GRANT PROPOSAL
TO PROMOTE TEAM-BASED PRIMARY CARE USING A HUMAN FACTORS APPROACH

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FUNDING OPPORTUNITY

• Notice number: NOT-HS-16-011

• AHRQ will use standing program R01, R03, and R18 funding mechanisms

• Interest in applications that address
  1. How different configurations of primary care teams affect the effectiveness and efficiency of care and health outcomes
  2. How different financing models for primary care affect the delivery of high quality care
  3. How to integrate primary care into larger health care systems and public health to improve health outcomes
  4. How different external supports, configurations of teams, delivery or financing models of primary care improve health equity across diverse populations and communities
  5. How different external supports, configurations of teams, delivery or financing models of primary care improve patient and/or provider satisfaction
  6. The development of quality measures that are applicable to the primary care setting
BACKGROUND

• Chronic disease is a major contributor to death, disability, and healthcare cost

• Despite wide availability of effective treatment, patients often do not receive recommended care
  • E.g., only 50% of patients with hypertension (our prototype for chronic disease) achieve BP control even though 85% are insured and 89% have “usual source of care”

• Re-organizing care around Chronic Care Model can improve outcomes
  • Increasing providers knowledge and skill to treat
  • Distributing tasks around teams
  • Engaging patients in their self-management
  • Proactive, planned management

McGlynn et al, NEJM 2003
NHANES 2009-2012
Coleman et al, Health Aff 2009
Walsh et al, Med Care 2005 & Shojania et al, JAMA 2007
THE CHRONIC CARE MODEL

TRIP: TRANSLATING RESEARCH INTO PRACTICE

1. Summarise the evidence
   - Identify interventions associated with improved outcomes
   - Select interventions with the largest benefit and lowest barriers to use
   - Convert interventions to behaviours

2. Identify local barriers to implementation
   - Observe staff performing the interventions
   - "Walk the process" to identify defects in each step of implementation
   - Enlist all stakeholders to share concerns and identify potential gains and losses associated with implementation

3. Measure performance
   - Select measures (process or outcome)
   - Develop and pilot test measures
   - Measure baseline performance

4. Ensure all patients receive the interventions
   - Implement the “four Es” targeting key stakeholders from front line staff to executives
   - Engage
     - Explain why the interventions are important
   - Evaluate
     - Regularly assess for performance measures and unintended consequences
   - Educate
     - Share the evidence supporting the interventions
   - Execute
     - Design an intervention “toolkit” targeted at barriers, standardisation, independent checks, reminders, and learning from mistakes

Overall concepts
- Envision the problem within the larger healthcare system
- Engage collaborative multidisciplinary teams centrally (stages 1-3) and locally (stage 4)

Pronovost et al. BMJ 2008
OUR CHECKLISTS

The 2015 M.A.P. checklists for improving BP control

Measure accurately

**Screening checklist**
- When screening patients for high blood pressure:
  - Use a validated, automated device to measure BP
  - Use the correct cuff size on a bare arm
  - Ensure patient is positioned correctly

**Confirmatory checklist**
- If screening blood pressure is ≥140/90 mm Hg, obtain a confirmatory measurement:
  - Repeat screening steps above
  - Ensure patient has an empty bladder
  - Ensure patient has rested quietly for at least five minutes
  - Obtain the average of at least three BP measurements

**Evidence-based tips for correct positioning**
- Ensure patient is seated comfortably with:
  - Back supported
  - Arms supported
  - Cuff at heart level
  - Legs uncrossed
  - Feet flat on the ground or supported by a foot stool
  - No one talking during measurement

Act rapidly

- If patient has blood pressure ≥140/90 mm Hg confirmed:
  - Use an evidence-based protocol to guide treatment
  - Re-assess patient every 2–4 weeks until BP is controlled
  - Whenever possible, prescribe single-pill combination therapy

**Evidence-based protocols typically include**
- Counsel on and reinforce lifestyle modifications
- Ensure early follow-up and add preferred medications in a stepwise fashion, until BP is controlled
- For most patients, give preference to:
  - Thiazide diuretics
  - Olmecipramine calcium channel blockers
  - ACE inhibitors (ACEI)
  - Angiotensin receptor blockers (ARB)
- Do not prescribe both ACEI and ARB to same patient
- If BP > 160/100 mm Hg, start therapy with two medications or a single pill combination

Partner with patients, families and communities

- To empower patients to control their blood pressure:
  - Engage patients using evidence-based communication strategies
  - Help patients accurately self-measure BP
  - Direct patients and families to resources that support medication adherence and healthy lifestyles

**Evidence-based communication strategies include**
- Begin with open-ended questions about adherence, including recent medication use
- Explore reasons for possible non-adherence
- Brief patient views on options and priorities to customize a care plan for each patient
- Remain non-judgmental at all times
- Use teach-back to ensure understanding of the care plan

**Evidence-based tips for patient self-measurement of BP**
- Instruct patient to measure BP accurately using a validated, automated device and correct positioning for measurement
- Ask patient to record ≥2 morning BP measurements and ≥2 evening BP measurements for ≥4 consecutive days between office visits
- Develop a systematic approach to ensure patients can act rapidly to address elevated BP readings between office visits
- Counsel patients that self-measured BP ≥135/85 mm Hg is considered elevated

**Evidence-based lifestyle changes to lower BP include**
- Following the DASH diet, which is rich in fruits, vegetables and whole grains, reduces blood pressure risk and weight.
BARRIERS TO IMPLEMENTATION

• **Primary care practices often lack QI infrastructure**
  - No IT or claims department = no data
  - Clinicians play multiple roles (doctor, CEO, IT support, etc.)
  - Limited staff size
  - Staff have less professional training on average

• **Inadequate support to facilitate change**
  - QI collaboratives require large investments in time/effort = $$$
  - Few existing toolkits: non-systematic compendia of good ideas

• **Primary care providers want off-the-shelf solutions: “Just tell us what to do.”**
  - Think: iPhone camera vs. photography class
SPECIFIC AIMS

1. To describe the care team organization, role tasks, and tools used by primary care practices that provide exceptional care for patients with chronic disease, for which hypertension is a prototype.

2. To characterize the tools that enable exemplary primary care practices’ workflow and “reverse-engineer” into suite of “off-the-shelf” tools that primary care teams may use to redistribute role responsibilities and support best practices for hypertension management.

3. To pilot test the feasibility and acceptability the toolkit in “average” primary care settings.
OVERVIEW OF PROJECT

Specific Aim 1
- Environmental scan for HTN tools from health systems & online tool collections
  - artifacts
- Direct observation of clinic encounters
  - context & tasks
  - additional artifacts
- Semi-structured interviews & focus groups with PCPs, clinic staff & patients
  - cognitive mindset
  
Specific Aim 2
- Content analysis
  - Artifact analysis, Task analysis, FMEA, etc.
- Develop toolkit

Specific Aim 3
- Implement toolkit in existing primary care practice(s)
- Assess toolkit feasibility & acceptability, and effect on safety culture
THE CHRONIC CARE MODEL

Structure/Work system

Process

Outcome

Functional and clinical outcomes

Informed activated patient

Productive interactions

Prepared proactive practice team

Organization of Health Care

Self-management support

Delivery system design

Decision support

Clinical information systems

Resources and policies

Community

Health System
THE SEIPS MODEL

WORK SYSTEM

PROCESS

OUTCOMES

Technology and Tools

Organization

Person

Tasks

Environment

PROCESSES:
* care process
* other processes

Patient Outcomes

Individual & Organizational Outcomes

Caryon et al. Advances in Patient Safety, vol. 3
AIM 1A: ENVIRONMENTAL SCAN

Consists of

1. Literature review
2. Internet search
3. Review by Key Informants
LITERATURE REVIEW

PubMed +/- SCOPUS:
- English language
- U.S. and International

Parameters for generating search terms
- **Primary care**
  - E.g., primary care, ambulatory, outpatient, family medicine, etc.
- **Chronic disease/Hypertension management**
  - E.g., chronic disease, chronic illness, chronic care, hypertension, blood pressure, etc.
- **Team-based care**
  - E.g., interdisciplinary, multidisciplinary, team, teamlet, etc.
- **Enablers**
  - E.g., enabler, facilitator, promoter, protocol, tool, etc.
INTERNET SEARCH

1. **Google** search using parameters similar to literature view
   - Narrow search with terms with “filetype” function (e.g., `filetype:docx`, `filetype:pdf`, etc.)

2. **Key websites**
   - AMGF Measure Up/Pressure Down campaign ([http://www.measureuppressedown.com/](http://www.measureuppressedown.com/))
   - American Heart Association ([http://www.heart.org/HEARTORG/](http://www.heart.org/HEARTORG/))
   - American Medical Association ([https://www.stepsforward.org/](https://www.stepsforward.org/))
   - 50 State and 10 Largest Cities Health Departments
   - Institute for Healthcare Improvement ([http://www.ihi.org/](http://www.ihi.org/))
   - Primary Care Team Guide ([http://www.improvingprimarycare.org/](http://www.improvingprimarycare.org/))
   - Kaiser Permanente ([https://healthy.kaiserpermanente.org/health/care/consumer/health-wellness/conditions-diseases](https://healthy.kaiserpermanente.org/health/care/consumer/health-wellness/conditions-diseases))
## Proposed Key Informants

<table>
<thead>
<tr>
<th>Informant</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joel Handler</td>
<td>Hypertension/QI – Kaiser Permanente</td>
</tr>
<tr>
<td>Brent Egan or Rob Davis</td>
<td>Hypertension/QI – Outpatient QI Network (OQUIN)</td>
</tr>
<tr>
<td>Anand Naik</td>
<td>Hypertension/QI – Houston VAMC</td>
</tr>
<tr>
<td>Donna Daniel or Mike Rakotz</td>
<td>Hypertension/QI expert – AMA</td>
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<tr>
<td>Jerry Penso</td>
<td>Hypertension/QI expert – AMGA</td>
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<tr>
<td>Tom Bodenheimer or Kevin Grumbach</td>
<td>Chronic care expert – USCF</td>
</tr>
<tr>
<td>Ed Wagner</td>
<td>Chronic care expert – Group Health/MacColl Institute</td>
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AIM 1B: DIRECT OBSERVATIONS & INTERVIEWS

Consists of

1. Identify “positive deviant” organizations
2. Collect multi-dimensional data on best practices
   a. Conduct direct observations of workflow
   b. Conduct semi-structured interviews
   c. Collect “artifacts”
IDENTIFYING POSITIVE DEVIANTS

• Option #1:
  • AMGA’s Measure Up/Pressure Down Campaign
    • Approach practices with top 10% blood pressure control rates
    • Approach practices with top 10% improvement in blood pressure control rates

• Option #2
  • JHCP Practice network
    • Practices with top 10% blood pressure control rates
CONCURRENT OBSERVATION & INTERVIEWS

• Direct observations assess what happens
• Semi-structured interviews or focus groups assess meaning behind observed events
• Interspersing observations with interviews facilitates deeper understanding
## Model to Guide Observations & Interviews

- MAP Framework with SEIPS model

<table>
<thead>
<tr>
<th>SEIPS</th>
<th>MAP</th>
<th>Measure Accurately</th>
<th>Act Rapidly</th>
<th>Partner with Patients, Families &amp; Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical environment</td>
<td></td>
<td>What occurs to accomplish the MAP item?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tools/Technology</td>
<td></td>
<td>When does it occur?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td></td>
<td>How does it occur?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td></td>
<td>Who does it?</td>
<td>Could/Does anyone else do it?</td>
<td>What enables or hinders performance of the MAP item?</td>
</tr>
</tbody>
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## ARTIFACT COLLECTION

- SEIPS model will guide identification of systems change enablers
- Examples:

<table>
<thead>
<tr>
<th>Example artifact</th>
<th>SEIPS domain</th>
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</thead>
<tbody>
<tr>
<td>Job descriptions</td>
<td>Person</td>
</tr>
<tr>
<td>Protocols</td>
<td>Organization, Task</td>
</tr>
<tr>
<td>EMR messaging</td>
<td>Task, Tools/Technology</td>
</tr>
<tr>
<td>Patient education materials</td>
<td>Tools/technology</td>
</tr>
<tr>
<td>Exam room chairs with adjustable-height arm rests</td>
<td>Physical environment, Tools/Technology</td>
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AIM 2:

- Artifact analysis
- Develop toolkit
- Develop training materials
AIM 3: PILOT TESTING TOOLKIT

Consists of

• Implementation in 1-2 primary care sites
  • Recruit sites with 2-6 PCPs and hypertension control rates between 40-65%

• Evaluation focused on toolkit feasibility and adoption
EVALUATION

• Surveys
  • Perceptions of need for change
  • Perceptions of need for toolkit
  • Perceptions of comfort with toolkit
  • Perceptions of self-efficacy to use toolkit
  • Perceptions of usability of toolkit

• Focus groups
  • Explore responses to survey question with emphasis on “usability” concerns
FEEDBACK, PLEASE.