

**Primary Care for Patient Complexity, Not Only Disease**

Submitted for publication 5/28/09

*This copy for review purposes only; not for distribution or pre-publication in any form*

<sup>1</sup> Associate Professor, Department of Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN.

<sup>2</sup> Professor and Head, Department of Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN

<sup>3</sup> Director of Behavioral Medicine and Director of Program in Human Sexuality, Department of Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN

Corresponding Author:

C. J. Peek, Ph.D.

Department of Family Medicine and Community Health

University of Minnesota Medical School

MMC 381, 420 Delaware St. SE Minneapolis, MN 55455-0392

FAX: (612) 626-3619; phone (612) 827-8109

**Abstract**

Primary care is increasingly geared toward standardized care and decision-making for common chronic conditions, combinations of medical and mental health conditions, and the behavioral aspects of care for those conditions. Yet even with well-integrated team-based care for health conditions in place, some patients do not engage or respond as well as clinicians would wish or predict. This troubles patients and clinicians alike and is often chalked up informally to “patient complexity”. Indeed, every clinician has encountered complex patients and reacted with “Oh my gosh”—but not necessarily with a patterned vocabulary for exactly how the patient is complex and what to do about it. Based on work in the Netherlands, patient complexity is defined here as interference with standard care and decision-making by symptom severity or impairments, diagnostic uncertainty, difficulty engaging care, lack of social safety or participation, disorganization of care, and difficult patient-clinician relationships. A blueprint for patient-centered medical home must address patient complexity by promoting the interplay of *usual care for conditions* and individualized attention to *patient-specific* sources of complexity—*across whatever diseases and conditions* the patient may have.

**Keywords:** Complexity, Complexity assessment, Person-centered, Care management

### **Usual Care and Decision-Making for Conditions**

Improving the coordination of care is essential to quality, patient experience, and ultimately cost—as shown by literature supporting the continuing demonstration of Patient Centered Medical Home concepts and principles (American Academy of Family Physicians, et al., 2008; National Committee for Quality Assurance, 2008; Patient Centered Primary Care Collaborative, 2008; Rosenthal, 2008). These concepts call for implementing a more comprehensive, coordinated, team-based and patient-centered approach to usual care and decision-making for important health conditions—including mental health conditions—and coordinating that care in such a way that the patient understands how everything fits together, exercises appropriate engagement in their own care and decision-making, and is confident that “the right hand knows what the left hand is doing”.

Most evidence-based protocols are focused on establishing improved versions of standard care and decision-making for conditions—and now include behavioral health conditions such as depression in primary care, along with the patient self-management and behavioral change aspects of managing health conditions (Institute for Clinical Systems Improvement, 2008a; Institute for Clinical Systems Improvement, 2008b; Unutzer, 2002). The traditionally dominant way of thinking about care is through disease categories, e.g., diabetes, depression, asthma, congestive heart failure and so on—and co-existing combinations of these conditions. The Chronic Care Model (Bodenheimer et al., 2002; Wagner, Austin & Korff, 1996) is geared to the proper care of all these exceedingly important conditions in the population, in part through health system design and the community connections that enable it. Establishing routine, reliable care and teamwork for any commonly occurring combination of biomedical and psychosocial health conditions is indeed very important and can become quite challenging even before considering patient complexity factors that can interfere with usual care and decision-making.

This paper intends to make a compact introduction to a set of concepts for assessing patient complexity along with an overview of a method and tool under development for use in fast-paced primary care settings. The paper does not attempt to do an exhaustive survey of all conceptual work that may be related to patient complexity nor is it the introduction of a finished, highly developed psychometric instrument or scale. Introducing this systematic set of concepts, vocabulary and method for use in primary care clinics now is seen as an important step in the longer-range goal of bringing both the concepts and tools to full maturity.

### **Usual Care and Patient Complexity**

A common clinician observation is that for some patients, usual care isn't working the way it should be (even when enhanced by teamwork or better integrated biomedical and psychosocial care). Clinicians may exclaim, “He's back!” and patients may feel “I'm not getting anywhere”. Being stuck in this way can take place even when a well-integrated team provides evidence-based care for common combinations of biomedical and psychosocial conditions (de Jonge, Huyse, and Stiefel, 2006). When this happens, the factors interfering with care may be hidden from the clinician's view, leaving only a clinician's sense that the patient is “disengaged”, “non-compliant” or “very complex”.

### Unnamed Patient Complexity and its signs

Clinicians commonly sense or observe factors in the lives of individual patients and families that interfere with usual or standard care for their conditions and may respond with “Oh my gosh—very complex”, but not necessarily with a clear idea of exactly *how* the patient is complex or *what to do* about it. Addressing the patient’s context in a manageable way (level of social support, shared language or culture with providers, level of insurance, transportation to visits) or the organization of care (sees multiple physicians working episodically or has most visits in an ER or in different care systems) is a continuing challenge to providing quality care as well as a financial challenge for the American healthcare system and the surrounding family and community resources. When reflecting on feelings aroused by trying to meet the needs of complex patients a physician remarked:

“Complexity is what I feel when I don’t have an algorithm for what’s in front of me. And why don’t I have an algorithm for complex patients? Because our algorithms are for diseases, not persons.”

This quote illustrates that usual care and decision-making (and evidence-based care) is typically geared to *conditions*, not *persons*. Person-specific factors that interfere with usual care are often referred to informally by the shorthand phrase “patient complexity”, and while the specific factors often remain hidden in the background, unmanaged complexity may be accompanied by familiar outward “signs”:

- Many doctors, diagnoses, and visits—especially if unfocused or redundant
- Many and/or redundant medications, services, diagnostic tests or failed services
- Unplanned clinic and ER visits; number and length of hospital admissions
- Patient involvement in multiple helping systems such as clinics, public health services, and social services
- Difficult patient/clinician relationships
- A large gap between patient’s and clinician’s view on how severe the symptoms are—or are expected to be

These may be *signs* of unmanaged patient complexity, but these do not serve as a *definition* of complexity or provide a systematic way to assess it before these signs appear. This can leave clinicians in the uncomfortable position of wanting to do something but not being quite sure *what*. This makes them vulnerable to what we call “wishful thinking” that can take place when not being sure what else to do—such as ordering another test or another scan, finding another consultant or specialist, trying a different medication or procedure, just seeing the patient and doing the same thing over again, or looking for ways to disengage from that patient. This pattern is captured by the maxim “When the situation calls for you to do something you *can’t* do, you do something you *can* do—if you do anything at all.” (Ossorio, 2006)

*Dissatisfaction associated with unnamed and unmanaged patient complexity.* Every physician, patient, payer, care system, and medical educator has struggled with patient complexity. Different things matter to these different stakeholders but patient complexity is quite important to them all and is associated with characteristic dissatisfaction. The contents of Table 1 have been gathered from author conversations with these stakeholders in the context of understanding their concerns about “complex patients” and developing the complexity assessment method that is the subject of this paper.

**Table 1. Dissatisfaction associated with unnamed and unmanaged patient complexity**

Patient dissatisfaction	<ul style="list-style-type: none"> <li>• Patients are often confused by their own illnesses and complicating life factors and have a hard time explaining their own complex situation to family, friends, or even themselves. Not only is this confusing and demoralizing, it makes it more difficult to select and prioritize constructive self-management strategies.</li> <li>• Patients and families are often confused by different, partial, or conflicting explanations from their own doctors, may pick up and personalize provider frustration, and may in the end feel like a failure that no one wants to see: “I’m difficult—no one wants to see me anymore.”</li> </ul>
Clinician dissatisfaction	<ul style="list-style-type: none"> <li>• Standard care may not work so well—“this care should be working better” but leaves the clinician unclear about why or what to do differently.</li> <li>• Complexity strains your ability to do it all yourself and makes limitations in team function obvious</li> <li>• Complexity tempts one to discount the patient as “difficult” or look for scapegoats, and wastes time and emotional energy when not dealt with up front.</li> </ul>
Medical educator dissatisfaction	<ul style="list-style-type: none"> <li>• Students and residents are often confused or discouraged in the face of complex patients and because they don’t have a shared vocabulary for it, and may begin to believe that identifying sources of complexity is outside the scope of medical practice.</li> <li>• Students, residents and preceptors need a more patterned response to patient complexity than “Oh my gosh!” They need a vocabulary for just <i>how</i> the patient is complex—and <i>what to do</i> about it—as a normal part of their work.</li> </ul>
Payer and care system dissatisfaction	<ul style="list-style-type: none"> <li>• A small number of complex patients use a large share of available resources—which may affect affordability of health care and premiums—and places a strain on both the mission and bottom line of the organization.</li> <li>• Patients may complain when the system is unable to meet them at their true level of complexity—which affects patient experience, what they say about their health plan or care system, and potentially how pleased care systems or health plans are with their own services.</li> <li>• Disease-specific care management methods may go only so far with complex patients because the issue isn’t so much the disease but what is interfering with usual care for the diseases. This highlights the limitations of disease-oriented care management benefits or delivery design and the need for complexity-related aspects to care management, along with suitable community linkages</li> </ul>

*Toward a Standard Definition and Vocabulary for Patient Complexity.* The need exists for a more standard definition and vocabulary for the concept of “patient complexity” that allows clinicians to do more than say “Oh my gosh.” and instead incorporate complexity-linked interventions into the care plans already geared to diseases and conditions. Here is one definition of patient complexity:

“...[A complex patient] is one for whom clinical decision-making and required care processes are not routine or standard. For complex patients, many recommendations from evidence-based medicine are unlikely to apply in a straightforward manner because of “exceptions” such as: multiple interacting chronic conditions, other co-morbid conditions . . .and socioeconomic factors such as homelessness or absence of adequate family caregivers or other support systems.” (Weiss, 2007, p. 375)

A series of papers on “Managing Complexity in Chronic Care” based on this definition appears as a special issue of the Journal of General Internal Medicine (Journal of General Internal Medicine, 2007). A second group of authors from The Netherlands (de Jonge, et al., 2001; Huyse, 1997; Huyse, et. al, 1999; Huyse et al., 2000; Stiefel, et al, 1999; Stiefel, et al., 2006) also think of patient complexity as interference with standard care and offer an important distinction with a set of domains and a tool that were first designed for use in inpatient settings.

“It is appealing to distinguish between complexity that arises from characteristics of a patient—such as having multiple interacting diseases that may complicate each other. . . and complexity of care delivery, such as involvement of multiple systems and specialties that require interdisciplinary communication to be effective. . .” (de Jonge, Huyse, and Stiefel, 2006, p. 680)

These authors go on to specify four domains for assessment of complexity that are embedded in their complexity assessment tool called INTERMED: 1) a biological domain that includes information about severity, chronicity and diagnostic uncertainty, 2) a psychological domain that includes information about past coping and psychiatric history, 3) a social domain that includes information about social functioning and residential stability, and 4) a health care domain that includes information about intensity and organization of care and treatment experience.

This foundational Dutch work is the basis for a U.S. outpatient adaptation, presented here, that employs similar but modified concepts and domains. In our work, patient complexity is defined as interference with standard care caused by symptom severity / impairment or diagnostic uncertainty, behavioral unreadiness, lack of social safety or participation, and disorganization of care or difficult clinician-patient relationships. We modified (with permission and encouragement) the Stiefel, et al. (2006) domains for assessment of complexity to specify the following:

1. An *illness* domain that includes diagnostic uncertainty and functional impairment due to symptom severity
2. A *readiness* domain that includes distress, distraction, and readiness to engage treatment
3. A *social* domain that includes participation in the social network and home safety and stability
4. A *health system* domain that includes organization of care and patient-clinician relationships
5. A *resources for care* domain that includes the degree of shared language with providers and the adequacy and consistency of insurance for care

These domains, each with two areas of inquiry and definitions of increasing levels of complexity, are illustrated in Figure 1 as the current draft of the Minnesota Complexity Assessment Method, an outpatient adaptation of the original INTERMED domains and questions (Stiefel et al., 2006).

Figure 1. Minnesota Complexity Assessment Method: Maay 2009 version

**Minnesota Complexity Assessment Method**

Patient:		Age / gender:		Problem:		
Domain	Current state of affairs	Complexity level			Instructions:	
<b>Illness</b> Biomedical, mental health, and chemical dependency symptoms & diagnoses	<b>Symptom severity / functional impairment</b> 0=No symptoms—or reversible w/out intense efforts 1=Mild noticeable sx—don't interfere w function 2=Mod to severe symptoms that interfere w function 3=Severe symptoms impairing all daily functions	0	1	2	3	<p><i>As you gather information and listen to the patient,</i></p> <ul style="list-style-type: none"> <li>• Scan for sources of complexity (interference with usual care) on the left.</li> <li>• Ask questions that help you understand what you don't know.</li> <li>• Circle a level that reflects your understanding of complexity in each area.</li> <li>• Outline a plan of action that takes into account the observed pattern of complexity</li> </ul>
	<b>Diagnostic challenge</b> 0=Diagnosis(s) clear 1=Narrow range of alternative diagnoses 2=Multiple possibilities—clear dx expected later 3=Multiple possibilities—no clear dx expected	0	1	2	3	
<b>Readiness to engage</b>	<b>Distress, distraction, preoccupation w sx.</b> 0=None 1=Mild, e.g. tense, distractible, preoccupied 2=Moderate, e.g. anxiety, mood, confusion 3=Severe w behavioral disturbances, e.g., harm	0	1	2	3	
	<b>Readiness for treatment and change</b> 0= Ready & interested in tx; active cooperation 1=Unsure/ambivalent but willing to cooperate 2=Major disconnect with proposed tx; passivity 3=Major disconnect; defiant/won't negotiate	0	1	2	3	
<b>Social</b>	<b>Current home/residential safety, stability</b> 0=Safe, supportive, stable 1=Safe, stable, but with dysfunction 2=Safety/stability questionable—evaluate/assist 3=Unsafe/unstable—immediate change required	0	1	2	3	
	<b>Participation in social network</b> 0=Good participation with family, work, friends 1=Restricted participation in 1 of those domains 2=Restricted participation in 2 of those domains 3=Restricted participation in 3 of those domains	0	1	2	3	
<b>Health system</b>	<b>Current organization of care</b> 0=One active main provider (medical or MH) 1=More than or less than 1 active provider(s) 2=Multiple medical / MH providers or services 3=Plus major involv. with other service systems	0	1	2	3	
	<b>Patient-clinician (or team) relationships</b> 0=All appear intact and cooperative 1=Most intact; at least 1 distrustful or remote 2=Several distrustful or remote; at least 1 intact 3=Distrust evident in all pt/clinician relationships	0	1	2	3	
<b>Resources for care</b>	<b>Shared language with providers</b> 0=Shared fluency in language with provider 1=Some shared language / culture with provider 2=No shared language; professional translator avail. 3=No shared language; family or no translator	0	1	2	3	
	<b>Adequacy / consistency of insurance for care</b> 0=Adequately insured, can pay for meds, copays 1=Under-insured with modest other resources 2=Under-or intermittently-insured 3=Uninsured, no other financ. resources for care	0	1	2	3	

**Plan of action:**  
General goals:  
(For both complexity and diagnosis)

Self-check: Do I need someone in this case with me—and who?

Team / roles required:  
(Who does what—how it adds up)

Patient / family role (as part of the team):

What clinician / team will do today:  
(To act on both complexity & diagnosis)

No complexity—only routine care needed  
**No evidence of need to act** (beyond routine care)

Mildly complex—basic care planning needed  
**Watch / prevent—explore interacting issues**

Moderately complex—multifaceted plan needed  
**Form a well-integrated plan—set in motion**

Very complex—intensive care & planning needed  
**Consider immediate, intensive, integrated action**

With all your ratings in view, decide what level and kind of action is needed in what areas—and incorporate that into your action plan.

University of Minnesota Department of Family Medicine & Community Health

Each item in Figure 1 represents a separate source of potential complexity, which if high, flags an area to potentially address as an interference with standard care. Although in this draft the item anchors have numbers from 0-3, these are intended only to indicate increasing complexity and are not at this stage of development to be summed as if a scale with a total score. The INTERMED (Stiefel et al., 2006) employs colors from green to red to signify level of complexity, but the Figure 1 illustration has used numbers instead merely to make the form easier to reproduce on paper.

After circling the appropriate level of complexity for items in the five domains, the clinician or team looks at the pattern of high complexity and is reminded at the bottom what level of complexity-linked action is needed (but not the specific actions).

In the care-planning box at the right, the clinician or team begins to formulate the plan, taking the complexity-related factors into account. Simple reminders appear here such as “who do I need with me in this case” and “what are the team roles, including the patient or family”. The reason to include this box is to lead the clinician or team all the way from screening for the presence of complexity to action about it.

### **Assessment for action, not merely description**

Each of the domains (and the two screening areas within) represent possible sources of interference with usual care for whatever conditions the patient and physician are trying to treat. The goal is to go beyond mere description of this interference right to decision-making about it—especially what to do today, what to start in motion for follow-up and what doesn't need to be done at all. The point of complexity assessment is to facilitate action-based communication that describes an individual for action or service, focuses on caregiver consensus on observations and data, and integrates different kinds of information across different clinicians. In other words, complexity assessment organizes observations into what you are going to do about it (Lyons, 2006). The real products of complexity assessment are complexity-related care plans, not numbers on a scale or in a chart. Hence the constant reminder is to use a complexity method or checklist as a booster for action planning, not as an end in itself or as a measuring instrument or form of “lab test”. A related lesson is to avoid any temptation to make the checklist longer or more sophisticated than needed. Our aim is to help care teams quickly reach consensus on the top areas of complexity that need to be addressed. Each question represents a different area of complexity, is clinically meaningful, and translates into level of action needed and ultimately specific action steps.

In the work of de Jonge, Huyse, and Stiefel, and our own adaptation of that work leading to the creation of the Minnesota Complexity Assessment Method (Figure 1), a checklist is employed so that clinicians can quickly identify factors that are likely to interfere with usual care across whatever diseases and conditions the patient may have and then move directly to action. In these approaches, *assessment for diagnosis* (to identify diseases, conditions and appropriate options for usual care and decision-making) is combined with *assessment of complexity* (to identify person-specific factors interfering with usual care for those conditions). The goal is to combine these approaches in a way that reduces the number of patients whose care plans get “stuck”—and who

may come to be regarded by their providers as disengaged or noncompliant. One physician who began using the complexity assessment vocabulary with his own panel remarked, “Before, I felt like my complex patients weren’t listening to me or following the plan and I didn’t know why. But now I know the ‘why’”.

Note that according to these definitions and domains, patient complexity is not merely “how I feel about this patient”; “how time-consuming, frustrating, or stressful I expect care for this person to become”; or merely the presence of co-morbid chronic illnesses or mental health conditions. These are important factors to be sure, but patient complexity is not defined merely as shorthand for a provider’s gut reaction. Instead, patient complexity is defined as *interference with usual care and decision-making for conditions*, which is an entirely different thing.

The adaptation used as the illustration in Figure 1 was developed by the authors with periodic feedback and suggestions from groups of University of Minnesota affiliated family medicine faculty members and later in smaller tests of language and method done by individual faculty, small care teams, and medical residents. This was done initially using standard case vignettes drawn from the clinics and later with real cases facing care teams at the time. Our purpose was to arrive at an outpatient version acceptable to Minnesota outpatient primary care clinicians and residents—something that had face validity, appeared useful in both clinical and educational contexts, and no longer contained language or concepts that were confusing or raised objections.

Other colleagues then reviewed and reacted to this adaptation through a series of presentations to Minnesota, regional, and national professional audiences and through field-testing with practices participating in a small feasibility testing collaborative facilitated by the Institute for Clinical Systems Improvement (ICSI) in Minnesota. Reactions to these presentations and feasibility tests helped us to further articulate the concepts and the practical potential of complexity assessment in ways that clinicians, payers, care systems, health plans and researchers could relate to and value. Further validity-oriented research on the method is currently underway. Figure 1 is presented as an illustration of the concepts and the model of complexity assessment not as a fully tested reliable and valid assessment instrument or tool.

### **Care of Conditions and Complexity**

Combining assessment for diagnosis with assessment for complexity may lead to priority areas to address that are neither "medical" or "mental health" in the usual sense, and instead are often social or community in nature—without new formal diagnoses involved. Moreover, complexity assessment is intended to lead directly and immediately to care team action, not just sit in a record as a number. That is, if little or no complexity is identified, then only routine care is needed. As complexity factors increase, a greater level of care team action becomes appropriate. Table 2 illustrates this progression for hypothetical diabetes patients described at various levels of complexity. Note that each identified area of complexity points to actions that can be taken for that specific source of complexity.

**Table 2: From level of complexity to level of action needed—examples**

Level of complexity	Level of action needed	Examples	
		scenarios	complexity-linked actions
<b>None (0):</b> No complexity—with only routine care needed	No evidence of need to act beyond routine care	Diabetes care going well with a patient who understands the condition and is doing her part in good partnership <i>with</i> her family and her providers. (no complexity)	Just continue usual care and decision-making
<b>Mild (1):</b> Mildly complex—with potential interference with usual care and decision-making	Watch / prevent—explore interacting issues that may interfere with usual care and decision-making	Diabetes control generally going well but with setbacks at times of personal stress and preoccupation while caring for elderly relative. (complexity in social domain)	Usual care plus help patient find family caregiver support and reinforce the legitimacy of her own self-care
<b>Moderate (2):</b> Moderately complex—with likelihood of interference with usual care	Form a well-integrated plan—that addresses factors that are interfering with usual care—and set it in motion.	Consistently inadequate glycemic control while “in denial” about the disease, doctor-shopping and distrustful of providers (complexity in social and organization of care domains)	Build consistent primary care provider relationship and gently raise awareness in a non-coercive way about diabetes via consistent visits for this or while coming to the clinic for other reasons.
<b>Very (3):</b> Very complex—with likelihood of very strong interference with usual care	Immediate, intensive, and integrated action may be needed to address one or more sources of complexity, aimed at allowing the prescribed care for conditions a chance to work.	Wild swings in glycemic control, with poor self care in context of intermittent insurance and a chaotic, sometimes dangerous family situation. (complexity in readiness, social, and insurance domains)	Engage patient with non-threatening domestic violence coaching while gradually helping her value her own mastery of diabetes; help her look for public health insurance for which she can qualify.

Other observations regarding starting points for complexity-linked interventions:

- Some complexity-linked actions have better starter potential to unblock or improve the situation than others. For example, for one person with chronic headaches and “stress”, establishing basic rapport with the physician and behavioral health provider while reinforcing the connections the patient is making between physical symptoms and “stress” came before trying to address the fact of a dangerous neighborhood or stressful marriage.
- Not all complex patients have significant mental health diagnoses and not all sources of complexity are mental-health related. For example, a patient who was clearly sad and withdrawn in the context of social isolation and dislocation as an immigrant, didn’t really qualify for a psychiatric diagnosis and the starting point was beginning to interact with neighbors and a consistent primary care physician.
- Many factors and corresponding actions are social system or care delivery system in nature, rather than being condition-focused. For example, a person with “frozen shoulder” who distrusted doctors and was socially isolated had rejected all usual care for the shoulder and the only avenue open was to build a primary care provider relationship, reinforce the relationship with an ongoing interpreter, and help the patient get out and

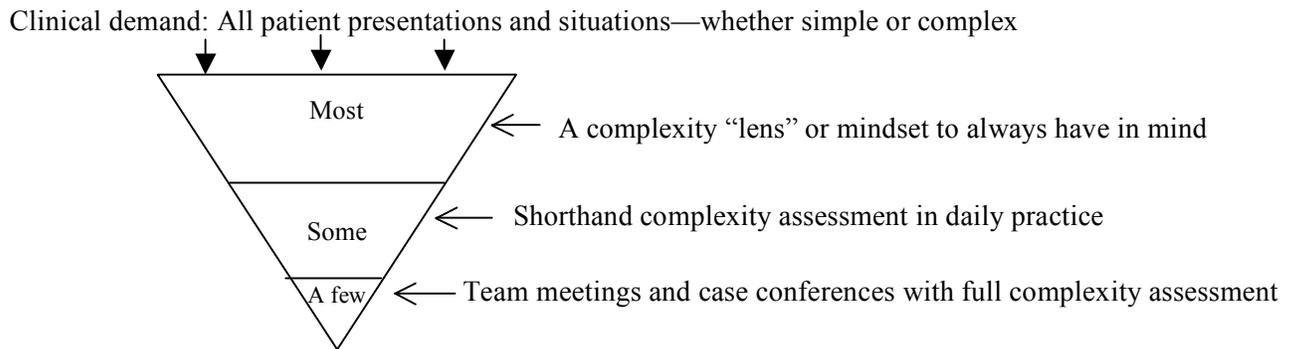
reconnect with neighbors. When that was accomplished, most of the physical complaints greatly diminished, even without the customary musculoskeletal medical interventions.

- Creating stable patient-clinician relationships and communication within the care system may be a starting point for many complex patients and set the stage for introducing other interventions later. For example, a starting point for one very distressed person with multiple pain and other physical symptoms was to coordinate the care among multiple non-communicating providers—and quickly establishing a principal primary care physician linked to a behavioral health clinician on the team.

### Levels of application—from constant mindset to full assessment.

Given the fast paced health care system in which clinicians work, an initial reaction to this method of assessing complexity may be: “This will take too much time!” But this reaction softens when all three levels of application are seen as available options: a constant mindset, shorthand application, and full assessment. These represent levels of formality in the practice routines for assessing complexity and are illustrated in Figure 2.

Figure 2: Complexity Assessment: From mindset to full and formal application



*Application level 1: A mental model to always have in mind.* Complexity as a factor in care is a lens to help clinicians more quickly discern patterns in the exam room—and hence more quickly formulate actions, especially when standard care does not seem to be working as expected. A vocabulary and receptivity for detecting emerging complexity is helpful to have in mind *all* the time.

*Application level 2: Shorthand application in daily practice.* While most clinical situations are straightforward, sometimes it becomes clear that something, perhaps unseen, is interfering with usual care and decision-making. As it dawns on clinicians that the case may not be as simple as it initially appeared, a shorthand application of complexity assessment (or screening) can help quickly focus on what makes the situation complex and where to investigate further. For example, the authors have developed a small laminated “pocket card” with a simple listing of the complexity domains and questions along with the corresponding action areas. This serves as a very portable reminder of areas of inquiry and can help the clinician do a preliminary survey that may point to the need for a fuller assessment of complexity such as shown in Figure 1.

*Application level 3: Full assessment-- for patients known or thought to be complex.* The checklist outlined in Table 2 is designed primarily for use with teams, in care conferences, and as a tool for collaborative assessment where already-known, tough, time-consuming, difficult,

taxing, risky, puzzling, “overserved and underserved”, or “stuck” cases are taken up. In this case the questions can serve as a place to collate the observations of multiple team members to reach a consensus view on areas of complexity to be addressed in the plan along with care for whatever conditions the patient may have. Early demonstrations in care teams suggests that it can help structure the conversation and more quickly lead to decisions about areas for priority action. It may also potentially be useful to care managers who review panels of patients for progress and whether care plans need to be revisited—whether care management is focused on specific conditions such as diabetes or depression, or more general care coordination such as called for in the patient-centered medical home.

### **Care Systems that Respond to Complexity as well as Diagnosis**

Whenever clinicians care for patients, they will face patient complexity as defined here. Traditional disease-focused interventions alone, even when made more comprehensive and coordinated through team-based care that integrates medical and mental health care, do not automatically address patient complexity—although such team based care takes things further than either the biomedical or psychosocial clinicians could do alone. Hence well coordinated and evidence-based care such as promoted in the medical home literature will need a patient-centered complexity-related vocabulary and repertoire of interventions to protect the investment in usual care and decision-making for whatever conditions with which patients present. Much complexity-related care planning takes place outside customary disease-oriented assessment and even outside the clinic itself.

Level of patient complexity is potentially even more relevant than diagnosis to the kind of team structure, care management function, and behavioral health or community resource involvement and extended teamwork, and this is especially important for those with significant psychosocial burdens such as are often encountered in patients from underserved or low-income populations who may suffer from health disparities (Beal et al., 2007; Committee on Quality of Health Care in America, 2001; Mauksch et al., 2003). A standard vocabulary and practical method for assessing patient complexity is arguably a core competency for the rapid practice routines of primary care and the patient-centered medical home. This represents a shift in thinking and daily routine that will require further development of complexity assessment concepts and tools along with routine clinician and staff training in their use. Moreover, complexity assessment concepts and methods may help drive change, or become a “disruptive innovation” aimed at upsetting the status quo (Christensen, Bohmer & Kenagy, 2000) and help promote transformation of the kinds called for in the patient-centered medical home:

1. Complexity assessment points out limits to disease-oriented thinking for practice re-design and care management. It goes beyond the familiar co-occurring disease concept of patient complexity to examine person-specific factors that interfere with usual care and decision-making for the patient’s conditions. Essential to the concept of primary care redesign or “patient-centered medical home” (Rosenthal, 2008; Mauer, 2008) is planning care for persons, in all their complexity, not only for diseases or combinations of diseases.
2. Complexity assessment is truly a *person-centered* assessment—not a disease-centered assessment. Some work (i.e., from the Netherlands and Minnesota) supplies a simple practice routine that leads to patient-centered action that corresponds to patient-centered values. The usual patient and provider experience of patient complexity is not positive, and clinics must

have the capacity to deal with patient complexity across diseases—and make it also a positive experience.

3. The Minnesota Complexity Assessment Method collapses the customary separation of biological and psychological—and presumes integration. These complexity domains do not divide into physical and psychological but instead presume integration as biopsychosocial. Patient complexity can interfere with the care of any condition and reminds us that it is possible to have successful usual care and decision-making for a mental health condition as well as a biomedical condition. Hence having a mental health condition in the mix does not automatically make the patient complex. It became apparent in early tests of these concepts in Minnesota that family medicine teams did not want to debate, for example, whether depression was a psychological or physical condition and urged us not to feature a mind-body split in the complexity assessment concepts or tool.
4. Complexity assessment forces us to get beyond solo acts to ask: “Who do I need with me in the care of this patient?” Complexity assessment comes with the reminder, “Most *difficult* patients started out merely as *complex*”. This care management motto (Patterson et al, 2002; Peek & Heinrich, 1995) reminds clinicians and care systems that they can create difficult patients just by underestimating how complex they are. Person-centered assessment of complexity may help clinicians prevent frustration with care and relationships while protecting everyone’s investment in evidence-based usual care and decision-making.
5. Complexity assessment forces us to look beyond the clinic or medical interventions to practical linkages to social and community resources and “we can’t do it all just in clinics”. A vocabulary with practice routines for assessing patient complexity leads clinicians to look not only for clinical partners, but community partners who may well have more leverage on achieving health goals than individual doctors or teams acting alone in only part of the patient’s overall picture. These linkages are also envisioned in the principles of the patient-centered medical home.

### **Conclusion**

Team-based care for combinations of medical and mental health *conditions* can be augmented with a complementary form of assessment and action for patient *complexity*— defined as interference with the usual care and decision-making for those conditions. A rationale, vocabulary, and approach for identifying just how a patient is complex and what to do about it is presented here for use in fast-paced primary care settings. The promise of this approach is to reduce patient and physician frustration when usual care plans don’t yield the predicted results—even those care plans enhanced by well-integrated clinical teams working together and aspiring to the goals and principles of patient-centered medical home.

The emerging requirements of patient centered medical home are calling for the ability to act on patient-specific sources of complexity that may interfere with evidence-based care and decision-making for conditions—and then to incorporate this into practice based care management. Medical home concepts also remind us of the limits of disease-oriented thinking by itself, including the fact that patient complexity is not just the presence of mental health conditions in the mix.

At this point in its development, the Minnesota Complexity Assessment Method provides an organized set of field-tested concepts, distinctions, and language patterns intended to address widely held concerns about patient complexity that affect quality of care, patient experience and affordability. It is presently a decision-aid, checklist, questionnaire, or quality improvement tool to help clinicians and care teams gather information they may not otherwise gather, together focus their energy, and jointly make prioritized care management decisions regarding patient complexity that they may not otherwise make—particularly when care is not going according to plan. Future horizons include the incorporation of research results on its potential use as a scale or quantitative tool, including item analyses, validity and reliability, and population-level applications.

**Acknowledgements:**

We are very grateful to Minnesota family medicine residency faculties, other practices and physicians around Minnesota, local and national presentation audiences, and the Institute for Clinical Systems Improvement for their interest and help in developing these concepts and method.

**References:**

- American Academy of Family Physicians, American Academy of Pediatrics, & American College of Physicians, *American Osteopathic Association. Joint Principles for Patient-Centered Medical Home*. Retrieved on March 16, 2009 from [www.medicalhomeinfo.org/Joint%20Statement.pdf](http://www.medicalhomeinfo.org/Joint%20Statement.pdf).
- Beal, A., Doty, M., Hernandez, S., Shea, K., & Davis, K. (2007). *Closing the divide: How medical homes promote equity in health care: Results from the Commonwealth Fund 2006 Health Care Quality Survey*. Retrieved on March 16, 2009 from ([www.commonwealthfund.org/publications/publications\\_show.htm?doc\\_id=506814](http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=506814)).
- Bodenheimer, T., Wagner, E., & Grumbach, K. (2002). Improving primary care for patients with chronic illness. *Journal of the American Medical Association*, 288, 1775-1779.
- Christensen, C., Bohmer, R., & Kenagy, J. (2000). Will disruptive innovations cure healthcare? *Harvard Business Review*, 78(5), 102-112.
- Committee on Quality of Health Care in America, & Institute of Medicine. (2001). *Crossing the quality chasm: a new health care system for the 21st century*. Washington, DC: National Academy Press.
- de Jonge, P., Huyse, F., Stiefel, F., Slaets, J.P., & Gans, R.O. (2001). INTERMED—A clinical instrument for biopsychosocial assessment. *Psychosomatics*, 42, 106-109.
- de Jonge, P., Huyse, F., & Stiefel, F. (2006). Case and care complexity in the medically ill. *Medical Clinics of North America*, 90(4), 679-692.
- Huyse, F.J. (1997). From consultation to complexity of care prediction and health service needs assessment (editorial). *Journal of Psychosomatic Research*, 43, 233-240.
- Huyse, F.J., Lyons, J.S., Stiefel, F.C., Slaets, J.P., de Jonge, P., Fink, P., Gans, R.O., Guex, P., Herzog, T., Lobo, A., Smith, G.C., & van Schijndel, R.S. (1999). INTERMED: a method to assess health service needs: I. Development and reliability. *General Hospital Psychiatry*, 21, 39-48.
- Huyse, F.J., Lyons, J.S., Stiefel, F., Slaets, J., de Jonge, P., & Latour, C. (2000). Operationalizing the biopsychosocial model: The INTERMED. *Psychosomatics*, 42, 5-13.
- Institute for Clinical Systems Improvement. (2008a). Depression, major, in adults in primary care (guideline) and Low back pain, adult (guideline). Retrieved March 16, 2009 from [www.icsi.org/guidelines\\_and\\_more](http://www.icsi.org/guidelines_and_more).
- Institute for Clinical Systems Improvement. (2008b). DIAMOND Initiative: Stepped care for depression in primary care. Retrieved March 16, 2009 from [www.icsi.org/health\\_care\\_redesign\\_/diamond\\_35953](http://www.icsi.org/health_care_redesign_/diamond_35953).
- Journal of General Internal Medicine. (2007). The V.A. State-of-the-Art Conference: Managing Complexity in Chronic Care. Special issue of *Journal of General Internal Medicine*, 22 (Suppl 3).
- Lyons J. The complexity of communication in an environment with multiple disciplines and professionals: Communimetrics and decision-support. Integrated Care for the Complex Medically Ill. *Medical Clinics of North America*, 90(4), 693-702.

- Mauer B. (2008, draft). *Behavioral health /primary care integration and the person-centered healthcare home*. Washington, DC: National Council for Community Behavioral Healthcare.
- Mauksch, L.B., Katon, W.J., Russo, J., Tucker, S.M., Walker, E., & Cameron, J. (2003). The content of a low-income, uninsured primary care population: Including the patient agenda. *Journal of the American Board of Family Medicine*, 16, 278-289.
- National Committee for Quality Assurance. (2008). *Standards and guidelines for physician practice connections®—Patient-Centered Medical Home (PPC-PCMH CMS Version)*. Washington, D.C.: National Committee for Quality Assurance (NCQA).
- Ossorio PG. (2006). *The behavior of persons. The collected works of Peter G. Ossorio*, Volume V. Ann Arbor, MI: Descriptive Psychology Press.
- Patient Centered Primary Care Collaborative. (2008). *Patient-centered medical home: Building evidence and momentum. A Compilation of PCMH pilot and demonstration projects*. Patient Centered Primary Care Collaborative, Washington D.C. Retrieved March 16, 2009, from [http://www.pcpcc.net/content/pcpcc\\_pilot\\_report.pdf](http://www.pcpcc.net/content/pcpcc_pilot_report.pdf).
- Patterson, J., Peek, C.J., Bischoff R., Heinrich, R., & Scherger, J. (2002). *Mental health professionals in medical settings: A primer*. New York: W.W. Norton & Company.
- Peek, C., Heinrich, R. (1995). Building a collaborative healthcare organization: From idea to invention to innovation. *Family Systems Medicine*, 13, 327-342.
- Rosenthal, T. (2008). The Medical Home: Growing evidence to support a new approach to primary care. *Journal of the American Board of Family Medicine*, 21, 427– 440.
- Stiefel, F.C., de Jonge, P., Huyse, F.J., Guex, P., Slaets, J.P., Lyons, J.S., Spagnoli, J., & Vannotti, M. (1999). INTERMED: A method to assess health service needs: II. Results on its validity and clinical use. *General Hospital Psychiatry*, 21, 49–56.
- Stiefel, F., Huyse, F., Wollner, W., Slaets, J., Lyons, J., Latour, C., van der Wal, N., & de Jonge, P. (2006). Operationalizing integrated care on a clinical level: The INTERMED Project. Integrated Care for the Complex Medically Ill. *Medical Clinics of North America*, 90(4), 713-758.
- Unutzer, J., Katon, W.J., Callahan, C.M., Williams, J.W., Hunkeler, E., Harpole, L., Hoffing, M., Della Penna, R.D., Hitchcock-Noel, P., Lin, E.H.B., Areán, P.A., Hegel, M., Tang, L., Belin, T., Oishi, S., Langston, C., & The IMPACT Investigators. (2002). Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *Journal of the American Medical Association*, 288, 2836-2845.
- Wagner, E., Austin, T., & Von Korff, M. (1996). Organizing care for patients with chronic illness. *Milbank Quarterly*, 74, 511-542.
- Weiss, K. (2007). Managing complexity in chronic care: An overview of the VA State-of-the-Art Conference. *Journal of General Internal Medicine*, 22 (Suppl 3), 374-378.