Key Articles & Clinical Developments of 2015 in Family Medicine

WHAT WAS IMPORTANT...

...AT LEAST TO SOME OF US

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UNM FAMILY AND COMMUNITY MEDICINE
What This Talk is About...
How Did I Choose What I Chose?

- Our Faculty
- Essential Evidence
- Journal Watch
- “Top of 2015” Lists

Prioritized:
- key areas of FM practice
- might directly change clinical practice
- might be leading to paradigm changes
- Fun
The Blood Pressure Saga Continues
Reminder: JNC8 BP Goals

- **All pts**: 90 (Diastolic)
- **Age 18-59, Diabetes, CKD**: 140 (Systolic)
- **Age ≥60**: 150 (Systolic)

(JNC8 was based largely on RCT data)
SPRINT Trial

- ACCORD (2010): treating pts with DM2 and hypertension to systolic goal of <120 wasn’t better than <140 (4,733 patients enrolled)
- Now SPRINT: same <140 vs <120 systolic comparison
  - 9361 “high risk” non diabetic patients
  - Trial stopped after 3.3 years (early)
  - Nonfatal + fatal adverse CV events lower in <120 group
  - Some adverse events higher in <120 group
  - Mean # of BP meds: 1.8 in <140 systolic group, 2.8 in <120
Sprint Outcomes

- Reduction in all cause mortality
  - 3.3% vs 4.5%, NNT 83 over 3 years
- Reduction in CV mortality
  - 0.8% vs 1.4%, NNT 167 over 3.3 years
- Reduction in heart failure development
  - 1.3% vs 2.1%, NNT 125 over 3.3 years

## Table 2. Primary and Secondary Outcomes and Renal Outcomes.\(^*\)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intensive Treatment</th>
<th>Standard Treatment</th>
<th>Hazard Ratio (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no. of patients (%)</td>
<td>% per year</td>
<td>no. of patients (%)</td>
<td>% per year</td>
</tr>
<tr>
<td>All participants (N = 4678)</td>
<td>243 (5.2)</td>
<td>1.65</td>
<td>319 (6.8)</td>
<td>2.19</td>
</tr>
<tr>
<td>Primary outcome(^†)</td>
<td>97 (2.1)</td>
<td>0.65</td>
<td>116 (2.5)</td>
<td>0.78</td>
</tr>
<tr>
<td>Secondary outcomes</td>
<td>40 (0.9)</td>
<td>0.27</td>
<td>40 (0.9)</td>
<td>0.27</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>62 (1.3)</td>
<td>0.41</td>
<td>70 (1.5)</td>
<td>0.47</td>
</tr>
<tr>
<td>Stroke</td>
<td>62 (1.3)</td>
<td>0.41</td>
<td>100 (2.1)</td>
<td>0.67</td>
</tr>
<tr>
<td>Heart failure</td>
<td>37 (0.8)</td>
<td>0.25</td>
<td>65 (1.4)</td>
<td>0.43</td>
</tr>
<tr>
<td>Death from cardiovascular causes</td>
<td>155 (3.3)</td>
<td>1.03</td>
<td>210 (4.5)</td>
<td>1.40</td>
</tr>
<tr>
<td>Death from any cause</td>
<td>332 (7.1)</td>
<td>2.25</td>
<td>423 (9.0)</td>
<td>2.90</td>
</tr>
<tr>
<td>Participants with CKD at baseline (N = 1330)</td>
<td>14 (1.1)</td>
<td>0.33</td>
<td>15 (1.1)</td>
<td>0.36</td>
</tr>
<tr>
<td>Composite renal outcome(^‡)</td>
<td>10 (0.8)</td>
<td>0.23</td>
<td>11 (0.8)</td>
<td>0.26</td>
</tr>
<tr>
<td>≥50% reduction in estimated GFR(^§)</td>
<td>6 (0.5)</td>
<td>0.14</td>
<td>10 (0.8)</td>
<td>0.24</td>
</tr>
<tr>
<td>Kidney transplantation</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Incident albuminuria(^¶)</td>
<td>49/526 (9.3)</td>
<td>3.02</td>
<td>59/500 (11.8)</td>
<td>3.90</td>
</tr>
<tr>
<td>Participants without CKD at baseline (N = 3332)</td>
<td>127 (3.8)</td>
<td>1.21</td>
<td>37 (1.1)</td>
<td>0.35</td>
</tr>
<tr>
<td>≥30% reduction in estimated GFR to &lt;60 ml/min/1.73 m(^3)</td>
<td>110/1769 (6.2)</td>
<td>2.00</td>
<td>135/1831 (7.4)</td>
<td>2.41</td>
</tr>
</tbody>
</table>

\(^*\) CI denotes confidence interval, and CKD chronic kidney disease.
\(^†\) The primary outcome was the first occurrence of myocardial infarction, acute coronary syndrome, stroke, heart failure, or death from cardiovascular causes.
\(^‡\) The composite renal outcome for participants with CKD at baseline was the first occurrence of a reduction in the estimated GFR of 50% or more, long-term dialysis, or kidney transplantation.
\(^§\) Reductions in the estimated GFR were confirmed by a second laboratory test at least 90 days later.
\(^¶\) Incident albuminuria was defined by a doubling of the ratio of urinary albumin (in milligrams) to creatinine (in grams) from less than 10 at baseline to greater than 10 during follow-up. The denominators for number of patients represent those without albuminuria at baseline.
\(^||\) No long-term dialysis or kidney transplantation was reported among participants without CKD at baseline.
Some thoughts...

- Was ACCORD underpowered?
- High risk group
- Less than ½ of the <120 systolic group met that target
- BP measurements were done carefully...they let people sit and equilibrate, 3 readings averaged
- Excluded:
  - resistant hypertension
  - Diabetes
  - Stroke history
  - Institutionalized Elderly
- Increased complications: syncope, electrolyte abnormalities, AKI
What now?

- Well...it’s unclear
- very challenging to implement <120 goal
- A reasonable editorial suggested <130 systolic for those over 50 without DM or stroke
- Some felt the rush to make the data public felt “rushed”
Spironolactone for Resistant Hypertension

- “Resistant Hypertension” = uncontrolled BP despite treatment with meds from 3 classes
- Interesting study design (rotated meds)
- Spironolactone lowered systolic~9mmHg, others ~4
- Don’t use if GFR <45

Williams B et al. Spironolactone versus placebo, bisoprolol, and doxazosin to determine the optimal treatment for drug-resistant hypertension (PATHWAY-2): A randomised, double-blind, crossover trial. Lancet 2015 Sep 20; [e-pub]
The Cholesterol Story Also Continues
ACC/AHA Guidelines

High Potency Statin

Clinical Atherosclerotic Cardiovascular Disease

LDL > 190 mg/dL

High Potency Statin

Diabetics

40 to 75 years old
LDL 70-189 mg/dL

Start with Moderate Potency Statin

40 to 75 years old
LDL 70-189 mg/dL

Moderate to High Potency Statin

10-Year Risk > 7.5%
Issues with the ACC/AHA Risk Calculator?

Challenge to risk calculator: ACC/AHA calculator may overestimate 10 year risk, causing more people to need statins


<table>
<thead>
<tr>
<th>ACC/AHA 10 year risk</th>
<th>Observed in Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5%-10%</td>
<td>3.0% in men</td>
</tr>
<tr>
<td></td>
<td>5.1% in women</td>
</tr>
</tbody>
</table>
ACC/AHA Guidelines

CLINICAL ATHEROSCLEROTIC CARDIOVASCULAR DISEASE

HIGH POTENCY STATIN

LDL > 190 MG/DL

HIGH POTENCY STATIN

40 TO 75 YEARS OLD
LDL 70-189 MG/DL

DIABETICS

START WITH MODERATE POTENCY STATIN

40 TO 75 YEARS OLD
LDL 70-189 MG/DL

MODERATE TO HIGH POTENCY STATIN

10-YEAR RISK > 7.5%
Steroids for Community-Acquired Pneumonia (CAP)
As many as 20% of patients with CAP worsen despite guideline-adherent antimicrobial therapy.

When a pathogen is identified (only 38% of the time), most commonly it’s a virus (about 60% of identified pathogens).

Small RCT

Spanish RCT: 120 patients with severe CAP

- Steroid group less likely to experience a multicomponent treatment-failure endpoint (3% vs 14%, P = 0.04)
  - Mechanical ventilation
  - Shock
  - Death

- Also less radiographic progression (13% vs. 31%)

Swiss trial of 785 patients
- included patients with less-severe CAP
- results: steroids significantly shortened time to clinical stability from 4.4 days to 3.0 days

Swiss Trial: Exclusion Criteria

- permanent inability for informed consent
- active intravenous drug use
- acute burn injury
- gastrointestinal bleeding within the past 3 months
- known adrenal insufficiency
- a condition requiring more than 0.5mg/kg per day prednisone equivalent
- pregnancy or breastfeeding
- severe immunosuppression

Swiss trial:
- LOS reduced by 1 day (7 to 6 days...)
- No significant increase in complications associated with community-acquired pneumonia

4. HEALTH CARE ACTIVITIES

4.5. Average length of stay in hospitals

4.5.1 Average length of stay in hospital for all causes, 2000 and 2009 (or nearest year)

1. The data for Japan refer to average length of stay for acute care (excluding long-term care beds in hospitals).

Source: OECD Health Data 2011; WHO-Europe for the Russian Federation and national sources for other non-OECD countries.

StatLink: http://dx.doi.org/10.1787/888932524659
Meta-analysis

Meta-analysis: 13 RCT’s (including the two 2015 trials)

• Results: moderate systemic corticosteroid doses (20–60 mg of prednisone or equivalent total daily dose) led to these differences:
  ○ ARDS (0.4% vs. 3.0%; number needed to treat, 38)
  ○ mechanical ventilation (3.1% vs. 5.7%; NNT, 38)
  ○ shortened hospital length of stay (by 2.9 days!)
  ○ Hyperglycemia requiring treatment: more common in corticosteroid group
  ○ other adverse events were similar in corticosteroid and placebo groups

• Mortality Rates
  ○ Lower all-cause mortality with steroids was of borderline statistical significance in the entire treatment population (5.3% vs. 7.9%; NNT, 38)
  ○ significant mortality benefit occurred in patients with severe pneumonia (7.4% vs. 22.0%; NNT, 7)
Conclusions?

- More research ongoing
- Notably in a Spanish H1N1 study pts did worse
- Consider 5-7 days of 20-60mg daily prednisone (40mg?) for hospitalized pts with CAP

HIV Pre-Exposure Prophylaxis
Background: HIV Pre-Exposure Prophylaxis

- New HIV infections continue. Example: 1 new HIV infection per day in the city of San Francisco
- Tenofovir/emtricitabine (*Truvada*): FDA Approved in 2012 for HIV Pre-exposure prophylaxis
- Cochrane review 2012
  - TDF-FTC versus placebo showed a reduction in the risk of acquiring HIV infection (RR 0.49; 95% CI 0.28 to 0.85; 8918 participants)
New Study this year: “On Demand” Truvada

RCT (government funded)

- 400 HIV negative men with unprotected anal intercourse with ≥ 2 men in previous 6 months
- Excluded: impaired renal function, hepatitis B/C
- Intervention:
  - 2 pills between 2 and 24 hours before intercourse
  - 3rd pill at 24 hrs afterward
  - 4th at 48 hrs after first 2 taken
- Followed for median 9.3 months
PrEP

- Intervention group less likely to develop HIV (14 vs 2 infections)
  - 6.6 vs 0.91 per 100 person-years of follow up
  - NNT = 17 per year

With a little pill, could one city’s AIDS epidemic be ending?

Matthew Sachs, 29, is a graduate student in San Francisco who is HIV-negative. He lists his PrEP status on social media. (Nick Otto for The Washington Post)

By Ariana Eunjung Cha  January 26  Follow @arileun jung

SAN FRANCISCO — On online dating sites, Matthew Sachs identifies himself as a 5-foot-8, 130-pound grad student who likes hiking, performance art and community service. He says he’s interested in meeting a broad range of guys, from jocks to geeks, and notes that — oh, by the way — he’s “On PrEP.”
Long Term ASA after VTE
Long term ASA for DVT (late 2014)

- Meta-analysis (of 2 trials total ~1200 patients)
- Nonpregnant adults with a first unprovoked DVT or PE
- aspirin 100mg QD vs matching placebo (after anticoagulation period ends)

Long term ASA for DVT

- Rate of recurrent VTE ~ 1/3 lower in the aspirin group (5.1% vs 7.5% per year; P = .008; NNT = 42 per year)
- Similar reduction for DVT or PE
- no difference in major bleeding
Out-of-Hospital Births in the U.S.
Out-of-Hospital Births in the U.S. Background

- Rate of out-of-hospital birth in the U.S. increasing, data on safety/outcomes is evolving
- Rate of C-sections in hospitals is more than double 1970, yet no change in intrapartum fetal mortality
- Data problem: misclassification of transfers as “hospital births”
- Other national health systems more uniform
- Recent addition of field in the Oregon birth certificate: “intended delivery location”
New Study

- Data
  - 75,923 planned and completed hospital births in Oregon
  - 1968 completed home births
  - 1235 completed birth-center deliveries
  - Excluded unplanned home births

- No difference in statistics based on “actual place of birth”

- When births reclassified based on intended site: higher perinatal mortality out of hospital (3.9 vs 1.8 per 1000 births)

- Note: inability to distinguish between transfers from birth centers and transfers from home
B  Cesarean Delivery

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>No. of Events</th>
<th>Adjusted Odd Ratios</th>
<th>P Value for Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparous</td>
<td>7,378</td>
<td></td>
<td>&lt;0.001</td>
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<tr>
<td>Multiparous</td>
<td>11,517</td>
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<td></td>
</tr>
<tr>
<td>Maternal age</td>
<td></td>
<td></td>
<td>0.93</td>
</tr>
<tr>
<td>&lt;35 yr</td>
<td>14,922</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥35 yr</td>
<td>3,973</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal education</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>≤12 yr</td>
<td>6,956</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;12 yr</td>
<td>11,846</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal risk profile</td>
<td></td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>High-risk</td>
<td>3,583</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-risk</td>
<td>15,312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Graph showing decreased and increased risk](image)
Composite neonatal outcome: fetal death, infant death, a 5-minute Apgar score of less than 4, or neonatal seizures
Positive Existing Data on Out-of-Hospital Births

- 2013: 15,574 women in 79 midwifery-led U.S. birth centers, in 33 states had good outcomes.


- More data (and guidelines) out there...largely from other countries and Midwifery journals.


  Torjesen I. Midwife led delivery is safer than a labour ward for low risk pregnancies, says NICE guidance. BMJ 2014;349:g7421.
Should all babies in the U.S. be born in a hospital?

- No
- Other national systems: integrated out-of-hospital delivery infrastructure, training regulation and transfer protocols
- Serious adverse events were rare in all settings covered. Even in this study, out of hospital births were associated with an “excess” of <1 fetal death/1000 deliveries
- Also: is Oregon a “worst case scenario?”
Considerations for Out-of-Hospital Birth

- How close is the hospital?
- Is there a relationship with an OB unit?
- Is the midwife skilled?
- Avoid high risk births out of hospital
- Ultimately it’s a question of informed decision making

VBAC at Home?

- **Maternal/neonatal outcomes for planned VBAC at home**
  - 12,092 women without prior cesarean
  - 1,052 women with a prior cesarean
  - Transfer rates 18% for women with prior cesarean, 7% for others
  - 4.75 neonatal deaths per 1000 in prior cesarean group vs 1.24/1000 in control group
  - Higher rates of some other complications

- **Consider avoiding VBAC at home**

Quicker Summaries
More Questions About A1C

- No reduction in CV or all-cause mortality at 10 years for T2DM in “intensive” glycemic control
- A1C 6.9% vs 8.4% in “usual care”
- VA study, largely in men (97%)
- Small improvement in the morbidity outcome (combo of MI, CVA or new/worsening HF)

Goodhart’s Law

"When a measure becomes a target, it ceases to be a good measure."
Swedish study: parents of 1,209 7-8 year olds were sent a survey

- Hand washing dishes: associated with lower rate of allergic disease development
- 12% hand-washed dishes
- Odds ratio 0.57 (0.37-0.85)

Pediatrics: Back up Strep Culture?

- Back up Cx not needed for Neg rapid strep in a country with low incidence of rheumatic fever (like the U.S.)

- Using confirmatory cultures to back up “RADT’s” costs >$8 million per additional case of rheumatic heart disease prevented

- Giving patients financial incentives helps them quit smoking
  

- Drug therapy for PTSD works but doesn’t work great (meta-analysis). Paxil may be slightly better than others

Platelet-rich plasma injections aren’t better than hyaluronic acid for knee DJD


Sterile gloves aren’t needed for minor skin excisions

• USPSTF says there isn’t evidence to support routine screening for thyroid disease


• ACP releases a practice guideline that says don’t screen low-risk adults for cardiac disease

The latest duty hour reforms haven’t had a measurable effect on mortality or hospital readmissions


Prevalence of depression and depressive symptoms among residents is...depressingly high (28.8%)

- Patient navigators slightly decrease (4%) readmission rates for older patients, and increase (12%) readmissions in younger patients

Bridging Therapy

- Bridging therapy, more harm in both:
  - Atrial fibrillation


  - Low risk VTE patients who need warfarin interrupted for procedures

Most Importantly...
Health Advice on TV Medical Talk Shows

- TV docs: 54% of their recommendations had some evidence to support them
  - “The Doctors” 53%
  - Dr. Oz: 33%

Spicy Foods...

Chinese Population based prospective cohort study

- 199,293 men and 288,082 women aged 30 to 79
- Spicy food consumption: inverse associations with total mortality in both men & women (after adjustment for other risk factors)

Jun LV Consumption of spicy foods and total and cause specific mortality: population based cohort study. BMJ 2015;351:h3942
Table 2. Association of weekly spicy food consumption with total and cause specific mortality among 487,375 participants. Values are hazard ratios (95% CIs) unless stated otherwise.

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>No of participants</th>
<th>Frequency of spicy food consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less than once a week*</td>
</tr>
<tr>
<td>No of participants</td>
<td>487,375</td>
<td>278,491</td>
</tr>
<tr>
<td>No of person years</td>
<td>3,500,004</td>
<td>1,990,589</td>
</tr>
<tr>
<td>All causes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of deaths†</td>
<td>20,224</td>
<td>12,145</td>
</tr>
<tr>
<td>Model 1</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Model 3</td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>
THE HOTTEST SHOW ON EARTH!
MARCH 4-6, 2016 AT SANDIA RESORT & CASINO
ALBUQUERQUE, NM
How to Stay Current?

- Journal Watch
- Essential Evidence
- Run your own clinic “journal club”
THANKS!