Results from a Randomized Trial Comparing Strategies for Helping CHCs Implement Guideline-Concordant Cardioprotective Care

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SPREAD-NET Study: Team and funding

- OCHIN: Stuart Cowburn, Arwen Bunce, Joan Nelson, Chris Nelson, Jee Oakley
- Kaiser Permanente Center for Health Research: Rachel Gold, Jim Davis, Joanna Bulkley, Inga Gruss, Nancy Perrin
- OHSU: Beth Hicks, Kris Gowen, Deb Cohen
- Advisors: Michael Horberg, Jim Dearing
- Study of Practices Enabling Implementation and Adaptation in the Safety Net (SPREAD-NET): NHLBI (R01HL120894)

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Setting – OCHIN (www.ochin.org)

- Non-profit, full service HIT provider for CHCs
- 1 centrally managed Epic© EHR
- Reporting, decision support, practice coaching, workflow design, +
- >600 Epic© member clinics, 20 states (and growing!); based in PDX
- >2,500,000 patients seen in last 3 years
  - 51% Medicaid; 10% Medicare; 21% uninsured
  - 30% Hispanic; 22% Spanish primary language
  - 1% Am-Ind / AK; 5% Asian / PI; 17% Black; 66% white; 9% unknown
  - 70% <200 FPL
- Research using OCHIN data since 2007

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Background

- Dissemination of care guidelines remains suboptimal
- Which 'implementation strategies' work best when incorporating new guidelines, particularly in CHCs?
- In most past research in CHCs, implementation strategies:
  - Used to help adopt a *specific intervention*
  - Did not explicitly *test* the strategies' effectiveness
- Rarely studied:
  - *Which strategies* best support guideline adoption in CHCs, overall
  - Or *compared to* other implementation strategies

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Background

- We first showed: CHCs *can* adopt EHR decision support tools – with intensive implementation support (Gold et al, IS, 2015)
  - Peer assistance from clinic staff (2.5 FTE: 11 clinics)
  - Monthly meetings between study team and clinic leaders; audit & feedback
- Q: Can less-intensive, more scalable implementation strategies improve CHCs' guideline adoption?
- … we compared how increasingly intensive implementation support helped CHCs adopt EHR tools / apply care guidelines
- H1: More support → more adoption of tools, guideline-based care

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Research Question

- Quantitative: Does increased clinic support result in an additive increase in the rate of patients receiving appropriate prescription(s) for cardioprotective medication(s)?
  - Hypothesis: As clinic support increases, so will the rate of eligible patients receiving a statin and / or an ACE/ARB prescription.
- Qualitative: What factors affected the changes (or lack of changes) seen in the quantitative measures?

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The Innovation

- *Clinical Decision Support – 'CVD Bundle'* – EHR tools with guideline-based CVD care recommendations:
  - Alert: If patient indicated for but not prescribed recommended ACE/ARB and statin, or recommended statin dosage
  - Alert: To promote accurate charting of hypertension and DM
  - Roster: To identify patients indicated for but not prescribed ACE/ARB or statin

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Methods overview

- Pragmatic trial
- 29 CHC clinics - share OCHIN's Epic© EHR
- Cluster-randomized to:
  - Arm 1 low-intensity implementation support (9 clinics / 4 organizations)
  - Arm 2 medium-intensity implementation support (11 clinics / 4 organizations)
  - Arm 3 high-intensity implementation support (9 clinics / 4 organizations)
- Comparison group (≈300 clinics)
- CVD Bundle activated May 2015
- Implementation support began 7/2015; clinics followed for 3 years

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Methods:
Intervention → Implementation Strategies

Arm 1	CVD Bundle Implementation Toolkit – how to: - Find and use the CVD Bundle components in the EHR - Use practice change techniques to support use of the Bundle + Annual overview webinars
Arm 2	Same as Arm 1, + clinic representatives attend 2-day in person training on CVD Bundle, the Toolkit, & change management + Quarterly 'adaptive' training webinars
Arm 3	Same as Arm 2, + offer of practice facilitation: 3-5 on-site visits / year for 3 years
Comparison group	CVD Bundle available in EMR. No intervention.

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SPREAD-NET Study Methods:
Analyses – Outcomes

- Primary
  - Rate of prescriptions for the indicated statin and / or ACE/ARB medication(s)
- Secondary
  - Rate of patients prescribed a statin at the correct dose

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Results:
Study Clinic Adult Patients with DM, 5/30/2014

	Arm 1	Arm 2	Arm 3	Comparison
Total patients with DM	3,849	5,099	3,370	33,638
% Indicated for statin	85.7	83.2	84.6	84.0
% Indicated for ACEI/ARB	67.3	70.2	70.3	67.8

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Process: Trainings

- Arm 1: 9 clinics / 4 organizations
  - - 9 orientation webinar attendees
- Arm 2: 11 clinics / 4 organizations
  - - 7 orientation webinar attendees; 8 at in-person training
- Arm 3: 9 clinics / 4 organizations
  - - 9 orientation webinar attendees; 10 at in-person training
- Subsequent 'annual' webinars (Arms 1-3): Spotty, inconsistent attendance
  - Tool updates; Diabetes improvement guide
- Subsequent 'adaptive' webinars (Arms 2-3): Spotty, inconsistent attendance
  - Alerts, Tools, Reporting; Clinical Guideline Summary; Running Reports

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Process: Practice Facilitation

- Practice Facilitation – site visits (Arm 3)
  - Organizations A, B, C: 2 visits over years 2-4;
  - Organization D: 3 visits over years 2-4
  - We were prepared to provide 4-6 visits / organization in this period
- Practice Facilitation – other contacts (Arm 3)
  - Y2: 48 email exchanges, 9 calls, 2 webinars, 4 clinic meetings attended via phone
  - Y3: 42 virtual coaching sessions (phone/webinar), 84 other contacts (email, short calls)
  - Y4: 13 virtual coaching sessions (phone/webinar), 28 other contacts (email, short calls)

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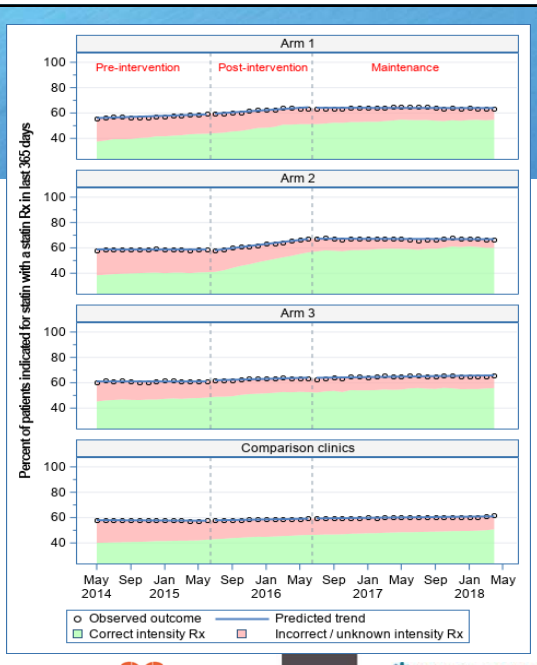
Quantitative Results

Statin prescribing by month and study arm



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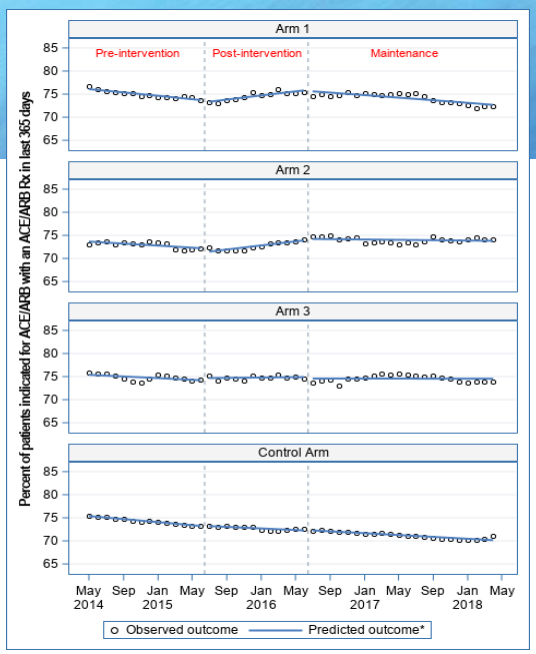

ACE/ARB prescribing by month and study arm

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Quantitative results overview

- Statin prescribing trends increased for all arms
  - But only Arm 2 demonstrated a statistically significant change in trend compared to the control CHCs
- Differences did not follow the hypothesized additive pattern
- No change in ACE/ARB prescribing rates

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Qualitative results: Factors that impacted implementation support effectiveness

- Issues with CVD Bundle
  - Designed, implemented by partnering with EHR host - real world!
  - Challenge: decision support for statin dosages - guideline complexity
  - Limited resources for testing EHR tools
    - Initial faults corrected soon, but staff got used to ignoring
    - Staff perceived tools were wrong, perhaps b/c did not know new guidelines
  - Limitations inherent to EHR made the tools:
    - Not optimal for team-based care
    - Hard for clinics to extract data needed to track progress
  - Guidelines not aligned with care quality measures

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Qualitative results: Factors that impacted implementation support effectiveness

Challenges: Providing implementation support

- Toolkit:
  - Designed to be modular, but clinic staff said it was too long
- Webinars:
  - Designed to address clinic needs, but attendance inconsistent
  - Not tailored to specific clinics; attendees often at different implementation stages
- In-person training:
  - Did we train the right people?
  - No repeat training
  - Staff turnover

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Qualitative results: Factors that impacted implementation support effectiveness

Challenges: Providing implementation support

- Practice facilitation:
  - Clinics don't know how to 'use' offered PF
  - Purpose not clearly enough defined in advance.
  - Morphed into overall DM management – was better received
  - No real time audit and feedback given to clinics
  - New CDS different enough from previous study CDS that no proven workflows to share

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Qualitative results: Factors that impacted implementation support effectiveness

- Aspects of study design:
  - Inadequate emphasis on knowledge of new guidelines
  - Some clinic 'point people' are not influencers
  - Lag between recruitment, study activities → clinics lose interest
  - Delays in feedback data, + clinics did not run own reports as planned → poor feedback / tracking
  - Design comparing specific strategies → unable to adapt to clinic needs (never again!)

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Discussion and Implications

- Commonly-used implementation strategies associated with minor improvements in CHCs' guideline-concordant care
- Level of implementation support possibly less impactful than clinics' readiness to make targeted changes, other clinic factors
- Adaptability is essential
- Guideline dissemination: Start by evaluating adopters' needs / preferences so implementation strategies may be met with receptivity

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Thank you! Questions?

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