Medication Adherence Improvement: Challenges & Opportunities

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Disclosures

• Veterans Affairs Health Services Research & Development Career Development Award (CDA 13-025)

• Pilot Awards: Duke Cancer Institute; Duke Global Health Institute; Duke University O' Brien Center for Kidney Research
4/5 take at least one medication

50% chronic disease medications are not taken

$318 billion in avoidable spending


Triple Aim of Appropriate Medication Use

- Better Individual Health
- Better Population Health
- Better Health Care
Triple Aim of Appropriate Medication Use

- More efficient use of public and private resources
  - Prevention of complications & hospitalizations
  - Less waste of time & effort

- Professional, personal, and financial rewards
Defining Medication Adherence

Adherent | Non-Adherent
Types of Medication Non-Adherence

Rx Ordered, But Not Dispensed

Primary

Secondary

• Failing to Refill Rx
• Refilling Rx to Late
• Taking Rx Improperly

Discontinuation

30% of prescriptions are never filled

50% of chronic disease meds not taken

Discontinuation

Provider Directed vs. Patient Directed

Intentional vs. Unintentional
What we see is not the problem…

Non-Adherence

Uninformed Decision-Making
Poor Communication
Complex Drug Regimens
Financial & Cognitive Constraints
Disengaged Patients
Mismatched Preferences

…just the tip of hazardous contributing factors.
Mrs. Smith

Patient Factors

- Financial ability
- Time
- Cognitive ability
- Health literacy
- Communication
- Social support
- Engagement
Mrs. Smith

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Clinical Team’s Role
• Link to financial assistance
• Synchronize Rx refills
• Provide reminder tools
• Educate about treatment
• Counsel & accountability
• Suggest peer support
• Facilitate self-monitoring
Adherence Improvement Toolbox

- Reminders
- Smartphone apps
- Smart pill bottles
- Dispenser systems
- Cuing
- Literacy interventions
- Health coaching
- Medication synchronization
- Financial assistance
- Medication therapy management
Keys to Effective Interventions

• Modest effect sizes can be significant if they improve clinical outcomes
• A health outcome is the endpoint
• No one-size-fits-all intervention
• Combinations of 2+ interventions that address different dimensions

Limitations of the Evidence

- Too small and too short
- Limited generalizability
- Inadequate evaluation of adverse effects
- Poor clinical outcomes assessment
- Lack of evaluation of individual components
- Limited comparability
Multicomponent Interventions

Educational

Behavioral & Motivational

System Level
Phases of Chronic Medication-Taking

**Initiation**
- Level of motivation
- Readiness for change
- Self-efficacy
- Problem solving

**Implementation**
- Tailored support
- Motivational interviewing
- Setting goals
- Cuing

**Persistence**
- Long-term communication
- Self-monitoring
- Reinforcement
- Shared decision making

## Is Technology a Delivery Tool?

<table>
<thead>
<tr>
<th>Technology Categories</th>
<th>Specific Solutions</th>
<th>Example Applications</th>
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<tr>
<td><strong>Mobile Health Technology</strong></td>
<td>• Text messaging</td>
<td>• Provide tailored feedback to multiple patients simultaneously</td>
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<tr>
<td></td>
<td>• Smartphone applications</td>
<td>• Deliver timely reminders automatically</td>
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<td></td>
<td>• Interactive voice response</td>
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<td></td>
<td>• Electronic health records</td>
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<tr>
<td><strong>Electronic Monitors</strong></td>
<td>• Biometric and physical activity monitors</td>
<td>• Collect data between clinic visits to inform decision making</td>
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<td></td>
<td>• Digital scales</td>
<td>• Inform patient self-monitoring</td>
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<td><strong>Pill-monitoring Technology</strong></td>
<td>• Electronic pill caps</td>
<td>• Measure adherence objectively</td>
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<td></td>
<td>• Smart blister packaging</td>
<td>• Understand patients’ medication taking</td>
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<tr>
<td></td>
<td>• Digital pills</td>
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<td><strong>Online Resources &amp; Social Media</strong></td>
<td>• Web-based peer support</td>
<td>• Enable patient self-monitoring</td>
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<td></td>
<td>• Condition-specific online support communities</td>
<td>• Develop patients’ social support system</td>
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<td></td>
<td>• Online self-monitoring</td>
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Challenge of Getting Evidence into Practice

1. Demonstrate that it works
2. Show it works in clinical practice
3. Keep it working
4. Spread it system-wide
5. Keep the system working

Efficacy

Effectiveness

Sustainability

Scalability

System Sustainability

~17 years

adapted from Kellam & Langevin 2003, Balas & Boren 2000
Opportunities for Adherence Work

• Policies encourage meaningful use of HIT to engage patients

• Financial incentives exist to engage patients

• Patient-centeredness is well-supported