Time requirements for diabetes self-management: Too much for many?

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Practice recommendations

- The care physicians commonly recommend may be too time-consuming for many patients. Find out how much time is available and ask about the pressures on that time.
- If time requirements are onerous, help patients set priorities to maximize health.

Abstract

Background In *Crossing the Quality Chasm,* the Institute of Medicine laid out principles to improve quality of care and identified chronic diseases as a starting point. One of those principles was the wise use of patient time, but current recommendations for chronic conditions do not consider time spent on self-care or its impact on patients' lives.

Objective To estimate the time required for recommended diabetes self-care.

Methods A convenience sample of 8 certified diabetes educators derived consensus-based estimates of the time required for all self-care tasks recommended by the American Diabetes Association.

Results For experienced patients with type 2 diabetes controlled by oral agents, recommended self-care would require more than 2 extra hours daily. Elderly patients and those with newly diagnosed disease, or those with physical limitations, would need more time. Exercise and diet, required for self-care of many chronic conditions, are the most time-consuming tasks.

Conclusion The time required by recommended self-care is substantial. *Crossing the Quality Chasm* suggests how clinicians and guideline developers can help patients make the best use of their self-care time: elicit the patient's perspective; develop evidence on the health consequences of self-care tasks; and respect patients' time.

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To what extent does the time needed to perform diabetes self care diminish patients' willingness to follow recommendations? Are there means of making self care more acceptable? Consider the following observations about chronic disease in general.

The Institute of Medicine has highlighted the extent to which medical care falls short of its potential. *Crossing the Quality Chasm* recommended 10 principles to reorient health systems; among them:

- shared information and decision-making to better reflect patient preferences
- evidence-based decision making

- continuous decrease in waste of "resources or patient time."

Chronic conditions were identified as "a starting point" for applying these recommendations since they are "the leading cause of illness, disability, and death in the United States, affecting almost half of the population and accounting for the majority of health care resources used."[1]

Self-care, or self-management, is essential to good care of diabetes, one of the most common chronic conditions. Funnell and Anderson noted that "[m]ore than 95% of diabetes care is done by the patient."[2] Physicians offer instruction, but day-to-day implementation depends on patients themselves, who care for their diabetes "within the context of the other goals, priorities, health issues, family demands, and other personal concerns that make up their lives,"[2] When their advice is not followed, and patients' health suffers, physicians are frustrated by what can seem their patients' refusal to do the best for their condition.

Researchers have examined a broad range of potential reasons for noncompliance with diabetes self-care recommendations, from patients' attitudes and beliefs, to health motivation, readiness to change, language barriers, medication regimens, and trust in the medical profession.[3–9] Although self-management programs have become more patient-centered,[10–15] a review of patient-centered approaches in diabetes noted that "it is apparent that factors other than knowledge are needed to achieve long-term behavioral change."[16] A review of medication compliance concluded that "current methods of improving medication adherence for chronic health problems are mostly complex, labor-intensive, and not predictably effective."[17] Something crucial to success has yet to be identified.

An important missing link may be the time demands of self-care. Evaluations have considered program design and outcomes, but not how the length of diabetes self-care regimens affects patient outcomes. Indeed, scant attention has been paid to time requirements[18] and little is known about how much time current recommendations take. To begin to draw attention to time

Little attention has been paid to the time requirements of recommended diabetes self-care

requirements as a potential barrier to good self-management, we present estimates of the time required by recommended diabetes self-care.

METHODS

Certified diabetes educators (CDEs) teach self-care skills and evaluate adherence. Their training is based on the American Diabetes Association's (ADA) *Clinical Practice Recommendations,*[19] which represent the standard of care for diabetes. The guidelines of the American Association of Diabetes Educators[20] cover additional self-care elements, such as stress management and social support. We assembled a convenience sample of 8 CDEs, all registered dietitians or registered nurses, from a large teaching hospital and the nearby community. They averaged 13 years of experience as CDEs and 90 patients/month (range, 30–150). An experienced moderator led the meeting; proceedings were tape-recorded and transcribed.

We identified each self-care task in the ADA's 2002 recommendations; the selections were confirmed by a practicing nurse clinician. We asked the CDEs to add other tasks they considered necessary for the best self-care. Since the focus was on *extra* time needed for self-care of diabetes, we excluded self-care that most people already do, such as tooth brushing, but retained care that most people *should* do but generally do not (exercising or preparing healthy foods).[21–24]

Table 1 details our assumptions and definitions. **Table 2** lists self-care tasks. We asked the CDEs to consider a typical patient with type 2 diabetes in a stable phase of care, taking oral hypoglycemic agents, and self-testing blood glucose once daily. They reached consensus on the average time required by this patient for each task, in minutes per day, including preparation and clean-up time. Discussion of other patient types and of circumstances that would change estimated times were encouraged by the moderator.

TABLE 1

Diabetes self care: Assumptions about patients, and definitions of tasks

Patient characteristics	The CDEs were asked to consider a typical patient with type 2 diabetes, in a stable phase of care, on oral hypoglycemic agents and self-testing blood glucose once daily. These estimates are shown in **Table 2**. Type 2 diabetes accounts for 90–95% of diabetes in the U.S.[25] To provide a basis for considering the variability of time requirements (see text), they also made estimates for other types of patients, ranging from those whose diabetes is controlled by diet alone to elderly patients with multiple chronic conditions.
Task definitions	Time, in minutes per day, represents extra tasks required by diabetes self-care, or extra time for usual tasks. All estimates include time for preparation and cleanup.
	Taking oral medications (2 min/episode of medication taken) includes time to organize pills for the day or week. All patients are assumed to take aspirin.
	Problem solving includes time to make decisions about changes in medication or diet in response to blood sugar values and symptoms, and time for general tasks such as remembering to carry medications, snacks, etc.
	Shopping time is the additional time required to read nutrition labels for carbohydrate counting and to make extra trips for perishable fresh produce. Transportation time for extra trips is included.
	Exercise includes time to change clothes, shoes, etc. Since most adults do not exercise (see text) the full time required for exercise is included.
	Support groups include internet groups, family support, reading groups, supportive group settings, formal diabetes support groups, and church.
	Scheduling appointments does not include the time required by the appointments themselves.

RESULTS

Table 2 presents estimated times for a stable patient with type 2 diabetes on oral hypoglycemic agents. The ADA's recommendations would take this patient 122 minutes per day, more than 2 hours; other tasks bring the total to 143 minutes per day. The first 4 elements, which are unique to diabetes, take only 22 minutes per day. Activities related to exercise or diet, recommended for many chronic conditions, account for most of the time.

The CDEs estimated that patients with newly diagnosed diabetes would take 25% to 30% longer for all tasks. Older and more infirm patients (eg, persons with neurological disorders/stroke, neuropathy, visual impairments, or depression) could require twice as long for most tasks and might also need the help of a caregiver. They might not be able to carry out some tasks, such as exercise. Patients taking insulin need only a few more minutes per day.

DISCUSSION

Estimates by CDEs suggest that recommended diabetes self-care requires more than 2 hours

daily. For infirm patients or those with newly diagnosed disease, even more time is required, and some tasks involve the help (and time) of caregivers. These estimates raise an important issue: the care physicians commonly recommend may be too time-consuming for many patients.

In one study, persons with diabetes reported spending a median of 48 minutes daily on self-care tasks.[18] Only a few spent no time, but a third to a half skipped specific elements of self-care completely. When asked "What is the biggest obstacle for you in effectively managing your diabetes?" more than a fifth answered "not enough time."

When patients choose which tasks to undertake, their choices may not optimize health. Although little evidence is currently available to help clinicians and patients prioritize self-care tasks, some tasks are surely more important for certain patients than others. Younger, more mobile patients may benefit more from exercise education than wheelchair-bound patients with advanced disease. Foot care is more important for patients with sensory neuropathy than for those with normal sensation. In the absence of evidence, physicians' clinical experience can be an important guide to maximizing the benefits of self-care time.

The principles in *Crossing the Quality Chasm* suggest ways to develop care interactions and guidelines that deal with these realities while keeping the goal of better health front and center.

(1) The report calls for "recognizing the patient as the source of control and customizing care based on patient needs and values." Clinicians need to discuss time with patients, to find out how much time is available and the pressures on that time. Such discussions are consistent with the Chronic Care Model, which recommends clinicians "elicit and review data concerning patients' perspectives" and "help patients to set goals and solve problems."[15]

(2) The report calls for evidence-based care and recommends that patients "have unfettered access to their own medical information and to clinical knowledge." Research is needed to identify the tasks that yield the most improvement in symptoms and health for particular patients. Such "time-effectiveness studies" would show which tasks make the best use of self-care time for patients with specific symptoms and compli-

TABLE 2

Estimated time required for recommended care*

Task	Minutes/day
ADA recommendations	
Home glucose monitoring	3
Record keeping	5
Taking oral medication	4
Foot care	10
Oral hygiene, flossing	1
Problem solving	12
Meal planning	10
Shopping	17
Preparing meals	30
Exercise	30
ADA SUBTOTAL	**122**
Other desirable self-care	
Monitoring blood pressure	3
Stress management	10
Support group	2
Administrative tasks	
Phoning educators, doctors	1
Scheduling appointments	1
Insurance dealings	2
Obtaining supplies	2
TOTAL TIME	**143**

*Estimates for patients with stable diabetes who are taking oral agents and self-monitoring blood glucose once

When asked about obstacles to managing their diabetes, over a fifth of patients answered "Not enough time"

cations. Until such data are available, physicians must rely on clinical experience to help guide patients.

(3) The report calls for "continuous decrease in waste" noting that "the health system should not waste resources or patient time" (italics added). When self-management requires a lot of time, that time deserves to be used carefully and well. We suggest that self-care guidelines consider time requirements. Where they are onerous, ways should be found to reduce them or to help patients set priorities.

Diabetes self-management is an essential component of good care. The time patients devote to self-care deserves serious attention in efforts to improve the quality of care.

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