

A shared treatment decision-making approach between patients with chronic conditions and their clinicians: the case of diabetes

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Abstract

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In this paper, we discuss the Charles *et al.* approach to shared treatment decision-making (STDM) as applied to patients with chronic conditions and their clinicians. We perceive differences between the type of treatment decisions (e.g. end-of-life care, surgical treatment of cancer) that generated existing approaches of shared decision-making for acute care conditions (including the Charles *et al.* model) and the treatment decisions that patients with chronic conditions need to make and revisit on an ongoing basis. For instance, treatment decisions in the chronic care setting are more likely to require a more active patient role in carrying out the decision and to offer a longer window of opportunity to make decisions and to revisit and reverse them without important loss than acute care decisions. The latter may require minimal patient participation to realize, are often urgent, and may be irreversible. Given these differences, we explore the applicability of the Charles *et al.* model of STDM in the chronic care context, especially chronic care that relies heavily on patient self-management (e.g. diabetes). To apply the Charles *et al.* model in this clinical context, we suggest the need to emphasize the patient–clinician relationship as one of partners in making difficult treatment choices and to add a new component to the shared decision-making approach: the need for an ongoing partnership between the clinical team (not just the clinician) and the patient. In the last section of the paper, we explore potential healthcare system barriers to STDM in chronic care delivery. Throughout the discussion we identify areas for further research.

Introduction

In this paper, we discuss the concept of shared treatment decision-making (STDM)¹ for patients with chronic conditions and their clinicians. We will use diabetes as the example of a chronic disease to frame our discussion because

it is common and it imposes an important burden on patients and the healthcare system²; its management challenges clinicians and patients; presents organizational challenges to the healthcare system³; and, fundamentally, demands active patient involvement in self-management for improved clinical outcomes.^{4,5}

In the context of patients with diabetes, recent systematic reviews of interventional studies seeking to promote greater patient participation in decision making have found that interventions targeting the patient (such as patient coaching to empower the patient to ask questions and participate in decisions) result in measurable improvements in quality of life and in physiological markers of disease control,^{6–8} such as the HbA1c, a measure of the prevailing blood glucose level over the most recent 2–3 months. This evidence further suggests that enabling the patient to play the role they prefer in decision making may have important consequences for carrying on decisions in the patient space after the consultation. Thus, we are motivated to embark on this analysis by both the increasing prevalence of chronic diseases such as diabetes, and by the increasing interest in understanding patient involvement in decision making in this context.

We examine one of the dominant approaches of STDM,¹ developed in the acute care context, to assess how it applies to the chronic care context and to explore if aspects of this approach need to be modified or new elements added to take account of the distinctive features of shared decision-making processes in chronic vs. acute care. For instance, treatment decisions in chronic care (e.g. treatment decisions for diabetes, hypertension, asthma) are more likely to require a more active patient role in carrying out the decision and to offer a longer window of opportunity to make decisions and to revisit and reverse them without important loss than acute care decisions (e.g. end-of-life care, surgical treatment of cancer). The latter may require minimal patient participation to realize, are often urgent, and may be irreversible. In particular, we suggest emphasizing the role of the partnership between patient and clinician in the Charles *et al.* model and note how this emphasis addresses the distinctive features of STDM in the chronic care context. While our focus will be on diabetes, we think that the approach described in this paper applies to other chronic diseases with similar characteristics.

We provide, as an example to help focus our discussion, the case of Mr. M:

Mr. M is a 68-year-old man. A retired bar tender who was recently diagnosed with type 2 diabetes. Mr. M is obese, and has not had any other medical problems or diabetes complications. Since his diagnosis of diabetes (based on two high fasting blood glucose levels that his doctor obtained as part of a routine evaluation), Mr. M has been working on his diet and level of physical activity. Three months after his diagnosis, Mr. M walks for 30 min on Fridays at the mall, avoids snacks in between his main meals, and has lost 1 kg.

He spends most of his time reading the newspaper, doing some shopping, cooking, and completing crossword puzzles. He also meets with friends at the bar three nights-a-week to play poker (they gamble peanuts). He is married and has two children who are living away from home. His wife is active at local charities and, on the nights her husband is at the bar she goes to play bingo. Their main activity together is to go out to enjoy fine dining on most weekends.

The new family doctor in town, who Mr. M likes, is the one that ordered the laboratory tests and who suggested 'lifestyle changes' to control the diabetes without the need for pills. Mr. M feels fine and thinks he is doing a good job following his 'doctor's orders'. He is returning to see his doctor tomorrow.

The shared decision-making approach in 'acute' decision-making

Shared treatment decision-making means different things to different people. Charles *et al.* developed a conceptual framework that clarifies the meaning of STDM in the acute care context and defined its key characteristics.¹ This framework describes STDM as a relationship between patient and clinician in which there is bidirectional exchange of information, participation of both parties in the deliberation, and agreement about the decision to implement.

This description of STDM lies in-between two other often cited approaches to treatment decision-making, the informed and the paternalistic approaches.⁹ In the former, information flows only (or mostly) from clinician to patient (e.g. the treatment options and their potential harms and benefits) with the expectation that the patient will be the sole decision maker (i.e.

chooses the treatment). This approach assumes that patients can fully understand all the technical information about the choices and consider these choices in the context of their life. Conversely, the most traditional approach to decision making, the parental or paternalistic approach, denotes some information flow from health professional to patient, but keeps the health professional as the sole decision maker with limited patient participation. In contrast to these extremes, the Charles *et al.* model of STDM depicts both patients and clinicians as being partners in this process, participating together in all phases, including information exchange, deliberation, and deciding on the treatment to implement.^{9,10*}

Elaboration of this spectrum of treatment decision-making approaches has been helpful for analysing the clinical encounter, in terms of understanding patient and clinician preferences for decision-making processes,¹²⁻¹⁴ and for developing tools (e.g. decision aids such as the decision board) that support the transfer of technical information from physicians to patients to create more informed patients and to encourage their participation in treatment decision-making.¹⁵⁻¹⁸

When Charles *et al.* developed their conceptual framework to define the meaning of STDM and how this differs from other decision-making approaches, they were considering the situation of a discrete treatment decision for serious acute care illnesses with important and immediate consequences to the patient. These decisions involved true choices (plausible and feasible alternatives), with each alternative involving

potential benefits and harms. One clinical context most commonly resembling this situation is the initial diagnosis of cancer (e.g. breast, prostate). Indeed, large amount of information about the STDM approach comes from research conducted with women with newly diagnosed breast cancer considering alternative surgical approaches,¹⁵⁻¹⁸ an acute care decision. Table 1 describes this type of decision across a number of different clinical dimensions; while not all acute care decisions share all of these characteristics we believe that many share most of these. Other examples of acute care decisions include surgical repair of bone fractures (vs. casting), and the use of thrombolytic agents to decrease the long-term sequelae of an ischaemic stroke.

Acute care decisions often involve making major choices 'here-and-now' with little time and opportunity for consideration because the disease requires action before the 'horse is out of the barn'. Once acted on, some choices (such as surgery) will have irreversible physical and psychological consequences. Some treatment decisions are aimed at preventing likely consequences for which there is vivid and explicit representation in the patient's psyche (e.g. death). Some acute care decisions may have meaningful, short-lived social repercussions. For instance, family or friends may need to care for the patient while recovering and there is an expectation that the patient will be motivated to recover enough independence to resume self-care. The interventions are often highly technical and unfamiliar (e.g. the administration of a chemotherapeutic cocktail or a thrombolytic agent, radiation therapy through multiple windows), the patient plays predominantly a passive role (e.g. receives treatment), and the treatments are often protocol-driven and inflexible.

In acute care conditions requiring decisions, patients may play the classic sick role, which is appropriate and socially acceptable to the extent that it is temporary.¹⁹ The person in the sick role does not assume responsibility for their self-management; rather they place this responsibility in the hands of the health professional whose orders they must follow in order to get well, i.e. to get out of the sick role and resume normal life

*There is a fourth model called the physician-as-perfect-agent model in which information flows from patient to clinician (e.g. the patient's life and health goals, beliefs, preferences and expectations about the choices), and the clinician is the sole decision-maker. This approach assumes that the clinician can get to know the patient's preferences well enough to make the same treatment choice that the patient would have made if he had the knowledge that the clinician has. While skilled clinicians with adequate tools (such as decision boards) may feasibly inform patients about the technical details of the treatment choices, the converse is unrealistic. Thus, the physician-as-perfect agent approach remains a theoretical construct.¹¹

Table 1 Simplified distinctions between acute care and chronic care decision-making

	Acute care decision-making	Chronic care decision-making
The clinical circumstance		
Case examples	Surgical treatment choices for patients with new diagnosis of breast cancer; leg amputation vs. medical treatment or revascularization in a patient with diabetes and ischaemic limb pain and ulcers	Lifestyle and pharmacological treatment choices for patients with new diagnosis of uncomplicated type 2 diabetes; living with the sequelae of successful cancer treatments
Rhythm (natural history)	Accelerated deterioration (local tumour growth, pain, bleeding, infection) with hyperacute complications (brain metastases and seizures)	Chronic progression (fatigue, pain) interrupted by acute complications (stroke, vision loss, amputation)
Patient's role	Sick role is acceptable over a brief period	Patients may shift the disease to the background to live their lives and shift it to the foreground prompted by symptoms, complications or impending office visits
Decision making		
Decision-making setting	At health care facility	At patient's habitual personal and social space (bathroom, dining room, workplace)
Opportunity to make the decision	One narrow window of opportunity to consider the choices	Multiple windows of opportunity, choices can be revisited often
Decision reversibility	Irreversible choice	Reversible choices
Nature of the choices		
Characteristics of treatment	Inflexible, en-block, or protocolized treatments	Continuously tailored and responsive to disease progression
Specialized knowledge for treatment administration	Highly technical and unfamiliar choices; administration requires special expertise	Familiar choices of apparent low technical complexity (eat less fat; take this pill); administration requires some training
Treatment/monitoring	Intermittent treatment, ongoing monitoring	Ongoing treatment and monitoring
Patient role during treatment administration	Passive (treatment is inflicted on the patient)	Active (patient controls treatment administration)
Role of compliance/adherence/concordance	Mostly limited to showing up to appointments – most treatments administered by health professionals at facility	Crucial since patients self-administer treatments and choose their lifestyle
Social impact of treatment	Limited to economic/social burden of caring for patient for a limited time after treatment	Lifestyle intervention impacts the family; ongoing care needed lifelong
Characteristics of the outcomes		
Type of outcomes	Dichotomous, discrete Mostly vivid, explicit, urgent	Continuous, progressive Mostly insidious; some less vivid, implicit (atherosclerosis, kidney damage)
Connotation of the outcomes	Frightening, fatal	Less ominous
Timing of outcomes	Short term	Long term
Improvement	Final (resolution of cancer; elimination of ischaemic pain)	Periodic (symptom control for a period)
Cure	Live without the illness	Living acceptably with the illness

again. The outcomes of treatment are often discrete (alive and free of disease or sequelae, alive but with disease or sequelae), and occasionally final (death, cure).

Patients (and their families) may typically be more aware about the patients' goals, beliefs, and expectations than others and may be the best judges of their own welfare.²⁰ Clinicians may be

the most informed about the relevant treatment strategies, their complex delivery, inconveniences, and potential harms and benefits. Thus, the different components (i.e. technical knowledge and personal preferences) needed to make the decision lie in different individuals. How these individuals will interact, i.e. what approach they will use to make decisions, will be largely up to them. Indeed, this could be one of the first decisions the participants make, or they could 'dance' into one style or another without explicitly acknowledging these shifts or deciding about them. In Western cultures it is becoming increasingly unacceptable to ignore patients and make decisions 'in their best interest' without their input, including the choice of decision-making approach.²¹ For example, the clinician cannot force the STDM approach onto patients who prefer other strategies, including the paternalistic approach. Ideally patients and clinicians may choose to engage in whatever approach of decision making best fits the preferences of those involved and the decisions they are considering.

STDM capitalizes on the patient-clinician relationship to foster an interactive process whereby the partners (patient/family-clinician) can negotiate an agreed-upon decision after exchanging whatever pertinent information they think is important in deliberating about the treatment choices. In the next section, we will explore what STDM means in the context of chronic disease in general, and of diabetes in particular.

Decision-making in patients with diabetes

Watt has described some characteristics of decision making that apply differently in the acute and chronic illness context.²² Like Mr. M, patients with chronic uncomplicated conditions face treatment decisions that differ in important ways from 'acute' decisions (Table 1). For instance, Mr. M's faced options that included:

- To increase his level of physical activity and reduce his caloric intake in order to lose weight, enhance insulin sensitivity and improve his metabolism (i.e. normalize glucose levels);

- To take pills that improve his metabolism without making important changes to his lifestyle; and
- To change his lifestyle and take medications.
- Not to make any changes to his lifestyle and not to take medications.

During the previous encounter, Mr. M and his doctor had agreed on Mr. M making some changes to his physical activity and diet. These changes helped him control and even lose some weight over the last 3 months. On the contrary, he did not change other aspects of his lifestyle that could further enhance his health (e.g. like increasing the number of days he goes for a brisk walk). Arguably, little is lost as he can make some of those changes now or at a later time. Thus, there are several opportunities to make decisions and to revise them when they carry immediate consequences that the patient finds costly, inconvenient, or undesirable; this patient's experience may inform future decisions. When making day-to-day choices, Mr. M may have a sense that some of these choices seem to adversely affect his diabetes control, but, beyond that consideration, the consequences of his actions may not be immediately noticeable and may occur in the distant future, if they occur at all.

The choices that Mr. M could make may adversely affect his social activities and his family routines (e.g. he may decide to forgo dining out with his wife on the weekends and bar meetings because he overeats in those settings). The absence of objective signs of disease makes it difficult for patients like Mr. M to garner sympathy and support from friends and families and chronically remain in the sick role, thus forcing them to take responsibility for self-care and for making ongoing and unaided treatment choices throughout the day to remain in control (e.g. to eat a salad or a cheesecake, to walk or drive to the store, to take the pills today). This situation may temporarily change (to one resembling the acute disease situation described earlier) when the patient is diagnosed with a complication (e.g. stroke, limb-threatening foot ulcer).

Another key difference with acute care decision making is that for chronic conditions, most decisions will occur in the patient's own 'space': they will choose to take pills in the bathroom, eat a snack in the kitchen, order a salad during the business lunch, buy cereal in the supermarket, and forgo dessert at the restaurant.²³ Only a minority of decisions (i.e. whether to initiate insulin) may occur fundamentally at the health care facility. Because the implementation of the agreed-upon choice will occur in the patient's space and with the almost exclusive use of patient resources, clinicians can expect patients to have at the time of diagnosis or to acquire over time the necessary expertise to judge the feasibility of certain treatment choices.

During regular diabetes encounters, clinicians, diabetes educators and dieticians may review with patients the outcomes of their interim performance with emphasis on measurable and objective parameters such as weight and glycaemic control. Other issues, perhaps of greater importance, such as the ability of patients to cope with the chronic condition, their perceived self-efficacy, their social support, their access to accurate and understandable information, and their perceived barriers to achieving treatment goals may also be discussed. Most of the clinical encounter will then focus on behavioural and pharmacological interventions to help patients achieve treatment goals. These treatment decisions, while at first glance seem similar to acute care treatment decisions differ in the same important ways we have described above for treatment decisions made in the patient's space. For instance, decisions could be made over an extended window of time and may be revised frequently: the clinician and the patient may negotiate to forgo changes in medications and delay these decisions until the next visit with no perception of a lost opportunity.

The reversibility and apparent lack of immediate penalties for reversing or delaying decisions allow patients to stop adhering to the strategies to which they had decided to adhere earlier. This behaviour may result from a complex interaction between the patient's information and motivation and the external mediators

of his or her behaviour. It is quite possible that at the time of the decision, expert patients already know about the potential barriers they may encounter in implementing this decision and about their own abilities to overcome them. Thus, their contribution with this information to the decision-making process may facilitate the selection of treatment strategies most likely to be successfully implemented.²⁴ Therefore, the ongoing partnership between patient and clinician could improve adherence to the choices made.²⁵

The shared treatment decision-making approach in chronic disease

Given the above description of treatment decision-making in chronic care in general and in diabetes in particular, we suggest the need to further explore the Charles *et al.* model of STDM and its implementation in encounters of patients with uncomplicated chronic disease and their clinicians. This exploration takes into account the different emphases particular to acute and chronic care decision-making illustrated in Table 1.

In this context it may be best to consider several phases: establishing partnership, information exchange, deliberation on choices and decision making. These phases of decision-making are arbitrary distinctions presented linearly for conceptual clarity, but we recognize that, in practice, these phases may evolve in an iterative fashion. Patients and clinicians can engage in information exchange followed by deliberation followed by more information exchange followed by further deliberation and so forth, with trust and partnership evolving throughout. The critical adaptation of STDM to chronic care decision-making is the addition of emphasis to the process of establishing a partnership.

We will now discuss the phases recognized in STDM as they apply to chronic care decisions: (1) establishing an ongoing partnership; (2) information exchange; (3) deliberating on options; and (4) deciding and acting on the decision.

Ongoing partnership for shared decision-making in chronic care

The first phase of this approach is the concept of an ongoing partnership. In the most general sense, this relationship is between the 'patient team' (the patient, immediate family members, members of the patient's social net and workplace, other patient's with the same condition) and the 'healthcare team' (clinician – either nurse or physician, educators, dieticians, personal trainer), takes place in the healthcare space (appointments, email and phone contacts, hospitals, emergency room and urgent care centres, clinic offices) and in the patient space (home, workplace, areas of recreation, travel), and can potentially last a lifetime after the diagnosis of the chronic condition.

The process of establishing a partnership may be most important during the first encounters between patients and clinicians, and in the long run whenever a new party joins the patient or the healthcare teams, and, perhaps critically, when the patient is having difficulties carrying on a decision. In the latter case, for example, patients and clinicians may need to return to this partnership building phase before considering a new decision. For strong established partnerships, this phase would be de-emphasized, if not implicitly reinforced by continued expressions of commitment, reassurance, empathy, respect, and sincerity.

The major goal of the ongoing partnership is to muster trust and mutual respect that will create an environment conducive to successful patient self-management. Because in chronic disease self-management most of the decision implementation takes place in the patient space under the patient's stewardship, the patient should be able to acknowledge failures and shortcomings without fear of disappointing the clinician or damaging the relationship. The encounter environment should also allow patients to point out the clinician's shortcomings or failures in understanding the patient's context (social and work obligations, for instance) that result in the recommendation of impractical solutions. Thus, an ongoing

partnership is key in choosing initial approaches and in allowing for subsequent revisions.²⁶

The relationship of trust may foster problem-solving, communication, and support and replaces the 'going to the principal's office' approach. In the latter, patients face the laboratory report of metabolic test results and the weight on the doctor's scale as a 'report card' of the patient's effort: they either pass or fail. Also, they receive homework (e.g. take this pill, follow this diet, walk this distance) without much say about its content. If they continuously fail to complete this homework, patients can get expelled (e.g. 'If you do not stop smoking I cannot continue to take care of you'). This does not mean that the healthcare team cannot honestly try to persuade a patient to take courses of action different from those the patient would have chosen on their own, particularly if these seem feasible in the patient's context and are backed by solid scientific evidence of effectiveness. In doing so, clinicians may discover reasons why patients will not be better off with these strategies, and patients may discover and correct misinformation that previously made the alternative unacceptable.²⁷

In the absence of trust and respect, the relationship may fail and lead to increased patient suffering. Patients will not have the opportunity and comfort to report to the clinician their interim achievements (e.g. starting a moderate walking program) when the 'report card' suggests continuing failure (e.g. weight is unchanged from last visit). Patients may not get to discuss and problem-solve their failures (e.g. unable to start a walking program) when the 'report card' suggests improvement. And patients will learn to accept 'homework' they do not intend to complete in order to save face and maintain the relationship and continue to receive care. Caring clinicians will often perceive this situation, but may lack the skills to foster ongoing partnerships with patients with chronic illness.²⁸ The identification of effective strategies to develop these skills represents a research opportunity of the approach.²⁹

Information exchange

According to Charles *et al.* approach to STDM, the partners need to share information pertinent to the decisions before them.¹ Clearly, there is a need to share 'technical' information about the available choices and their potential outcomes; matching research evidence to the patient's problem, and communicating the information about the potential benefits and side effects of different actions to foster patient understanding are necessary skills. While the clinician often initiates the process of sharing technical information, chronic care patients often gather and may want to share the technical information obtained from discussions with other clinicians, family and friends, the media, and the Internet. Particularly critical in chronic disease, is for patients to share information about themselves, their social circumstances and lifestyles (especially important earlier in the relationship or when life circumstance change). As the treatments will take place in the patient space, it is crucial for the clinician to gain understanding about what the patient is up against when implementing a given treatment strategy. Sharing of information about the personal and social context of the patient may be critically important to patients and clinicians who partner to face chronic disease but who share little in common (live in different towns, belong to different socio-economic groups, and come from different cultures³⁰).

To the extent that clinicians come from different cultural or socio-economical worlds or hold different world views³¹ (resulting from clinicians' training and experience), exchanging information about the relevant values and preferences is desirable. From our discussions above, as the patients take the treatments and monitor their efficacy and suffer the consequences of both the disease process and the treatments, it follows that their values, preferences, goals and expectations are important.²¹ The informed decision-making model approach is to discard clinicians' values and preferences as clinicians experience neither the disease nor the treatment outcomes; how clinicians weigh the choices should not be

relevant. Evidence that justifies this approach include studies suggesting that clinicians place greater value on avoiding complications of the therapy they prescribe than on avoiding the complications resulting from the natural history of the disease that the therapy can help prevent.³²

An alternative approach, one that is integral to the STDM approach, is that clinicians' values and preferences should play a role in decision making. According to this approach, clinicians should communicate their values and preferences explicitly to the patient. They should also state why they hold these values and preferences enabling patients to judge whether the basis for the expressed values and preferences of clinicians makes sense to the patients and is relevant to their situation. It is possible that patients and clinicians learn about each other's values and preferences over the course of their ongoing relationship which may be different from the acute care situation in which the participants have no common history. However, whether this is the case is not currently known and represents a research opportunity for further study.

Deliberating on options

This phase describes the process of considering the pros and cons for each one of the relevant choices. This phase has received limited attention in chronic care decision-making and little is known about the mechanics of this negotiation, particularly in the situation where the partners begin the process preferring different courses of action. The extent to which a partnership has developed may influence the extent to which the deliberation phase turns into a power match (the clinician with the power to prescribe or not, the patient with the power to adhere or not), or a concerted effort to find the best alternative for the patient. The extent to which the information phase was complete and led to mutual understanding may facilitate the deliberation phase. Options may remain on the table for consideration after an iterative process of information exchange about the choices and their potential outcomes, and about the values, preferences and

contextual issues relevant to these choices. Clinicians and patients may then work together to identify the best strategy for this patient at this time, one that will be feasible for the patient to implement.³³

The patient and clinician may disagree on a given course of action, i.e. back to Charles *et al.*, they may not share the outcome of the process, a treatment decision.¹ Disagreements may occur when the clinician insists on a course of action that is unacceptable to the patient, or when patients make choices that seem incorrect or 'irrational' to the clinician. In the acute context, for instance when time is of the essence, these disagreements may disrupt the partnership; because the patient prefers a course action that is unacceptable to the clinician, the clinician may need to transfer the patient's care to another colleague. In the chronic care setting, disagreements can be useful tests of the degree of understanding of each other that the partners have achieved. Considered this way, disagreements may prompt further information exchange or deliberation which may further the partnership (Did the patient misunderstand the potential outcomes associated with this treatment? Did the clinician fail to consider a contextual barrier to implementing this treatment? Did the clinician misunderstand the goals and expectations of the patient?). In this view, the clinicians' role is to support the patient and their apparently suboptimal (from the physician's perspective) but ultimately acceptable choice and be ready and willing to revisit the issue at a later date, an opportunity afforded in the chronic care context.

Deciding and acting on the decision

Once a decision has been reached, patients (and their families) and the healthcare team will begin working on strategies to implement and support the decision in the patients' own space. For example, ongoing patient-clinician contact in the interim between office visits may allow for early identification of implementation barriers and promotion of the patient's own problem-solving skills. Also, patient and clinicians may

revisit the decision if unexpected implementation barriers emerge. An ongoing partnership for decision making should promote patient self-efficacy; whether our approach will make it more likely that patients will implement and stick to the decisions they have made is yet another knowledge gap and a research opportunity in this field.

Implementing the shared treatment decision-making approach in the chronic care context

Patients and clinicians willing to take an STDM approach to chronic care decision making may, however, encounter barriers imposed by the current organization of the healthcare system.

Many patients live longer and survive acute complications only to accumulate chronic diseases. Thus, there are growing numbers of patients living with chronic disease. Clinicians and the health systems in which they work will need to adapt to this increasing need. In contrast to the way the health system reacts to patients seeking help for acute concerns, innovative health systems are redesigning their delivery of care for patients with chronic conditions by planning the encounters between a proactive health team and activated and informed patients.^{34,35} The herein proposed decision-making approach is completely consistent with this predominant approach. Furthermore, STDM for chronic care decisions seems a more feasible model in such a redesigned context.

Furthermore, the worsening problem of inadequate appointment duration and long periods between visits that characterize chronic care delivery undermines the opportunity for meaningful interaction and partnership building. If patients can interact with the same healthcare team members over time, a situation commonly called continuity of care,³⁶ this may diminish the impact of shrinking encounter time and frequency (i.e. an ongoing relationship may already exist prior to the diagnosis of diabetes); however, health systems with poorly organized primary care systems often fail to offer continuity of care. For instance, patients and clinicians may

need frequent appointments to get to know each other. However, patients and clinicians may need to repeat this effort when one of them relocates, when patients lose access (through change in benefits, insurance or employment), or when clinicians die. Expanding the partnership to include the primary healthcare team (i.e. primary care nurse, diabetes educator and clinical pharmacist) may allow for a more sustainable and continuous relation even after the one of its members, the physician for instance, relocates, travels or dies.^{3,37} This highlights the challenge of developing and maintaining an ongoing patient–clinician relationship. Further research should focus on the amount of time needed (frequency and duration of visits, for instance), the skill set of the clinical team, and the best system designs that enable the development of this relationship.

However, other forces are at play during the clinical encounter that may affect the decision-making process. For example, clinical practice guidelines coupled with quality audits (of processes and outcomes) and a system of penalties and incentives may push clinicians to ‘ensure’ that patients decide to use and to adhere to ‘best’ therapies, e.g. intensive insulin therapy in patients with type 1 diabetes.³⁸ In this scenario, the system rewards clinicians for prescribing medication and monitoring its effects without apparent regard for whether patients find the medication choice consistent with their personal contexts, values and preferences (such as a patient that because of his job, operating heavy machinery, and previous extremely unpleasant experiences of hypoglycaemia caused by aggressively lowering glucose levels finds intensive insulin therapy profoundly undesirable). In this context, the clinician will insist and the patient (often only passively) will resist, ‘failing’ to meet the objectives of the program (e.g. HbA1c < 7%). To our knowledge, there is no clear evidence that the current strategy – an approach of insist–resist associated with pushing ‘best’ therapies and limited patient adherence – is superior in terms of patient important outcomes to a shared decision-making approach in which clinicians help patients choose the

strategy that best fits with their context, values, and preferences, even if, in the clinician’s view, it is a ‘second-best’ therapy.^{39,40} Would patients’ outcomes be better if the course of action is negotiated rather than dictated?

Conclusion

In this paper, we have discussed the differences between acute and chronic care treatment decision-making contexts and how these may affect the way patients and clinicians relate and make treatment decisions. In doing so, we explored how the Charles *et al.* approach of STDM plays out in the chronic care context, what aspects of the approach are particularly important in this context, and what new features need to be added to accommodate the distinctive nature of decision-making in chronic care. We have modified the approach to emphasize the role a healthy partnership between patient (and the patient’s family) and the clinician (and the rest of the healthcare team) in an approach of ongoing STDM. We think this modification deserves further refinement and we have outlined where we think some of the unknowns related to the approach lie (i.e. to what extent will the STDM model work with chronic care patients, in chronic care delivery systems, with clinicians working in this context?) and where research can contribute. Indeed, the epidemic of chronic disease and the challenges these conditions present to patients and clinicians and the context in which they meet to make decisions underscore the importance of working to bring greater analytic clarity to the issues presented here.

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