

Notes on Medication Adherence

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- Half of patients hospitalized with congestive heart failure are readmitted within 90 days [1]. Patients not taking prescribed medications is a factor in 64% of hospital admissions for congestive heart failure [2].
- 63% of people with diabetes have HbA1c levels greater than 7.0% [3]. An average of 65% of people with diabetes eat the prescribed diet, 19-30% perform regular exercise, and 7% carry out all recommended self-management behaviors [4].
- 66% of people with hypertension have poorly-controlled blood pressures [5]; more than half of uncontrolled hypertensives do not take medications as prescribed [6].

The gap between evidence-based guidelines and what actually happens is huge.

Is it a clinician problem, a patient problem, or a system problem? How you solve it depends.

What would be a clinician problem? We assume clinician knows which med to prescribe. Clinician doesn't explain the med clearly. Clinician prescribing too many meds. Clinician not checking that patient agrees with taking the medication. Patient leaves office without knowing what to do.

Patient problem? Can't afford the med, doesn't believe they have a health problem, side effects that they often don't report, too many meds and can't handle complicated regimen, don't trust the med to help them, personal priorities not related to managing their chronic illness.

System problem? Too little time in the 15 minute visit.

Haynes article in JAMA: patients take about 50% of prescribed meds. Other authors believe that one-third of patients take medications as prescribed, one-third take them sometimes, and one-third do not take them at all. Some authors estimate that 30-60% of patients perform no part of a treatment package [11].

Med adherence is a self-management issue. Good self management support is needed to improve med adherence. Self management support consists of two things: information giving and collaborative decision making.

How are we doing on information giving and collaborative decision making?

Marvel et al. studied 264 visits to board-certified family physicians. Patients making an initial statement of their problem were interrupted by the physician after an average of 23 seconds. In only 28% of the visits were patients able to express their concerns completely. In 25% of the visits the physician never asked the patient for his/her concerns at all [20]. Another study corroborates this data, finding that patients were interrupted after a mean time of 18 seconds [21].

In a 1994 study, 76% of patients with non-insulin dependent type 2 diabetes received limited or no diabetes education [22]. Numerous studies show that as many as 50% of patients leave an office visit not understanding what they were told by the physician [23]. Minority patients receive less information about tests, procedures, treatments, and prognosis than white patients [27].

According to Schillinger et al., when physicians asked patients with diabetes to restate the physician's instructions – indicating that they understood what the physician said – the patients' HbA1c levels were lower than patients who were not given the opportunity to restate what they were told. This technique of assessing a patient's understanding is called "closing the loop." In this study, physicians closed the loop during only 12% of discussions of new information (a new lifestyle change recommendation or new medication). When asked to restate new information, patients responded incorrectly 47% of the time. Thus closing the loop (also called teachback), a simple technique of assessing patients' understanding, has the potential to improve patient comprehension and diabetes outcomes [28]. In another study, assessment of patient understanding (closing the loop) took place only 2% of the time [29].

Given the inadequacy of physician information giving, it is not surprising that approximately 50% of patients do not follow physician instructions in caring for their chronic illness [12].

We are not doing too well on information giving. How about collaborative decision making?

Braddock et al. studied over 1000 audiotaped visits with 59 primary care physicians and 65 surgeons in community practice. In 91% of decisions made in those visits, the patient was not truly informed of the options and consequences related to the decision; i.e. the patient was not engaged in collaborative decision-making [29]. African-American and other ethnic minority patients visiting a white physician report less involvement in medical decisions, less partnership with the physician, and lower levels of trust in physicians [30].

We are not doing too well on collaborative decision making.

How fix it? Let's do some PDSAs

PDSA 1: Measuring adherence

Patient on Metformin 850 mg. t i d for 3 months – maximum dose. HbA1c has not dropped from 9.5. Are you going to add a new medication or not? Depends on whether patient is taking the Metformin.

Measure: Ask the patient. Use the Haynes article question: Have you missed any pills in the past week? Positive answer suggests low adherence. Measure could be number of patients who say they missed any pills in past week over total number of patients in population of focus. See how that changes with an intervention. Alternatively, do a med adherence intervention, mark when the intervention started on your run charts of A1c, LDL, blood pressure, and if you see improvement in your measures after the intervention starts, that is significant.

Here's how I used to ask it in my primary care practice: Many patients do not take all their medications. I really don't mind if you are not taking all of your Metformin. But it would really help for me to know if you are taking your medications because that will help us decide what to do next. Have you missed any pills in the past week?

How to do measurement PDSA: take one clinician and 10 patients and ask them earnestly about taking their meds. Measure for each patient: taking all meds or not taking all meds. Or, taking all meds, taking some meds, taking no meds. That is a measurement PDSA, not an intervention PDSA.

Another, more complicated measure: Pharmacy refills. If you gave 90 Metformin pills for a month, with patient taking 3 per day, you can find out when the patient refilled the med. If no refill for 2 months, patient is probably taking half.

PDSA 2: Clinician problem: improve information giving: Closing the loop or Teach Back. I would like you to take 3 Metformin each day rather than 2. Just to be sure that I am clear, could you let me know how many Metformins I would like you to take?

One clinician and 10 patients: Get a measurement of adherence, and in the same visit close the loop. Keep closing the loop in every visit with those patients, measure adherence with the one question, or follow run charts of A1c, LDL, BP.

PDSA 3: Clinician problem: Improve collaborative decision making. Combine it with closing the loop. “Your HbA1c is not getting any lower. Do you feel that you would like to get your diabetes under better control?” If patient is in agreement with that goal, then say: “One way to improve the HbA1c is to increase your Metformin from 2 each day to 3 each day. What do you think about that idea?” If patient agrees, then ask them to close the loop to make sure they understand.

PDSA 4: System problem. Clinician doesn't have time to deal with elderly patients on 5 meds. One PDSA is to get the patients to bring in their meds. Dean story. Clinician tell patient to bring meds next time. Medical assistant reinforce after visit. Day before visit, med asst calls patient to bring med. Try with one clinician, one MA, 10 patients.

PDSA 5: System problem: train MA to help with med adherence. Patient brings meds to MA. MA matches what patient says she is taking with what is on clinician's medication list in the chart. Fills out a real med list saying what patient is actually taking, puts both med lists on front of chart so clinician can figure out what to do.

PDSA 6: System problem: MA before the visit do an investigation of whether and why patient not taking meds. Ask: I really don't mind if you are not taking all or some of your Metformin. However, it would really help the clinician to know if you are taking your medications because that will help her decide what to do next. If patient not taking meds, MA says: people don't take all their meds for different reasons: they can't pay for them, there are side effects, you don't really believe the med will help you, you couldn't get to the pharmacy because you don't have transportation, the wait at the pharmacy is too long? Can you say why you aren't taking your Metformin?

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NOTE: References are from Bodenheimer T. Helping patients improve their health behaviors: what system changes do we need? Presented at American Heart Association, May 2004 Available from Tbodenheimer@medsch.ucsf.edu