The B-SMART Appropriate Medication-Use Process:
A Guide for Clinicians to Help Patients—
Part 2: Adherence, Relationships, and Triage

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Introduction

Thousands of people fail to achieve the desired therapeutic outcomes from their medications because they are not taking them appropriately. As noted in *The B-SMART Appropriate Medication-Use Process: A Guide for Clinicians to Help Patients—Part 1: Barriers, Solutions, and Motivation* in the Winter 2009 issue of *The Permanente Journal,* reasons include: a lack of knowledge about the medications; side effects or adverse events; forgetfulness; lack of social support; cultural, health and/or religious beliefs; denial of conditions; financial challenges; poor relationships with clinicians; and lack of health literacy. Concrete solutions were provided for these nine common practice challenges.

Part 2 describes the B-SMART process: adherence tools and reminders, relationships, and triage. This multifaceted approach used before, during, and after any patient-clinician interaction creates a consistent method to help patients more effectively use their medications. Elements include: involving patients in the decision making, simplifying dosage regimens, education about the medication, self-management training, ongoing reinforcement and motivation, and positive relationships.

Adherence Tools and Reminders
The Sprinter versus the Marathon Runner

Think of running a 100-meter sprint versus a 4220-meter (26.2 mile) marathon. What if there were no spectators (motivators) to cheer you on, no drinks or water (resources) to keep you hydrated, no other runners running alongside you (support and motivators), and no mental preparation—would you successfully complete the 4220 meters? Maybe or maybe not. Many marathon runners have attributed their success in completing this grueling task to support, motivation, other runners, and cheering along the challenging stretch. This is less so for a person who runs a 100-meter dash. Similarly, a patient who is given a seven-day course of antibiotics does not need motivators and support in the form of reminder phone calls, health coaches to encourage them, health education classes for sharing ideas, or newsletters to keep them informed. However, a patient on a chronic medication (for example, antihypertensive medication), like the marathon runner, will need some of the following tools and reminders for motivation and adherence to the plan.

Follow-up and Reminder Phone Calls

Complex medication regimens contribute to a revolving door of rehospitalizations for patients with heart failure and other comorbidities. Therefore, follow-up phone calls within three to five days of appointments to review treatment plans can significantly reduce errors, patients misunderstanding their regimens, and medication nonadherence—all of which can result in hospital admissions or readmissions.

Devices

Devices, such as pillboxes, calendars, and diaries, simplify adherence by linking dose schedule to daily habits, and by reducing the complexity of a medication regimen. Also, this linking improves outcomes. More complex electronic devices such as pill containers with

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CLINICAL MEDICINE

The B-SMART Appropriate Medication-Use Process: A Guide for Clinicians to Help Patients— Part 2: Adherence, Relationships, and Triage

alarms or beepers, and even cell phones with programs to prompt patients to take their medications at the appropriate time.

Written Information

Studies note that patients forget up to 50% of the information from their clinician,[1] therefore written information about a medication reinforces verbal information given by the clinician.

Visual Aids

Pictures—"A picture is worth a thousand words." Pictures help patients remember medication information, understand how a medication works, and remember what they've learned. The Web site www.thehealthcarenet.com/Charts.asp has charts that can be used as training adjuncts.

Medication Charts—Medication charts improve patients' understanding about how to use medications and can simplify complicated regimens. This is especially important for patients with low literacy or who are non-English speaking. A sample medication card may be seen at www.picturerxcard.com/.

Instruction Labels—Medication labels use universal illustrations to depict proper use.

The Teach-Back Method

The teach-back method is an effective way to check patient understanding. In this method, the provider explains the medication directions and asks the patient to explain them back. For example, a provider might say, "We've discussed some strategies for taking your medication regularly. To help me know whether I've explained things thoroughly, please tell me how you plan to take your medications." Based on the patient's response, the provider can deter-

mine if additional explanations or interventions are necessary.

Newsletters and Letters

Although research has shown that mail reminders, especially to patients taking medications for chronic conditions, increase compliance over time by 28%, it is expensive to mail reminders to all patients on chronic medications. Targeting patients with certain nonadherence tendencies (for example, patients with diabetes who have a history of not picking up medications three or more times) is a good start. Newsletters and informational letters provide patients with the knowledge boost needed to stay on track.

E-mail

Many of the pharmacy patient data computer systems identify and can target patients who frequently miss appointments, or who are not at goal (for example, LDL >100 or HbA_{1c} >9). However, patient permission is needed for e-mail encounters and reminders.

Coaches and Care Managers

Health coaches help patients change their behavior and become more adaptive by listening, supporting, and advising patients about medical choices, treatment plans, preventive care, and overcoming barriers.

Classes and Support Groups

Health education classes and support groups can be beneficial to patients with various medical conditions (especially chronic conditions) in the following ways: answer questions about their condition; discuss feelings and develop coping skills; provide hope that one can cope and work through emotions; support from others who are going through the same situation; deal with the

negative thoughts and feelings about the condition; and create a support infrastructure.

Many people who benefit from these classes or groups help others within the group by providing hope and reassurance. By sharing personal experiences, patients who have successfully controlled their conditions calm the fears of people new to the class or group.

Handbook and Self-Care Resources

As in the saying "teach a man to fish," teaching patients about their chronic condition and how to manage it provides them with confidence to better manage their condition and achieve their goals. There is robust evidence from a recent systematic review that self-care manuals, such as the *Kaiser Permanente Healthwise Handbook*,[2] are regularly used and associated with increases in self-efficacy (or confidence in performing recommended actions), self-care skills, and overall patient satisfaction.[3] Benefits increased for self-care interventions when reinforced by a clinician in a group or individual visit, in both English- and Spanish-speaking populations.[4] Provision of these materials improves access by reducing outpatient visits and advice calls as demonstrated by the following:

1. Significant decreases in utilization occurred in half of the randomized, controlled trials (RCTs) from the systematic review
2. In the Kaiser Permanente (KP) Northern California cohort study, outpatient usage dropped 6.5%, whereas usage at the two comparison sites increased 4.8 and 2.1% respectively
3. In a programwide random phone survey, 52% of patients reported that use of the *Kaiser Permanente Healthwise Handbook* saved a call

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CLINICAL MEDICINE

The B-SMART Appropriate Medication-Use Process: A Guide for Clinicians to Help Patients— Part 2: Adherence, Relationships, and Triage

to the advice nurse and 45% said it saved a physician office visit. Similar results were found in an RCT based in Northern California.

Having a team of clinicians and/or partners in health (for example, family member, provider, etc) is also beneficial to improve patients' confidence and their goal achievement through long-term encouragement and support, especially when the patient feels s/he cannot do it alone.

Web-Based Resources

Research shows that Web-based tools augment provider teaching. Use of online self-care information may increase skills and self-efficacy.[5]

In the last few years, Internet use has substantially grown: more than half the nation is now online and Internet use is increasing for people regardless of income, education, age, race, ethnicity, or gender.[6] Recent studies found 40% to 52% of Internet users go online for information about health care, rating it equal or better than information obtained during a doctor's office visit.[7,8]

However, patients don't always know which Web sites are accurate. There are many reputable and reliable Web sites and physicians may want to invite their patients to visit there.

Clinician Aids

Pharmaceutical Pearls—"nuggets" of medication information, that focus on why and how to use a medication to achieve optimal outcomes. The two common types of pearls are knowledge-based and side-effect management.

Knowledge-Based—(two examples) A patient is prescribed furosemide 40 mg (a diuretic), one tablet daily. Taking the diuretic in the daytime can improve their quality of life, whereas taking it at night may cause the patient to wake up frequently to urinate, adversely affecting sleep.

A patient is prescribed albuterol, two puffs, four times daily as needed for wheezing. Waiting one to three minutes between puffs is necessary because it takes one minute to open up the airways, thus making the second puff more effective.

Side-Effect Management—(two examples) A patient gets a prescription for hydrochlorothiazide, 25mg daily, which may cause dizziness for up to one week. When patients know a side effect is temporary, they are more likely to cope with the side effect.

A patient is prescribed morphine, 80 mg, every four hours for pain. Because of the common side effect of constipation the patient should switch to a high-fiber diet (vegetables, bran cereal) and drink plenty of fluids. S/he may also consider a stool softener and/or gentle laxative for more serious constipation.

Clinician Follow-up Management

As noted previously, patients with complex medication regimens should be called within three to five days to review their treatment plan.

Follow-up management is especially helpful for patients taking chronic medications. There are software programs that identify patients who do not pick up their medications on time (determined by the day's supply entered in the system, or missed appointments. or those not at goal, for example: LDL > 100 or HbA_{1c} >9). Phone calls (automated or live) or postcards/letters are a gentle reminder. Follow-up management is particularly effective when a patient has a good relationship with his/her clinician.

Relationships and Roles of the Health Care Team

A positive patient-clinician relationship is one of the strongest predictors that a patient will take medications as prescribed. Studies show that patients who have good relationships with their clinicians and do not feel judged by them will be more honest about medication use, and more likely to share issues and barriers that impede appropriate medication use.[6,9,10]

Health Care Team Identification and Roles

The health care team—consisting of the patient, providers (physicians, staff pharmacists and nurse care managers), support staff, community pharmacists, and employer groups—plays a significant role in improving appropriate medication use. The involvement of the entire team is vital to reduce adverse outcomes.

Patient's Role—When patients are actively involved in decisions about their overall therapies and have a clear understanding of medication actions and benefits, their confidence about outcomes improves.

Clinician's Role—One of the most important roles for physicians, clinical pharmacists and nurse care managers is to develop relationships with their patients and create an environment that fosters optimal patient-clinician communication. This is one of the strongest predictors of medication adherence and optimal outcomes.[11]

Outpatient (Retail or Community) Pharmacist's Role—Since patients visit an outpatient pharmacy approximately three to four times more often than a physician's office, the KP or community pharmacist can detect appropriate medication use, especially when a patient's medication profiles are connected from pharmacy to pharmacy. For

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CLINICAL MEDICINE

The B-SMART Appropriate Medication-Use Process: A Guide for Clinicians to Help Patients— Part 2: Adherence, Relationships, and Triage

example, the pharmacist can detect if patients are filling their prescriptions, taking their prescribed doses, or skipping doses. With this information the pharmacist can work with the patient and clinician toward solutions.

Pharmacist or Nurse Care Manager—When interacting with a patient (by phone or in person), the care manager reviews current medications, dosage, consistency of use, and last refill date and quantity. If adherence is optimal (above 80%), the care manager will give the patient positive feedback and reinforcement. If adherence is poor or inconsistent, the care manager will identify readiness and barriers and intervene to reinforce treatment. A care manager will monitor the patient over time, providing support and encouragement, and, when appropriate, triage patients to other services in the health care system such as health education, social medicine, and financial assistance.

Clinic/Module Registered Nurse Role—The Registered Nurse (RN) plays a major role in medication adherence through patient education by explaining the reason for each medication, the importance of taking medication as prescribed, ensuring patient understanding of instructions through the teach-back method, offering memory techniques such as a daily pill box and crossing off doses taken, and teaching skills (for example, insulin injection). The RN also ensures that the patient has the medications and supplies needed, answers any medication questions, and refers the patient to the pharmacist or a health education class.

Medical Assistant/Support Coordinator/Technician Role—These staff members can help clarify which medications the patient is taking during the patient visit with his/her provider, provide tools (as prescribed), remind patients to pick up and take their medications as ordered, as well as remind them to come in for laboratory tests and follow-up appointments.

Health Care Organization's Role—Health care organizations provide infrastructure for developing systems, training, tools, and an environment that supports prevention and treatment interventions.[12]

Employer Group's Role—Employer groups can collaborate with their health plans and their employees' health goals through educational programs in the workplace.

Triage: Directing Patients to Other Resources in the Broader Health Care System

Once the clinician has identified barriers and applied various solutions to improve appropriate medication use for the patient, to ensure the patient receives continuous support it may be necessary to coordinate the patient's medication therapy management plan with broader health care-management services.

The services patients will be linked to depend on the patient's need. Many health care organizations have some or all of the systems below to augment the patient-clinician relationship. These systems can provide additional support through more detailed screening for nonadherence, identifying issues and barriers, exploring readiness to change, encouraging goal setting, and providing more detailed education.

Care/Case Management

A collaborative process that assesses, plans, implements, coordinates, monitors, and evaluates the options and services required to meet patients' needs, promotes quality and cost-effective interventions and outcomes, enhances access to care for patients with chronic conditions, and improves the continuity and effectiveness of services.

Behavioral and Social Medicine

Referrals to the Behavioral or Social Medicine Departments will be reviewed on a case-by-case basis using criteria that support social service or behavioral health intervention at each organization.

Health Education Classes

Health education classes will provide patients with an additional opportunity to learn about the importance of medication adherence for a healthier lifestyle.

Community Programs

There are many support programs in the community to assist patients with their chronic conditions. Usually, the Public Affairs or Human Resources Departments have this information for clinicians to give patients. The various departments may also provide this information for the members.

Web Site Tools (See Adherence Tools Section)

Clinicians and patients of KP may access the Web site: KP.org: Drug encyclopedia and health encyclopedia.

Summary

"Increasing the effectiveness of adherence interventions is likely to have a far greater impact on health than any improvement in medical treatments, including highly promising advances in biomedical technology."[13]

By identifying barriers that prevent patients from taking their medications as prescribed, by providing patients with targeted solutions to the identified barriers, by motivating and empowering patients, by

CLINICAL MEDICINE

The B-SMART Appropriate Medication-Use Process: A Guide for Clinicians to Help Patients— Part 2: Adherence, Relationships, and Triage

providing tools to keep patients on track, and by referring patients to other services when needed to address other needs, we will significantly improve adherence to therapy plans and improve overall outcomes more than any one component alone. Part 2 completes this B-SMART approach to medication optimization, by discussing: adherence tools and reminders to keep patients on track; relationships: building positive relationships; and triage: direct patients' medication management plan into the broader health care system. ❖

Disclosure Statement

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Distal End of the Stomach

Before prescribing multiple doses of this size
[physicians] should try several doses on themselves.
The human stomach differs from a glass beaker …
there is an intestine attached to the distal end of this stomach.

*— John F Morissey, Robert F Barreras. Drug therapy: Antacid therapy.
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