

Top 20 POEMs of 2020

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Financial disclosure

- I am paid by Wiley-Blackwell, Inc (a large publisher) to write POEMs and to edit *Essential Evidence*. My compensation is not tied to subscription rates.
- I am not paid to do the podcasts and they do not contain advertising

Brief biosketch

- Family physician, trained at University of Michigan. Currently Professor at UGA
- Editor of *Essential Evidence Plus* & Deputy Editor of *American Family Physician*
- Have written over 1200 POEMs in past 21 years
- Over 500 peer reviewed publications and 8 books
- Member USPSTF 2012-2015 and Fulbright Scholar at Royal College of Surgeons in Ireland (Dublin) 2019.

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What is a POEM?

POEMs = Patient Oriented Evidence that Matters

A POEM is a study that:

- addresses a common or important condition in primary care
- demonstrates improved patient oriented outcomes
- and matters because it could be a practice-changer

In other words: "Something you aren't already doing, and by doing it you improve how long or well your patients live"

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Comparing POEMs and DOEs (disease oriented evidence)

Example	DOE	POEM	Comment
Metformin	Lowers blood sugar	↓ all-cause mortality	POEM = DOE
Glitazones	Lowers blood sugar	↑ CV mortality, CHF	POEM ≠ DOE
Tight blood sugar control for Type 2 DM	Lower is always better!	No change and possibly even increased mortality	POEM ≠ DOE
Diuretics for BP	Diuretic ↓ BP	Diuretic ↓ mortality	POEM = DOE
Arthroscopic surgery for OA of knee	Cleaning joint debris is good	No change in symptoms/ function	POEM ≠ DOE

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POEMs are a practical filter to keep current

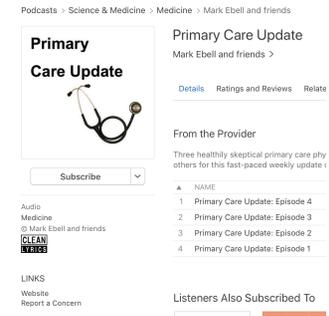
- Each year
 - 600,000 articles added to PubMed
 - 20,000 articles per year in top 100 English language clinical journals
 - **Only 250 meet the criteria for POEMs**
- Only 1.2% of articles in top journals, and only 0.04% of articles indexed in PubMed each year
- All Canadian Medical Association members get a POEM daily in their email, and each day 1000-2000 rate them for impact on their practice
- Today's talk is the top 20 from 2020 out of 254 total POEMs written that year.



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Where can you get more (or all) POEMs?

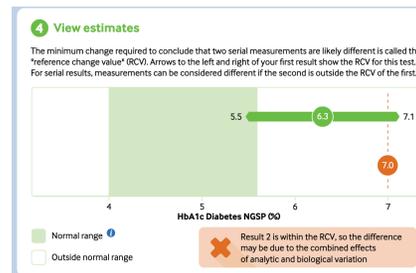
- To get all of them (emailed daily) subscribe to **Essential Evidence**: <http://www.essentialevidenceplus.com> (\$89/year, includes full access to Essential Evidence, a primary care, evidence-based, continuously updated online primary care reference)
- Weekly podcast on iTunes, search for "POEM of the Week" (490+ episodes)
- New: "Primary Care Update", John Hickner, Henry Barry, and I review 3 POEMs every 2 weeks.
- Plus, 4-5 monthly in *American Family Physician*, www.aafp.org/afp



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1. Lab results aren't an exact science

- We tend to assume that tests are precise, right? But there is more inherent variability than we think, these authors from UBC tell us. Analytic (laboratory) variability: 2% to 20%. Biological variability: changes based on the patient's physiology can be even larger
- Overall, can be as much as 50%. For example, single A1C of 6.3% can actually be as low as 5.5% or as high as 7.1%
- <https://www.bmj.com/content/368/bmj.m149>



BMJ 2020;368:m149.
doi: 10.1136/bmj.m149

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2. Balance of benefits and harms no longer favors aspirin for primary prevention

- Recommendations to use aspirin for primary prevention are largely based on older studies when patients smoked more, and we didn't treat lipids or hypertension as aggressively.
- This meta-analysis compared results from 4 large recent studies of aspirin vs placebo for primary prevention.
- In the newer studies, there was no longer any reduction in cancer death or cancer incidence (it increased in one study). There was also no longer a significant reduction in nonfatal MI or CV mortality.
- Overall, for every 1200 persons who take aspirin instead of placebo for 5 years, there will be 4 fewer major cardiac events and 3 fewer ischemic strokes, but there will be 3 more intracranial hemorrhages and 8 more major bleeding events.

Moriarty F, Ebell MH. A comparison of contemporary versus older studies of aspirin for primary prevention. *Fam Pract* 2020;37(3):290-296.

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3. Better primary care continuity = lower mortality risk

- Systematic review of 13 studies looking at association between continuity and mortality in primary care patients
- Continuity basically meant seeing the same clinician consistently
- Twelve studies evaluated all-cause mortality, 9 of which found a statistically significant lower mortality risk associated with greater continuity, 2 found no association, and 1 found that the association changed based on the measure of continuity used.
- Two studies found lower risks of CHD mortality with greater continuity and one found lower mortality risks from cancer or COPD.

Baker R, Freeman GK, Haggerty JL, Bankart MJ, Nockels KH. Primary medical care continuity and patient mortality: a systematic review. Br J Gen Pract 2020;70(698):e600-e611.

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4. For COPD exacerbations, antibiotics and steroids remain mainstay of treatment

- Systematic review of 68 studies with 11,000 patients experiencing COPD exacerbation; most in ED or hospital setting
- Systemic antibiotics (vs placebo) increased resolution of acute COPD exacerbations, decreased treatment failure, and reduced dyspnea in both outpatients and inpatients, regardless of the severity of the acute episode.
- Systemic steroids also decreased treatment failure and dyspnea, as compared with placebo or management without steroids.
- Neither antibiotics nor steroids had an effect on mortality, quality of life, hospital admissions, or recurrent exacerbations.
- Patients given steroids were more likely to have adverse events, especially endocrine-related events. Insufficient evidence for aminophylline and Mg+ sulfate

Dobler CC, Morrow AS, Beuschel B, et al. Pharmacologic therapies in patients with exacerbation of chronic obstructive pulmonary disease. Ann Intern Med 2020 Feb 25. doi: 10.7326/M19-3007.

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5. Increased daily steps associated with lower all-cause mortality

- Used NHANES data for persons wearing accelerometer between 2003-2006 and looked at association with mortality, adjusting for demographics, habits, and comorbidities
- Overall mean was 9124 steps/day.
- Strong association of higher mortality with fewer steps
 - < 4000: 76.7 deaths/1000 person-years
 - 4000 to 7999: 21.4 deaths/1000 person-years
 - 8000 to 11,999: 6.9 deaths/1000 person-years
 - 12,000+: 4.8 deaths/1000 person-years

Saint-Maurice PF, Troiano RP, Bassett Jr DR, et al. Association of daily step count and step intensity with mortality among US adults. JAMA 2020;323(12):1151-1160.

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Steps	Date
9,500	Jan 28, 2019
9,096	Jan 27, 2019
1,848	Jan 26, 2019
11,850	Jan 25, 2019
10,623	Jan 24, 2019
7,284	Jan 23, 2019
10,128	Jan 22, 2019
8,166	Jan 21, 2019
8,492	Jan 20, 2019
7,839	Jan 19, 2019
10,119	Jan 18, 2019
9,584	Jan 17, 2019
8,561	Jan 16, 2019
11,588	Jan 15, 2019
11,436	Jan 14, 2019

← Typical walking in January while in Athens. Range is 7,284 to 11,588 steps.

Steps	Date
10,894	Feb 14, 2019
13,980	Feb 13, 2019
15,546	Feb 12, 2019
14,049	Feb 11, 2019
13,487	Feb 10, 2019
12,082	Feb 9, 2019
13,542	Feb 8, 2019
18,288	Feb 7, 2019
8,216	Feb 6, 2019
6,889	Feb 5, 2019
12,534	Feb 4, 2019
7,853	Feb 3, 2019
8,976	Feb 2, 2019
15,989	Feb 1, 2019

Steps while living in Dublin, Ireland. Range is 10,894 to 18,288 steps →

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6. Acetaminophen no better than placebo for most pain, except maybe tension headache

- Systematic review of RCTs comparing acetaminophen with placebo for pain in adults.
- Only found 8 studies with 5890 patients
- Effective for episodic tension headaches (NNT = 22) and for complete pain relief of acute migraine (NNT = 12) and for some pain relief of acute migraine at 2 hours (NNT = 5).
- Not effective for acute low back pain, knee OA or hip OA
- Amazing how poorly studied this drug is.



Saragiotto BT, Shaheed CA, Maher CG. Paracetamol for pain in adults. *BMJ* 2019;367:16693.

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7. No benefit of adding muscle relaxants to ibuprofen for LBP

- RCT with 320 patients presenting to ESD with non-radicular low back pain for less than 2 weeks (mean 72 hours).
- All got ibuprofen 600 mg po tid prn. Randomized to baclofen, 10 mg, metaxalone 400 mg, tizanidine 2 mg, or placebo up to tid.
- All groups improved, no difference in any outcomes between groups.
- No difference in # reporting moderate to severe back pain one week later.
- Another study in 2015 found no difference between naproxen alone vs naproxen + cyclobenzaprine (Flexeril) or naproxen + Percocet for acute low back pain. (*JAMA* 2015; 314: 1572).

Friedman BW, Irizarry E, Solorzano C, et al. A randomized, placebo-controlled trial of ibuprofen plus metaxalone, tizanidine, or baclofen for acute low back pain. *Ann Emerg Med* 2019;74(4):512-520.

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8. ACR guidelines for gout

- Well done guideline: included primary care docs, identified 57 questions, used systematic reviews, and a clear process to develop recommendations.
- The following are some of the strong recommendations
 - Start urate-lowering therapy for patients with tophi, 2 or more flares per year, or those with radiographic evidence of joint damage attributable to gout
 - Use allopurinol as the preferred first-line medication, including for patients with stage 3 or worse chronic kidney disease
 - Treat patients to a serum urate target of less than 6 mg/dL.
 - When initiating ULT, use concomitant anti-inflammatory prophylactic therapy for at least 3 - 6 months.
 - Use colchicine, NSAIDs, or corticosteroids to manage gout flares.

FitzGerald JD, Dalbeth N, Mikuls T, et al. 2020 American College of Rheumatology guideline for the management of gout. *Arthritis Rheumatol* 2020;72(6):879-895

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9. ATS guideline for initiating smoking cessation therapy

- Well done guideline, no significant COI.
- 14 randomized trials (n = 7362) that compared varenicline with nicotine patches and 7 trials that compared varenicline with bupropion. RR for effectiveness 1.2 to 1.4 for comparison with nicotine, 1.3 to 1.4 for comparison with bupropion.
- Combination of varenicline + patch better than varenicline alone based on 3 studies.
- 4 trials of precontemplative smokers found that early treatment with varenicline was twice as effective in achieving abstinence than waiting for patients to become ready, but with more adverse effects.
- Overall fewer adverse effects with varenicline than other treatments.
- Final conclusion: varenicline should be first line treatment.

Leone FT, Zhang Y, Evers-Casey S, et al. Initiating pharmacologic treatment in tobacco-dependent adults. An official American Thoracic Society clinical practice guideline. *Am J Respir Crit Care Med* 2020;202(2):e5-e31.

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10. Sertraline reduces symptoms of depression in primary care

- Strength of this study was that it was in UK primary care setting, and pragmatically enrolled all patients with depressive symptoms (not just major depression, etc.) for whom the physician was in equipoise regarding meds
- Randomized 653 adults to sertraline 50 mg → 100 mg or placebo for 11 weeks. Had 85% follow-up. Mean PHQ 12/27 (moderate depression)
- Outcomes:
 - 6 weeks: PHQ 8 with sertraline and 8.8 with placebo (p = ns)
 - 12 weeks: PHQ 6.9 with sertraline, 8.0 with placebo (p < 0.05), and remission rate higher with sertraline (45% vs 35%, NNT = 10). Also lower anxiety score and better general mental health scores.

Lewis G, Duffy L, Ades A, et al. The clinical effectiveness of sertraline in primary care and the role of depression severity and duration (PANDA): a pragmatic, double-blind, placebo-controlled randomised trial. Lancet Psychiatry 2019;6(11):903-914.

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11. PEN-FAST rule identifies patients with low-risk PCN allergies

- Developed a simple clinical prediction rule called PEN-FAST in 622 patients with history of PCN allergy referred for allergy testing; 27% had history of angioedema or anaphylaxis. Validated in 945 new patients.
- AUROC 0.73 to 0.78 in validation populations (Australia, Tennessee)

	Points	Points	Risk of positive PCN allergy test
< Five years since last allergy event	2	0	< 1%
Anaphylaxis, angioedema, or Severe cutaneous adverse reaction	2	1 or 2	5%
Treatment required for an allergy episode	1	3	20%
		4-5	50%

Trubiano JA, Vogrin S, Chua KY, et al. Development and validation of a penicillin allergy clinical decision rule. JAMA Intern Med 2020;180(5):745-752.

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12. Clinical assessment of signs and symptoms still guides cellulitis diagnosis

- Systematic review of 8 studies of how to differentiate cellulitis from non-infectious skin conditions.
- Skin temperature differential of 0.5 C between limbs had high sensitivity (87% to 96%) so if < 0.5 C tends to rule out cellulitis.
- ALT-70 risk score also highly sensitive but not specific
 - Asymmetry (3 pts), Leukocytosis (1 pt), Tachycardia (1 pt), Age>70 (2 pts)
 - Score ≥ 3 was 97% sensitive but only 30% to 50% specific. Rules out if < 3 points.
- Individual signs and symptoms most predictive of cellulitis include unilateral involvement, previous cellulitis, chronic leg edema, excoriating skin disease, tinea pedis, and BMI > 30
- Provide useful infographic: <https://www.bmj.com/content/368/bmj.m54/infographic>

Edwards G, Freeman K, Llewelyn MJ, Hayward G. What diagnostic strategies can help differentiate cellulitis from other causes of red legs in primary care? BMJ 2020;368:m54. doi: 10.1136/bmj.m54

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13. BMD testing: one and done

- 7419 women in WHI age 50-79 who had baseline BMD measured and a second BMD 3 years later. No treatment other than calcium and vit D.
- Followed for average of 12 years, during which time 2% had a hip fracture and 10% a major osteoporotic fracture.
- Key finding: adding information from the 2nd BMD measurement, including difference or change scores, did not improve prediction of fracture.
- Another study found similar results in older patients (JAMA 2013;310:1256) , and a third study found that BMD monitoring is not necessary after starting treatment with a bisphosphonate (BMJ 2009;338:b2266).
- BL: Screen women at 65, and higher risk persons earlier, but no need to rescreen unless BMD is borderline and new information would change treatment. FRAX is useful risk score: <https://www.sheffield.ac.uk/FRAX/tool.aspx>

Crandall CJ, Larson J, Wright NC, et al. Serial bone density measurement and incident fracture risk discrimination in postmenopausal women. JAMA Intern Med 2020;180(9):1232-1240.

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14. Compression reduces recurrent cellulitis in patients with chronic leg edema

- Studied 84 patients with edema for 3+ months and 2+ episodes of cellulitis in the same leg in past 2 years. Mean age 65, 49% women, 63% edema > 5 yrs
- Randomized to compression garments + education vs education only
- Garments were mostly knee high compression stockings.
- The trial was stopped early when an interim analysis revealed that episodes of cellulitis were much less common in the compression group (15% vs 40%, $p = .002$, and NNT = 4).
- Fewer patients in the compression group were hospitalized for cellulitis (3 vs 6).
- A lymphedema quality-of-life score also improved more in the intervention group.

Webb E, Neeman T, Bowden FJ, Gaida J, Mumford V, Bissett B. Compression therapy to prevent recurrent cellulitis of the leg. N Engl J Med 2020;383(7):630-639.

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15. CXR, ECG and Pap tests in low risk patients → more tests and procedures

- Choosing Wisely identified 3 scenarios that represent **low value care**: CXR for low risk patients, ECG for low risk patients, and Pap < 21 or > 69 years
- Identified patients with low value test shortly after annual exam, and then looked at number of follow-up tests done in next 3-6 months
- CXR → 3x pulmonology visit, 8x bronchoscopy, 3x CT scan
- ECG → 3x cardiologist, 4x cardiac test, 3x cardiac cath
- Pap < 21 or > 69 → 16x more Paps, 6x colposcopy
- BL: Ordering low value tests, identified as being unlikely to benefit patient, lead to much higher costs, inconvenience, worry and harm

Bouck Z, Calzavar AJ, Ivers NM, et al. Association of low-value testing with subsequent health care use and clinical outcomes among low-risk primary care outpatients undergoing an annual health examination. JAMA Intern Med 2020;180(7):973-983

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In closing, some quick takeaways...

17. Greater improvement in WOMAC scores for knee osteoarthritis with PT than with steroid injections (N Engl J Med 2020;382(15):1420)
18. Large Swedish registry study found women getting HPV vaccine, especially before age 17, much less likely to be diagnosed with invasive cervical cancer (N Engl J Med 2020;383(14):1340).
19. For toenail onychomycosis, continuous terbinafine 250 mg or continuous itraconazole 200 mg for 12 weeks to 24 weeks are the preferred therapies (Br J Dermatol 2019;182(2):287).
20. Following a high-quality colonoscopy, patients at average risk with no neoplasm had the same rate of developing colorectal CA or dying from it in the 10- to 17-year interval as compared with the first 5-year interval and the 5- to 10-year interval (Ann Intern Med 2020;173(2):81)

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Thank you!



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