAMA Network Open 2022; 5(10):e2238867

Quick Summaries

Among patients on statins, residual inflammatory risk (via hs-CRP) was a stronger predictor of future CV events and death than LDL (analysis of 31k pts with atherosclerosis on statin therapy who were participants in the PROMINENT, REDUCE-IT, and STRENGTH trials)

Lancet. 2023 Mar 3. doi: 10.1016/S0140-6736(23)00215-5

Treatment of mild chronic hypertension in pregnancy to a BP target of less than 140/90 mm/Hg is associated with better maternal outcomes, including less frequent preeclampsia with severe features and medically indicated preterm births.

Based on this study ("CHAP" study) ACOG "*recommends utilizing 140/90 as the threshold for initiation or titration of medical therapy for chronic hypertension in pregnancy, rather than the previously recommended threshold of 160/110*"

N Engl J Med 2022;386(19):1781-1791

And finally…

Ugh- time for this again

How much time does it take for a primary care clinician to implement all applicable guidelines for prevention and care in a typical practice?

- 2003 estimate: 7.4-8.6 hrs/day for just preventive care
- 2005: 10.6 hrs/day to “manage top ten chronic diseases”

So.. thought to be around 18hrs, doesn’t include acute care in the day

Things since 2005 things have not generally… *gotten more streamlined*

2022 Estimate

Answer: 26.7 hours a day!

- 14.1 hrs/day for preventive care
- 7.2 hrs/day for chronic disease care
- 2.2 hrs/day for acute care
- 3.2 hrs/day for documentation and inbox management

J Gen Intern Med 2023;38(1):147-155

Patient Panel Size Matters

Used hypothetical panels of 2500 patients

"Nationally representative adult patient panel by a PCP alone, and by a PCP as part of a team-based care model"

- Decrease panel size to 1500: subtract 10.7 hrs/day
- Increase panel size to 3000: add 5.3 hrs/day

J Gen Intern Med 2023;38(1):147-155

Team Based care works better

With team-based care (specifically CPC+ model), PCPs were estimated to require 9.3 hr/day total

- 2.0 hr/day for preventive care and
- 3.6 hr/day for chronic disease care
- 1.1 hr/day for acute care, and
- 2.6 hr/day for documentation and inbox management)

J Gen Intern Med 2023;38(1):147-155

Table 1 Estimated Time Needed to Provide Guideline-Based Preventive and Chronic Disease Care for an Average US 2500 Adult Patient Panel

		PCP-only care	Team-based care[a]		Strength of evidence for time estimates[b]
		PCP time (h/day)	PCP time (h/day)	Non-PCP time (h/day)	
Preventive care services	Weight loss to prevent obesity-related morbidity and mortality in adults: counseling	4.11	0.34	3.77	Strong
	Healthy diet and physical activity for cardiovascular disease prevention in adults with cardiovascular risk factors: behavioral counseling interventions	2.36	0.20	2.16	Moderate
	Unhealthy alcohol use in adults: counseling	1.77	0.30	1.48	Strong
	Abnormal blood glucose and type 2 diabetes mellitus: counseling	1.39	0.12	1.27	Moderate
	Tobacco smoking cessation in adults: counseling	0.89	0.15	0.74	Strong
	Sexually transmitted infections: behavioral counseling	0.74	0.12	0.62	Strong
	Unhealthy drug use: counseling	0.47	0.08	0.39	Strong
	Depression in adults: screening	0.31	0.00	0.31	Moderate
	Intimate partner violence, elder abuse, and abuse of vulnerable adults: counseling	0.18	0.01	0.17	Strong
	Statin use for the primary prevention of cardiovascular disease in adults: counseling	0.18	0.18	0.00	Strong
	Weight loss to prevent obesity-related morbidity and mortality in adults: screening	0.17	0.00	0.17	Strong
	Unhealthy alcohol use in adults: screening	0.17	0.00	0.17	Strong
	Tobacco smoking cessation in adults: screening	0.17	0.00	0.17	Strong
	Unhealthy drug use: screening	0.17	0.00	0.17	Strong
	Cervical cancer: screening	0.15	0.06	0.09	Moderate
	Hypertension in adults: screening	0.12	0.00	0.12	Weak
	Lung cancer: screening	0.10	0.10	0.00	Moderate
	Statin use for the primary prevention of cardiovascular disease in adults: screening	0.09	0.09	0.00	Strong
	Depression in adults: referral	0.09	0.09	0.00	Moderate
	Influenza vaccine	0.09	0.00	0.09	Weak
	Falls prevention in community-dwelling older adults: screening	0.07	0.07	0.00	Moderate
	Intimate partner violence, elder abuse, and abuse of vulnerable adults: screening	0.05	0.00	0.05	Strong
	Skin cancer prevention: behavioral	0.05	0.05	0.00	Moderate

CMS.gov
Centers for Medicare & Medicaid Services

Comprehensive Primary Care Plus

Select anywhere on the map below to view the interactive version

Source: Centers for Medicare & Medicaid Services

Timeline

January 1, 2017

Round 1 performance period begins

January 1, 2018

Round 2 performance period begins

December 31, 2021

Performance periods conclude

What is Team-Based Care?

“Pay for primary care teams to care for people, not doctors to deliver services.”

Save PCP time by shifting tasks traditionally performed by the PCP to other members of the care team

Affects things like pre-visit planning, lab/order entry, prep work (updated med list, problem lists, providing most recent labs), some documentation, ROS templates, vaccinations, initial workup (eg get an EKG for chest pain), screenings, completion of forms, etc

Can also utilize team members as scribes

Other conclusions

- PCP compensation makes it hard to hire new employees (to do the stuff)
- Lowering panel sizes: creates access problems unless more PCPs

Authors

“Models of primary care that leverage and reimburse appropriately for interdisciplinary teams can only partially rectify the US healthcare system”

How to Stay Current?

Staying Current

Read everything….? *(good luck!)*

Journal clubs with your colleagues

****Services: Essential Evidence, Journal Watch, etc**

Podcasts (POEM of the week, Frankly speaking, Curbsiders)

Teach, Precept

ABFM CKSA's: 25 q's per quarter (they also have an app)

Do a talk like this!

Thanks!