“Drugs don’t work in patients who don’t take them.” – C. Everett Koop, MD

The **B-SMART** Medication Adherence Checklist:

*Making it easier to do the right thing*

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About Kaiser Permanente Southern California

- People
  - 3.28 Million Members
  - 55,000 Employees
  - 6,500 Physicians

- Financials
  - $14 Billion Annual Revenue

- Sites
  - 13 Hospitals
  - More than 120 Medical Office Buildings

- Highlights
  - 280,000 Hospital Discharges
  - 34,400 Babies Delivered Annually
  - 17.7 Million Outpatient Visits
  - 305,800 Annual Home Health Visits
  - Full implementation of electronic medical record in all hospitals and medical office buildings

- 22.7 Million Prescriptions Filled

Source: 2009 Kaiser Permanente Annual Report
Case #1: Mr. Bee

- 62 yr old man with a Hx of Diabetes, CAD, uncontrolled HTN, smokes up to 1 pack of cigarettes daily, 25 pounds overweight
  - Drove to ER with chest pains
  - Dx: Mild heart attack
  - Admitted to the hospital
  - Discharged 3 days later
  - Scheduled for a 5 day follow up with his PCP
  - Labs: HgA1c = 9.2, LDL = 162, BP = 146/92
Follow-up Visit with MD

At medication review

– Diabetes medication: 1000mg twice daily
  • Problems:
    • Morning dose: stomach ache and diarrhea  → Mr. Bee reduced to half the dose
    • Evening dose: generally forgets to take

– HTN medications -- feels dizzy and nauseous

– Beta Blocker medication: Feels tired  → Mr. Bee stopped taking it

– MT felt he was on too many medications (11)
Mr. Bee is Not Alone

• Approx $\frac{1}{2}$ pts not taking meds as directed
• $100+$ billion in wasteful health care spending
• Cause of death, hospitalization, and poor QOL

Over 250 barriers (recorded in the literature)

Conversely, 40% improvement in mortality when medications are used appropriately (HOPE & S4)

* Heart outcome prevention evaluation & Scandinavian simvastatin survival study

Source: Cutler, Everett, Thinking Outside the Pillbox – Medication Adherence as a Priority for Health Care Reform, NEJM 362:17, 1553-55, 2010
Where medication adherence breaks down

Breaking Medication Non-Adherence up into manageable components

Source: Adapted from American Heart Association, 2009 Statistics You Should Know. www.americanheart.org/presenter.jhtml?identifier=107
Making it easier for our providers to help patients use their medications effectively and safely to achieve the best health outcomes

• Identify patients with potential challenges taking their medications as prescribed – **ASK or USE EMR TOOLS**

• Provide solutions for clinicians and patients: An Example – **The B-SMART Checklist**
### Identify Poor Adherence

**Ask or Use EMR Indicators**

#### Medication Refill Adherence Ratio

#### Days Supply Remaining

<table>
<thead>
<tr>
<th>Date</th>
<th>Drug</th>
<th>Mrar %</th>
<th>Dsr</th>
<th>Qty</th>
<th>Rfd</th>
</tr>
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<tbody>
<tr>
<td>08/17/09</td>
<td>KPHC SELF-REPORTED ASPIRIN</td>
<td>65</td>
<td>38</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>07/07/09</td>
<td>NIFEDIPINE ER 90MG TAB &quot;XL&quot;</td>
<td>100</td>
<td>53</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>07/02/09</td>
<td>METFORMIN HCL TAB 500MG</td>
<td>100</td>
<td>33</td>
<td>800</td>
<td>4</td>
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<tr>
<td>07/02/09</td>
<td>SIMVASTATIN TAB 80MG</td>
<td>67</td>
<td>23</td>
<td>90</td>
<td>3</td>
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<tr>
<td>06/25/09</td>
<td>POTASSIUM CL ER TAB 10MEQ</td>
<td>100</td>
<td>20</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>06/24/09</td>
<td>AMLODIPINE 10MG TABS</td>
<td>100</td>
<td>25</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>06/24/09</td>
<td>ENALAPRIL MALEATE TAB 5MG</td>
<td>81</td>
<td>40</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>06/17/09</td>
<td>FEFOXENADINE HCL TAB 180MG</td>
<td>30</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>06/17/09</td>
<td>CLORETASOL PROPIONATE CRE 0.05%</td>
<td>50</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>06/16/09</td>
<td>HYDROXYZINE HCL TAB 25MG</td>
<td>30</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>05/29/09</td>
<td>HYDROCHLOROTHIAZIDE TAB 25MG</td>
<td>100</td>
<td>31</td>
<td>100</td>
<td>3</td>
</tr>
</tbody>
</table>

*Hotkey List*

*Exit Workspace*
The B-SMART Checklist

Barriers * Solutions * Motivation * Adherence Tools * Relationships & Roles * Triage

Checklist

Barriers
Solutions
Motivation
Adherence Tools
Relationships & Roles
Triage / Referrals
Case #2: Mrs. Smart

Identify **Barrier**: ASK

“Based on your prescription refill pattern, it appears that you are not taking your diabetes medication as prescribed. **What gets in the way of you taking your medication?”**

- Answer (from patient): “I can’t remember to take my medications twice a day, especially in the evenings.”

**Solution**: EDUCATION to support routine

“Some find it helpful to take it with something you do every day, like with your breakfast and dinner”

- **ASK** “But I’m curious, what would work for you? Tell me what you will do now to make that happen? What else?”

- **Strong positive close**: You are definitely on the right track. I’m glad you understand the importance of taking your medications as prescribed. Please don’t hesitate to call me or [designee – pharmacist / nurse] if you have any further questions about your medications.

**Motivate**: at EVERY point of contact – Encourage / Empathize / Congratulate

**ART**: Adherence tools / Relationship / Triage to health education and other programs as needed
Case #1: Mr. Bee – multiple barriers

Barriers

• Lack of understanding of the benefit vs. risk
• Forgetfulness
• Side effects
• Financial
• Belief system

Solutions - multifaceted

• **Value and Benefit of Therapy:** Physician & provider emphasis and reinforcement – in provider office

• **Educate** to focus on the **markers of the disease** (LDL, BP, etc) instead of **symptoms of the disease** to predict how well they are doing (many diseases have no symptoms) & set goals

• **Cost / Financial issues**

• Motivate / Adherence Tools / Triage to other health care services
# B-SMART Tip Sheet

## Solutions for Barriers

### The B-SMART Medication Optimization Process

**Barriers** + **Solutions** + **Motivation** + **Adherence Tools** + **Relationships** + **Triage**

### BARRIERS & SOLUTIONS TIP SHEET

**How to identify barriers:**

- Good communication is important, so providers must first understand why a patient is not taking his or her medications properly. Some questions a provider may ask to help better understand the patient include:
  - During the last week, how many days have you missed taking any of your medications?
  - Have you stopped or started taking any of your medication on your own?
  - Have you ever had difficulty taking your medication as prescribed, and if so, why?
  - What did your doctor tell you this medication is for? (to identify patient’s knowledge and purpose of medication)
  - Have you experienced any problems or had any side effects while taking your medication?

This document includes tips for identifying and solving these barriers.

### How to Use the Tip Sheet

The B-SMART Tip Sheet is designed to help providers understand and address common barriers to medication adherence. It includes a list of common barriers, patient comments, and suggested solutions. This tool can be used during patient consultations to help identify specific challenges and develop tailored strategies to improve adherence.

### Table of Solutions

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Pt. comments</th>
<th>Some Solutions to Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetting</td>
<td>“I forgot to take my medication”</td>
<td>Educate patient on importance of taking the medication as prescribed. Provide written information. Use visual aids. Follow-up management in 1 – 2 weeks.</td>
</tr>
<tr>
<td>Financial challenges</td>
<td>“This medicine is too expensive” or “I cannot afford this medication”</td>
<td>Educate patient on importance of taking the medication as prescribed. Prescribe / obtain a prescription for a generic alternative or a formulation preferred therapeutic alternative. Offer mail order incentive programs - this could save patients one or more copays. Offer Medicaid financial assistance (MFA). Shop around with Pharmacist. Check into Pharmaceutical company financial assistance programs or other drug discount programs.</td>
</tr>
<tr>
<td>Lack of knowledge about medication and its use</td>
<td>“I don’t know why I have to take this medication” or “This is not for me”</td>
<td>Educate patient on importance of taking the medication as prescribed. Provide written information. Use visual aids. Use the teach-back method (p.28).</td>
</tr>
<tr>
<td>Denial of conditions</td>
<td>“I am not really sick” or “I do not need this medication”</td>
<td>Explore readiness to change. Discuss the life-long nature of their condition or illness and need for life-long therapy to slow progression or prevent further complications. Consult Provider to reinforce condition with patient. Follow-up management in 1 – 2 weeks.</td>
</tr>
<tr>
<td>Depression</td>
<td>“I just want to die” or “I don’t want to live like this anymore”</td>
<td>Contact the provider and/or refer to Psych. Administer the Patient Health Questionnaire (PHQ-9 or PHQ-2).</td>
</tr>
<tr>
<td>Lack of social support</td>
<td>“I don’t have anyone to help me and I’m always forgetting what to do”</td>
<td>Refer patient to social services for evaluation. Contact any family member with member’s permission to discuss situation and options.</td>
</tr>
<tr>
<td>Poor health literacy or language barriers</td>
<td></td>
<td>Educate patient on importance of taking medication as prescribed. Provide interpreter services for patients who do not speak English. Provide patient medication information at the fourth grade level. Use non-medical language and speak slowly. Provide information in an organized manner. Use Visual aids whenever possible. Use teach-back method to check for comprehension (p.28).</td>
</tr>
<tr>
<td>Poor vision</td>
<td></td>
<td>Use visual aids whenever possible. Use large print labels or instruction sheets or request “talking pill container caps” with recorder directed by the pharmacist. Use non-medical language and speak slowly. Provide information in an organized manner.</td>
</tr>
<tr>
<td>Cultural, health, and/or religious beliefs about medication</td>
<td>“I do not believe in taking this medication” or “I do not need this medication”</td>
<td>Use the LEARN framework to explore and understand patients’ beliefs (see chapter 3). Consult provider to discuss with patient. Follow-up management in 1 – 2 weeks.</td>
</tr>
<tr>
<td>Complex medication regimen and/or taking multiple medications at the same time</td>
<td>“I am taking too many medications” or “I cannot remember how to take them”</td>
<td>Memory tools such as pill box organizers and reminders, med calendars, electronic devices, watches with time alarms, etc. Consult prescriber to adjust medications frequency or change meds. Consult prescriber to prescribe combination medications. Modify frequency of dose. Help patients make associations, linking medication use with daily habits. Follow-up management in 1 – 2 weeks.</td>
</tr>
<tr>
<td>Side effects or adverse reactions from the medication</td>
<td>“I had a stomach ache when I took the medication” or “I could not do my job when I was taking this medication because of the side effects”</td>
<td>Provide tips to reduce side effects (Pharmaceutical Pearls, p. 41). Emphasize the importance of taking the medication as prescribed. Consult provider about side effect management, other treatment options, etc. Follow-up management in 1 – 2 weeks.</td>
</tr>
</tbody>
</table>
The B-SMART Checklist

Barriers * Solutions * Motivation * Adherence Tools * Relationships & Roles * Triage

**Support** – a marathon not a sprint

**Motivate** at every point of contact:
Encourage, Congratulate, Empathize

**Set Goals**

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Encouraging letter

Dear Mr. 

Your cholesterol is much improved! Congratulations! Continue your cholesterol medication to help keep your arteries open.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHOL &lt;200</td>
<td>338 (H)</td>
<td>179</td>
<td></td>
</tr>
<tr>
<td>TRIG &lt;150</td>
<td>268 (H)</td>
<td>184 (A)</td>
<td></td>
</tr>
<tr>
<td>HDL &gt;/=40</td>
<td>49</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>LDL CALC &lt;100</td>
<td>235 (H)</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>CHOL/HDL &lt;5.0</td>
<td>6.9 (H)</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>ALT 17 - 63 units/L</td>
<td>64 (H)</td>
<td>46</td>
<td></td>
</tr>
</tbody>
</table>

Be well,  
Ron Scott, MD

kp.org  
800-954-8000
Reminder Outreach:

- **Primary Non-Adherence**: Automated call/letter to patients who fail to fill their 1st statin prescription within 1-2 weeks:
  
  16% improvement in Rx fills

- **Secondary Non-Adherence**: Automated refill reminder calls for refills overdue by 2 – 6 weeks (statins, prinzide and diabetes medications)
  
  41% improved refill rate; improved A1c and LDL

- **Medication adherence reminder messages** on Rx’s and member self-management materials and health education classes
The B-SMART Checklist

Tools for patients to keep on track

Visual reminders
A Picture is worth a thousand words

eTools
example: Smartphones with apps
The B-SMART Checklist

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• Denial

• Health Literacy issues

• Difficult Patients

• Financial

• Other

Triage/Referral Resources

– Care / Case Management
– Behavioral and Social Medicine
– Health Education Classes
– Patient’s Provider (for Care Managers and pharmacists)
– Pharmacist (for Care Managers and Providers)
– Community Programs
– Financial Assistance Programs
– Website Tools & Coaching
– KP.org: Drug encyclopedia and health encyclopedia
– http://kphealtheducation.org
The **B-SMART** Training Tools

- B-SMART Handbook
- B-SMART Tip sheet
- B-SMART eModules
B-SMART Methodology Example
Outpatient Pharmacy Clinical Services (OPCS)

Diabetes and CAD medication adherence program:

– Outpatient Pharmacist consultation in retail pharmacy
– Patients with HbA1c > 8 and/or LDL >100 and MRAR (Adherence Ratio) < 80
RESULTS

OPCS Regional Diabetes and CAD medication adherence program:

- **Over 3800** non adherent patients interventions
- Consultation by OPCS pharmacist yielded **67% improvement in meds restarts**
- **41% improvement** in subsequent refill rate
- **0.7% decrease** in A1c and improved screening rates
- **18.5 mg/dL decrease** in LDL-C and improved screening rates
RESULTS: OPCS Regional Diabetes and CAD medication adherence pilots: Medication Adherence Barriers

- 38% Forgetfulness
- 17% Denial of Conditions
- 14% Lack of Knowledge (Med & Use)
- 14% Side Effects
- 10% Other
- 14% Financial Challenges
- 14% Complex Medication Regimen
- 14% Language Barrier
- 14% Lack of Social Support
- 14% Poor Health Literacy or Poor Vision
- 14% Cultural and/or Religious Beliefs

5400 barriers reported
N=3848 pts
Case #1: Mr. Bee after 6 months...

HbA1c = 7.7, LDL = 101, BP = 124/80

• **Barriers & Solutions**
  – Takes his Metformin with breakfast and dinner
  – Takes his Beta blocker at night to reduce dizziness
  – For Blood pressure: Changed to combo medication (prinzide)
  – Uses a pill box to keep track
  – Also on Glipizide once daily (& pill box)

• **Motivation**
  – Has action plans with goals to improve his health:
    • Weight loss plan – has lost 15 pounds
    • Reduced smoking – now down to one cigarette a day
    • Tips to develop healthy eating habits and lifestyle

• **Adherence Tools**
  – Uses pill boxes to stay on track
  – Sometimes gets an IVR call to remind him to pick up his medications

• **Relationship**
  – Is encouraged by his provider to keep him on track at every visit
  – Very satisfied with care from his doctor and staff

• **Triage**
  – Attended Health Education class where he learned to control his chronic conditions and better understand the disease process
Impact of improved adherence

• Increasing the effectiveness of interventions to improve adherence could have a far greater impact on population health than any other advancement in medical treatment.

The **B-SMART** Medication Adherence Checklist: *Making it easier to do the right thing*

Discussion & Questions