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Shared Medical Appointments: Implementing Diabetes SMAs to Improve Care for High Risk Patients and Maximize Provider Expertise

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1. Introduction

Worldwide, the burden of diabetes continues to increase to staggering numbers. A recent report from the International Diabetes Foundation estimated that 366 million people have this chronic condition. Additionally, despite advances in diabetes treatment and prevention over the past 30 years, this number continues to rise. This increase applies to both the developing world and the developed world. For example, in 2010, the US Center for Disease Control fact sheet stated 26 million patients in the United States now have diabetes and 79 million have pre-diabetes. Much of the increase is related to the rising rates of obesity. As the numbers of patients with diabetes increases, so does their associated health care expenditures. Not surprisingly, the challenge of diabetes management is greater in those with mental health conditions, (Frayne et al., 2005) the elderly, and minority populations (www.ahrq.gov, 2011). Overall, diabetes and its complications and the often ineffective approaches to delivery of care lead to demonstrable quality gaps and increased costs. As a result, treatment strategies designed to improve outcomes are needed.

Clearly, healthcare systems have many reasons to systematically address diabetes care delivery specifically and chronic disease management in general. A significant barrier for many healthcare systems is their acute-care orientation; they are not designed for chronic illness care. This is particularly true for the United States. Re-orientation toward chronic disease management would necessitate systematic strategies to address high risk patients and prevention of complications. Specifically, the complexities of patients with chronic conditions in the context of changing demands in healthcare systems, requires the development of new models of care delivery which involve collaboration among professionals from different professional disciplines.

One recognized obstacle to the development and implementation of successful multiprofessional models to chronic care management is the traditional silo approach whereby disciplines act in isolation. Accumulating evidence related to chronic care management supports the importance of integrated, multidisciplinary approaches: team-based interventions in chronic disease are associated with better patient outcomes. There is

evidence to support greater involvement of professions other than physicians. For example, the involvement of nurses in assessment, treatment, self-management support and follow-up has been linked to improved professional adherence to guidelines, patient satisfaction, clinical health status, and use of health services (Bodenheimer, 2003; Bodenheimer, Wagner & Grumbach, 2002; Kasper et al., 2002; McAlister, Lawson & Teo, 2001; Singh, 2005).

This chapter focuses on one innovation in care delivery designed to help address care gaps for patients with chronic conditions: shared medical appointments (SMAs). We begin by defining SMAs, describing their conceptual roots, and reviewing the literature on their effectiveness. We then describe our experience with SMAs for diabetes – how they were implemented, adapted, and sustained over a 6-year period at our site in the Cleveland Veterans Health Administration. In an effort to help others implement SMAs for diabetes or other chronic diseases, we provide practical details and present a conceptual framework, Consolidated Framework for Implementation Research (CFIR), to assist others in deciding how transferable this model of care is to other settings.

2. Definition, conceptual roots and current literature on SMAs

2.1 SMA definition

Originally conceptualized by E. Noffsinger in the United States, this type of medical appointment occurs with a group of patients who often have a common chronic condition. The term SMA is used interchangeably with group visit, cluster visit and chronic care clinic in the literature and practice. Multiple patients have an appointment at the same time (typically about 90 minutes in length) with a team of healthcare professionals representing differing professions. During an SMA, participants receive education, participate in group discussion with other patients, and interact with a multiprofessional healthcare team. An individualized medication management and treatment plan are developed through collaborative interaction between the patient and the healthcare team. In addition to physicians (specialists or generalists) or other primary care providers, e.g., nurse practitioners, other healthcare professions are represented such as health psychology, nutrition, clinical pharmacy, and nursing. The appointment incorporates patient education into a problem solving and patient activating environment. While patients and the professional team discuss core education, it is done in such a way as to foster patient and family participation in their own care management and often provides support for others in the session. Patients also receive individual medication management. Within this definition there is room to vary the type of patient populations targeted for participation (e.g., high blood pressure vs. elevated blood sugars) and the types of health professionals on the team. More details will be described in Section 3 and 4.

2.2 Conceptual Roots of SMAs

The broad frameworks and service delivery models proposed to help address existing challenges in health care delivery for treatment and management of chronic conditions include the Chronic Care Model (CCM) of Wagner et al. and the Innovative Care for Chronic Conditions Model of the WHO, among others (Singh, 2005; Wagner, Austin & Von Kroff, 1996). The best characterized and studied model is the Chronic Care Model (Bodenheimer, 2003; Bodenheimer, et al., 2002; Wagner, 2000). A recent systematic review and meta-analysis demonstrated the effectiveness of this model and its components (Coleman et al., 2009). In this model six major elements: delivery system; clinical

information systems; healthcare organization; self-management; decision support; and community, are viewed from the perspective of their abilities to support productive interactions between a motivated proactive patient and a prepared proactive *health care team*. Column one of Table 1 summarizes the six components of the CCM and provides a brief description of each as initially set up in our local context.

Chronic Care Model Components	Enhanced Dimensions and Practices for SMAs
1. Self-management support: Provide methods and opportunities for patients to be empowered and prepared to manage their health conditions and health care	Tools and information utilized in group format for teaching self-management
	Health topics covered during patient-led discussion to enhance self-management
	Multi-disciplinary team and continuity of team
	Patient-centered group dynamics
	Peer support (helps with problem solving for self-management)
	Reinforced by team members
	Motivational interviewing
2. Decision support: Enhance and promote evidence-based clinical care that recognizes patient preferences	Embedded guidelines into notes
	Standardized electronic note
	Multi-disciplinary team overlap
3. Delivery system design: Promote proactive delivery of clinical care and support of self-management within the system	Debriefing huddle after each session (Continuous Quality Improvement / Evaluation) and continuity of team
	Registry to review and plan
	Multi-disciplinary team with roles and tasks defined and overlapping
	Individual patient (one-on-one) sessions at end
	Cross-training and spread of care practices back to (other) Primary Care Professionals
4. Community Resources & Policies: Identify and mobilize community-based resources to help meet health care management needs of patients	Significant others invited and encouraged to participate
	Peer support group structure with possibilities for linking outside of group
5. Organizational support: Leadership at all levels provides mechanisms to enhance care and Improvements	Personnel time committed for multi-disciplinary team to participate
	Resources and infrastructure (e.g., designated space and staff, and endorse guidelines)
	Continuous Quality Improvement/Evaluation (feedback and goal-setting)
6. Clinical information systems: Organize and utilize data to promote efficient and effective care	Documentation (consistent with evidence-based guidelines)
	Utilize a diabetes registry, other database for identifying patients

Table 1. Application and Enhancement of the Chronic Care Model to SMAs in the VA Health Care System

SMAAs constitute the chronic care model's element of delivery system design and are a form of planned visit. For example, at the heart of SMAAs is the notion of patients interacting and helping each other (e.g., patient-centered group dynamics and peer support). At the same time, we incorporate motivational interviewing expertise to help guide those discussions to further support self-management skill development. This type of appointment allows patients to see differing perspectives in problem solving, and productive interactions with other patients and healthcare professionals at one medical appointment.

2.3 Evidence for SMAAs

SMAAs have been gaining in popularity over the past 10 years, in part based on efficacy similar to or better than usual care (Kirsh et al., 2007; Oandasan, 2004; Weinger 2003; Simpson et al., 2001; Trento et al., 2001; Wagner et al., 2001). Many studies of SMAAs have been on patients in managed care in the US or the Veterans Health Administration, in Europe within National Healthcare systems. Most of these SMAA studies have demonstrated efficacy and effectiveness in diabetes care with improvements in different intermediate outcome (A1c, blood pressure, cholesterol levels) and recommended diabetes process measures (foot examination rates, eye examination rates, etc. (Martin et al., 2007; Sadur et al., 1999; Trento, 2001; Edelman et al., 2010). One study showed improvement in health status of patients with diabetes as measured by the SF-36 (Wagner et al., 2001). Other outcomes shown to have been improved by participation in diabetes SMAAs include patient satisfaction, specialty visits, emergency room visits and patient quality of life. The SMAA approach has been applied successfully to the management of other patient populations with chronic diseases including those with hypertension, heart failure, hepatitis C, dyslipidemia and other conditions such as urology visits, bariatric surgery, rheumatoid arthritis and geriatrics.

3. Implementing SMAAs for patients with diabetes

While SMAAs have been growing in popularity, it isn't always clear how to facilitate them and/or how best to adapt them in different settings. We share our experiences by discussing the implementation process in three phases based on our use of SMAAs with diabetes patients in the VA setting: 1) Preparation Phase, 2) Early Implementation Phase, and 3) Sustaining Phase.

3.1 Preparation Stage: Initial ground work and decisions

Initially, the components of SMAAs include identification of a targeted population, a healthcare team, administrative support, methods to identify patients and track outcomes, and techniques and processes for conducting the visit.

Figure 1 overviews initial issues to be addressed and decisions to be made and how our site developed them. Thus, we highly recommend them as a starting point for making decisions within your local setting. First, a target population needs to be identified.

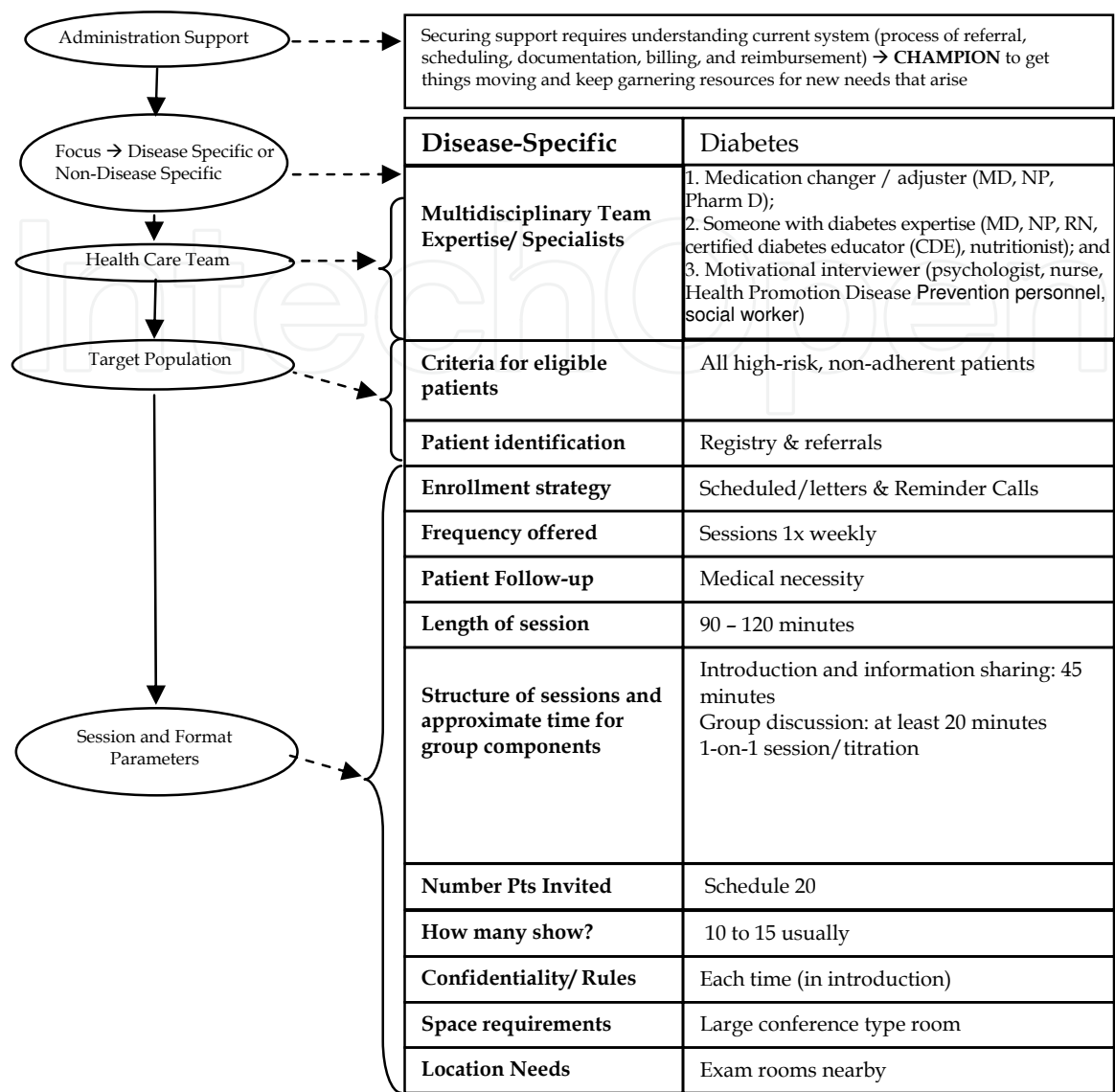


Fig. 1. Developmental Phases and Example of Decisions Made to Help Guide Implementation of SMAs for Patients with Diabetes

3.1.1 Target population

Identification of patients is a key initial decision. SMAs may be used for patients with well controlled conditions to improve access, or targeted to those with poorly controlled conditions, or a mixture of the two. For example, if the goal of the diabetes oriented SMA is to improve control of chronic illness, remember that patients with poorly controlled blood sugar, blood pressure, proteinuria, or lipids have greatest need to improve and derive the greatest benefit from improvements. They also have poor attendance rate, at times as low as 50%. Depending on goals of the SMA, the targeted population needs to have a pool greater than 500 for a once weekly clinic. This will likely ensure 5-12 patients per clinic for weekly sessions. Starting with once or twice a month SMA sessions may be more manageable in a setting depending on number of patients in need. Among the reasons we chose to focus on diabetes were the desire to meet performance measures, the availability of a clinical diabetes

registry (Kern et al., 2008), and interested clinicians. The choice of the target population determines the stakeholders and the members of the team. Of note, in setting up goals for patients, ensure that they are concordant with guidelines in your local setting. For example, the VA/Department of Defense diabetes guidelines provided us with decision support (component of the chronic care model) for our SMA to focus on lowering all patients with A1c levels over 9%. Updated guidelines still utilized during our SMAs are available at www.healthquality.va.gov.

3.1.2 Garnering support

Among the most important early steps are securing buy-in from those staff and administrative sponsors who will be directly involved, rallying stakeholders, and identifying a local champion. It is important to obtain support from all stakeholders -- from administration to patients and their family members because change is always challenging. This is particularly important if change involves a redesign of office practice. We strongly recommend that a physician or other primary care clinician be the champion or the primary champion among a team of champions. A champion of the process is essential to garnering resources for the SMA, both at its inception and in the future. We suggest someone who can leverage support at various levels, and who has a solid understanding of the population and the associated challenges. In our setting, a lead primary care provider is particularly ideal given the fact that SMAs are a change in the format of delivering patient care. We have observed that in our setting, primary provider leaders have been more successful, more quickly, in achieving system redesign regarding direct patient care issues-such as making a case to administration, initiating processes and obtaining current and future resources. Additionally, primary care providers may be in a better position to arrange for outcome data to be made available so that the team can gauge its success. Although our approach flattens the hierarchy with the clinical team, we recognize that the typical bureaucracy may deal more comfortably with a clear hierarchy. Again, it is important to recall that it is the solid core of the team that will keep moving the process forward.

It is also important to remember that the physician or primary care provider does not need to be visible during the entire appointment, does not have to oversee the day-to-day management, or even be the leader of the team once the resources are garnered and team becomes successful in regular SMA visits. The team remains central to the success of the SMAs, but like all changes, needs a liaison with enough status and influence to get support and resources. In our context we are fortunate to have SMAs recognized and prescribed (mandated) as an important management option. Local administration support still is essential and proceeds better if some initial planning and decisions have been made and have been played out to demonstrate feasibility.

Starting with the high-risk patients provided us with the opportunity to obtain initial buy-in from administration and other providers since many recognized that the traditional approaches were not working for our chronic care patients. We found that most of the doubts about starting SMAs came from lack of familiarity and uncertainty about the initial high amount of resources. Locally, we were able to address these by sharing published findings and providing the opportunity for non-team members to observe and participate in a SMA. Once local patients shared their success stories, SMA buy-in was self-perpetuating

and providers learned techniques for collaborating with challenging patients. Non SMA providers participating in a few SMAs also provides an opportunity for them to observe motivational interviewing techniques with challenging patients and reinforces the most evidence based approach to care.

Securing provider and staff support helps with informing patients and family members about the new care option. While we use the registry to identify potential patients and also take referral from primary care providers, we recognize that patients and family members may seek reassurance and encouragement from their primary provider. Patients provide a source of buy-in for other patients and family members. Word then travels back to their primary providers, who then are more likely to refer/encourage other patients to participate.

3.1.3 Team members: Main roles and core expertise for each session

After securing leadership support, it is advantageous to focus on deciding who will be part of the team so that other decisions reflect the team working together. The actual size of the team may vary, ranging from 2 members (1 RN and 1 physician or clinical pharmacist or nurse practitioner) to 5 or 6 members. Optimally we recommend three team members but recognize that the composition of the team can also vary and reflect different options for fulfilling expertise requirements, available clinicians and the disease being targeted. For example, a nutritionist may not be available, but a local certified diabetes educator (CDE) has the necessary knowledge of the interface between diabetes and diet. For our SMAs we found that having two or more medication changers at each session was essential for SMA clinics that had more than 12 patients. Again, we recommend at least three total team members be involved at each session (although it does not always need to be the same three people), with each one primarily fulfilling one of the three main roles. Table 2 provides an overview of the roles. The three main roles are further defined by the core or critical expertise that we have found necessary to have present at each session for successful diabetes SMAs. The roles may vary slightly based on the setting or identified disease. We now describe the essential skill sets, not specific health professionals needed since each role can be covered with several different health professionals.

Moderator: The moderator takes main responsibility for facilitating the group session and there are a number of potential staff members who could fill this role. This may be a health psychologist, social worker, or nurse with motivational interviewing experience/group facilitation experience.

The core expertise needed from the moderator is to elicit group discussion and use Motivational Interviewing skills when needed. This technique creates a patient-centered discussion. The moderator helps guide patient generated questions, discussion of challenges and/or educational topics in the group session. It is important to recognize that even though the flow of the discussion is derived from patients and their issues, the moderator and team help ensure that all patients get basic education on physiologic goals, familiarity with medications used to achieve goals, and complications of their disease. The advantage of this context is that the moderator and team build on the discussions so that the information is pertinent to the patient and permits other patients to discuss and make suggestions about common barriers to achieving chronic care management goals.

Role and Core Expertise	Possible Team Members to Fill the Role	Responsibilities
MODERATOR Motivational Interviewer	Psychologist, Pharmacist, Clinical Nurse, Dietician, Certified Diabetes Educator (CDE)	Facilitate discussion related to various aspects of patients’ chronic disease
		Answer clinical questions that arise during patient discussion
		Give recommendations to providers as to which order patients should be taken back for their individual physical exam if needed
		Provide, or consult mental health service for smoking cessation classes, weight loss counseling, depression, post traumatic stress disorder (PTSD), insomnia, erectile dysfunction
		Provide, or consult nutrition service for carbohydrate counting
		Provide, or consult pharmacy service for pill box counseling, medication reconciliation (especially new consults), prescription renewals/refills
		Obtain vitals, and assist with check-in process, if necessary
PROVIDER Medication Changer	MD/NP/PA, Clinical Nurse, CDE, Pharmacist	Assist patients with completion of symptom questionnaire, if indicated
		Complete individual patient physical exam if needed, assess functional capacity to engage patient in exercise program

Role and Core Expertise	Possible Team Members to Fill the Role	Responsibilities
		Discuss patients’ symptoms, adverse drug reactions, and follow-up on patient response to symptom questionnaire, if needed
		Complete medication reconciliation
		Adjust patient specific pharmacotherapy, if appropriate and as indicated
		Schedule follow-up appointments, as clinically appropriate
		Provide patient option to return to the group for continued discussion or check-out
		Record provider and patient goals for therapy and treatment plan for documentation into the patient’s chart (documentation usually occurs during individual patient visits). Partial or complete progress note documentation of the subjective, objective, assessment and plan (SOAP) for each patient.
		Complete take home instruction sheet
CONTENT EXPERT	MD/NP/PA, Clinical Nurse, CDE, Dietician, Pharmacist, Psychologist,	May call patients out for individual consult (e.g., regarding diet), Can help with documentation
		<i>Note that documentation of the assessment and plan can be an individual effort ~or~ a collaborative effort with the team after the clinic visit.</i>
		Understand medical terminology, or have clinical background experience
		Assist with group facilitation

Table 2. Core roles and suggested distribution of responsibilities

Provider: Medication changers in our SMAs include medical doctors (MDs), nurse practitioners (NPs), registered nurses (RNs) with primary provider support, and pharmacists. These team members interact with patients one on one. Titration of medications is completed, if needed. Ideally, this only takes between 5 and 10 minutes for each patient. Consults are placed as needed with a written treatment plan and list of medications for the patient upon check out. If seen in individual rooms for treatment plan, patients may or may not rejoin the group after their individual session. As needed, the provider seeks input from other team members by asking another member in for a quick consult or requesting and relaying information back to patient.

Diabetes Expert (Or Disease Specific Expert): The expert can be a nurse, pharmacist, physician, or nutritionist. We have found that there are several reoccurring themes for patients with diabetes and their families, particularly surrounding food/nutrition related issues (e.g., carbohydrate counting, food preparation, salt intake issues, budget and food). It is critical that at least one member is an expert on the specifics of management of the identified disease.

3.1.4 Session and Format Parameters

In Figure 2 we have summarized our recommended approach for implementing SMAs, but recognize some parameters will be a function of local contextual factors. For example, offering SMAs for patients with diabetes once a week would be ideal to quickly get as many patients as possible involved, however, that may not be feasible given the clinic space and availability of staff.

The visit itself begins with the group format where introductions and information sharing occurs, followed by more open group discussion which also has an educational component. The group discussion facilitates peer support, one of the keys to success in chronic disease management. Arranging chairs in a circular format creates a sharing environment. It is important for the team members to be seen as equal members in the group with the patients and family members, therefore, the group discussion where all team members are sitting rather than standing is recommended.

It is important to stay focused within the SMA visit on chronic illness only to adhere to specified time frames. Recognize that this gets challenging when the patients are part of one's own primary care panel. If need be, and space is a constraint, medication titration and a patient plan can be done in the presence of the whole group or off to the side of the group discussion. We chose not to do so routinely as glucose pattern management for high risk patient with diabetes is complicated to do in front of many other patients. However if clinic is running late, medication titration is often done within the group on the remaining patients.

The last component of the visit is the clinical component (examination if needed and management) where medication titration is done and other issues related to diabetes care are addressed in a one-on-one format with one of the medication changers. Patients may or may not rejoin the group after the individual session.

TIME FRAME	TASKS	MAIN TEAM MEMBER
PREPARATIONS PRIOR TO SESSION		
1 – 2 weeks before	Send Letters of Invitation (At first schedule 10 patients)	CLERK
2 days before	Make reminder phone calls Print note Highlight lab values Assemble handouts	CASE MANAGER CLERK
PREPARATIONS DAY OF SMA SESSION (example start time of 9am):		
8:30am SET UP ROOM	Ensure enough chairs and placed in a Discussion-type format. Put handouts around with pencils	NURSE
8:45 am PATIENTS START ARRIVING	CHECK-IN: Vitals, Download glucose data, Eye and food screening (triage and grabs), Clinical routing slip	NURSE (Screener)
9:00am GROUP SESSION BEGINS	Welcome and privacy reminder. Introductions: ask everyone to introduce self and have patients share their: name, how long had diabetes, whether or not on insulin.	MODERATOR Patients invited via moderator
9:10- 930am GROUP DISCUSSION	Socratic discussion of issues. Begin process by referring to printed notes and asking patients their values and target values. ABCs of Diabetes discussed via questions to engage patients (no lecturing)	MODERATOR and PATIENTS
9:30am START PULLING OUT PATIENTS	INDIVIDUAL SESSIONS: Begin with patients who have time constraints, have hearing problems, are disengaged, are engaging in disruptive behaviors, or have been to previous sessions	PHYSICIAN/MEDICATION CHANGER (Moderator helps identify patients)

Fig. 2. Shared Medical Appointment Schedule

3.1.5 Other considerations

A table for the group is useful for patients to review their health related information and take notes, but is not critical. In the case of people with diabetes, the ability to incorporate home blood glucose monitor readings may add potency to the intervention by informing pharmacological changes, especially for patients on insulin. If feasible it is worth having patients bring their meters to group for review. If the technology is available, we have found that downloading them is helpful for the patient and the team. If your facility uses point-of-care A1c testing, having that available for the session may also be very helpful in titrating pharmacological changes.

3.2 Early implementation

A number of things need to happen early in implementation and include: identifying and contacting patients and their respective family members (or caregivers), mapping out the process during the group session prior to the session itself and identifying the most appropriate guidelines in directing clinical care delivered in the SMA.

Once the criteria have been established, if available, a registry can be used to identify potential participants. Potential patients should be screened for other issues or conditions that would suggest SMAs might not be appropriate. We apply the following exclusions to participation in our diabetes SMAs: an inability to speak English, a diagnosis of dementia or other cognitive impairment, and any behavioral problem which interferes with group participation and discussion.

The letter of invitation is sent about two weeks prior to the SMA session the patient is invited to attend. A reminder phone call is made one or two days prior to the session. Both the letter of invitation and the reminder phone call clarify that significant others are also invited to attend. We should mention that initially we had the team involved in identifying and contacting potential patients, but once the process was established, these steps were handled by one individual on the team (our nurse practitioner who had access to the registry but this could be handled by others who have clerical positions if trained).

Prior to the SMA session, a review of the patient's chart is conducted. Specifically, data is gathered to assess the need for labs prior to the visit and if the patient has been appropriately triaged to the SMA. For example, patients who need insulin initiation are identified and discussed with the designated RN (whose job is to assist patients with insulin starts) prior to the visit, in order to make this process more efficient during the clinic visit. Then during the SMA session, patients are checked in at the site of the group visit, not at the nursing station. This permits meters to be downloaded; blood pressure to be obtained; and foot screening to be conducted, if needed. The patients are given copies of most recent labs, including values for A1c, Ldl-c and Blood Pressure. Additional educational material is provided on hypoglycemia, stress in diabetes, alert identification as well as goal-setting in diabetes.

Our SMAs begin with ground rules, information and reminders about confidentiality. Subsequent to the confidentiality reminder, one must realize that the session introduction is very important to help set the tone. We begin our sessions with introductions of

everyone present by going around the room and providing a brief introduction of the clinicians and for the patients including how long s/he has had diabetes and whether they are on insulin. This also helps the care team who may not be familiar with all of the patients at the session. We do not at our site invite the same patients back to each group due to logistical challenges and a desire to provide access to all high-risk patients. Introductions can also be altered to help steer the process of information sharing beyond the basic information. For example, if during prep time you recognize that many of the participants need to start insulin, you could ask patients to share their biggest fear of starting insulin or what was their biggest fear, for those already on insulin. Such alterations help get the discussion moving in the direction that you initially want it to go. It is important to remember to be flexible as the issues the patients want to discuss need to surface and be part of the process.

Typically the group discussion begins with asking an open-ended question to encourage patient participation. The moderator and other team members ensure that relevant educational topics are discussed and that goals are established during the discussion. The topics, and the approach to discussing the topics, are designed to evoke better self-management skills reinforcing the self-management support component of the Chronic Care Model to empower and prepare patients to manage their health conditions and health care. Patients receive educational materials that include target goals for the patient along with his/her own value. Patients set self-management goals around improving diabetes care as well as share perceived confidence in achieving this goal over the ensuing weeks until they return. Additional self-management materials are often provided to patients including pedometers, Blood Pressure Monitors and pill organizers for medication.

An important goal is to get the patients to share and problem-solve with and for each other. The facilitator's role is to keep patients engaged with the group activity to the extent that this is possible. After sufficient discussion (i.e., the topics have been shared and discussed in a patient-driven format), medication adjustment and individualized planning begins by taking patients out individually for the one-on-one session. The other patients remain in the group session and the moderator continues to facilitate relevant discussions. Patients are welcome to return after their one-on-one session to continue to participate in discussion. Typically we start one-on-one sessions with patients who have attended several previous SMAs or have time constraints and/or other commitments (e.g., need to get back to work).

We find it is useful to have a debriefing huddle immediately after SMA session. During the debriefing huddle the health care team discusses the individual and group encounter portion of the patient visit. Additional collaboration happens that may lead to further recommendations for follow up care and/or charting in the medical record. Opinions and consensus occurs during these sessions. In addition, this provides an opportunity for assessing the overall process and goals as well of spread of interprofessional expertise. You may find the debriefing component decreases over time, but it is important to continue debriefing if only for a few minutes. This time may provide an opportunity for interprofessional cross-training and professional development as new evidence-based

healthcare practices emerge. This is especially true if trainees of different disciplines are included in this clinical venue. Unintended consequences may arise that may be addressed in the team debriefing session. Further information about how our clinic structure changed with local implementation can be found (Kirsh, Lawrence & Aron, 2008).

3.3 Keys to sustaining SMAs

Sustaining successes for our group has been a result of a continuous quality improvement process, staying alert to unintended consequences and developing supportive tools to track and measure outcomes. Demonstrating value added to clinical care with improved outcomes must be a part of early and ongoing assessment strategies. Improved outcomes may be intermediate outcomes, decreased Emergency Department visits or patient satisfaction with SMAs. It is important to find some measure of improved care to demonstrate value within local systems of care.

3.3.1 Developing supportive tools and environment

We have identified six key ingredients or elements that are associated with successful implementation of SMAs, including improvement of quality of care as evidenced by significant improvement in patient clinical outcomes, high SMA patient and provider satisfaction, and decreased wait times for patients with diabetes. The core keys to success are: 1) multi-professional team development (including continuity of team 2) motivational interviewing 3) nurturing peer support 4) teaching and encouraging self-management 5) a registry for identifying and tracking patients 6) continuous Quality Improvement / evaluation. The keys to success are discussed below and it is important to recognize that they function together to ensure success. Thus, for example, having a highly dynamic group with peer support but without motivational interviewing strategies to focus on what patients' desire as goals is problematic – both are necessary to make improvements in outcomes.

Multi-Professional Team Development (Including Continuity of Team): The more consistent the team members, the more quickly a team can adapt the implementation strategies to their local environment. Deference to expertise, not rank, is an important consideration in fostering teamness; that is the sense of mutual interdependence and supportiveness. An example of this may be to defer to a nurse practitioner about how quickly to titrate insulin since s/he may know how to implement insulin regimens in certain patients. We additionally focus on our successes, which allows for high provider team satisfaction.

Continuity of team need not mean that only the same three people do the session each and every time. What it does mean is that there is continuity in that all team members who rotate or take turns are seen as part of the team and involved with training, updates, debriefing and continuous quality improvement. You may find it helpful to send summaries of the debriefing session to the team member(s) who aren't scheduled for that session, or decide to have a monthly Team Continuity Meeting with all team members to reinforce the common goals and objectives.

Motivational Interviewing: Setting the Tone for Patient-Centered Group Encounters:

Healthcare providers and group moderators help promote behavior change in individuals with chronic illness through use of innovative approaches to communication such as motivational interviewing (MI). This approach is particularly useful when patient motivation and adherence are barriers to treatment effectiveness. Given that motivation is often a significant obstacle to behavior change, MI has been used to address many health problems related to lifestyle as well as in the prevention and treatment of many chronic illnesses (Miller, 2004). Although there are many strategies that can be used in the application of this method, MI is not a technique so much as a style for provider-patient communication. MI has been described as a patient-centered counseling style used for eliciting behavior change by helping patients to explore and resolve ambivalence (Miller & Rollnick, 1991; Rollnick & Miller, 1995). Miller (2004) further described it as “a way of being with people, that is also directive in seeking to move the person toward change by selectively evoking and strengthening the patient’s own reasons for change” (p. 4). The tenets of Motivational Interviewing acknowledge (Harris, Aldea, & Kirkley, 2006): (a) most people move through a series of steps prior to changing behavior, (b) effective change is self-directed, (c) confrontation and negative messages are ineffective, (d) knowledge alone is insufficient for behavior change, and (e) patient ambivalence about change must be addressed before successful behavior change can be accomplished.

To use this method, the practitioner and the patient work together to address the patient’s health care needs, emphasizing a collaborative approach (Miller, 2004). In MI, the practitioner selectively elicits and reinforces positive self-statements, consequently directing the patient to move in the direction of behavior change. However, the patient, not the practitioner, argues for change. To promote positive behavior change, providers must learn to utilize several principles in communicating with patients and these include rolling with resistance, expressing empathy, avoiding arguments, developing discrepancy and supporting self-efficacy (READS). Ambivalence regarding change is considered part of the process. Thus, the central goal in MI is to recognize the discrepancy between the patient’s stated goals and his/her present behavior. Eliciting reasons for change from the patient is more powerful than giving the patient prescribed reasons why change is necessary (Miller & Rollnick, 1991; 2002).

Nurturing Peer Support: Peer support is considered an essential component of SMAs and provides an opportunity for participants to share similar life experiences and challenges, offer support and activate one another toward positive behavior change. Among patients dealing with the same chronic illness, sharing experiences with others adjusting to similar medical and/or behavioral regimens has been found to be an effective means of gaining mastery over self-management skills and improving disease outcomes (Heisler & Piette, 2005). Assimilating new knowledge and appraisals through mutual exchange of experiences may occur more effectively when presented by peers with whom the patient identifies and shares common experiences. Group interaction appears to provide emotional support while lessening feelings of isolation and stigmatism that are associated with chronic illness (Weinger, 2003). Peer support also provides an additional social support network that many individuals lack when trying to meet the demands of their illness. Patients are actively

involved in decision-making and problem solving in relation to issues raised by others within the group. Moreover, the act of assisting another person can promote a real sense of contribution and certainly increase group cohesiveness (Olsson et al., 2005). Research has shown that patients found meaning and positive reinforcement for their own behavioral goals in seeking also to support other patients' efforts in managing their behavioral goals (Heisler & Piette, 2005).

Promoting peer support in shared medical appointments requires the group moderator to attend to both the content of what is being said and the process of the group (e.g., who is talking, for how long, which patients are disengaged, etc.). Often new moderators interact with patients by either lecturing or engaging in a question/answer session. This interaction sets the norms for the group and will inhibit patients from engaging in discussion with one another. Promoting peer support begins with the initial interaction and can be fostered by the moderator.

In general, the facilitator's job is to find ways to keep the patients talking with one another. Questions/interaction should be aimed at facilitating and promoting peer interaction. Sometimes you have to work harder to get patients interacting, but avoid falling into a lecturing style: ask questions, ask for stories, engage patients you know, rephrase question with another example, and don't feel like you have to fill the silence with information.

Teaching and Encouraging Self-management: The focus of self-management education within our Diabetes SMAs includes an emphasis on self-efficacy and the ABC's of Diabetes (A1c value, Blood pressure [BP] goal, Cholesterol goals, Diet, Eye exam, Foot exam), review of individual lab values and information about Hypoglycemia. This is not meant to take the place of diabetes self-management education but to address those necessary and pertinent topics for safety, and attainment of problem-solving skills in chronic disease care. Patients are encouraged to set a goal to help attain one of the above mentioned values or other health care measures (such as tobacco cessation or weight loss) (Bodenheimer, Lorig, Holman & Grumbach, 2002).

Registry for Identifying and Tracking Patients: The registry is any form of record that identifies actively managed patients in this case with diabetes. Furthermore, the registry can be used to identify patients with A1c, BP, Proteinurias or cholesterol parameters that fall outside the acceptable guideline measure. Our list also provides information on those in need of an eye or foot exam. If there is no current disease specific registry then a generated list of patients fitting the determined population will work.

Continuous Quality Improvement/Evaluation: Measuring the outcomes of the work the team is doing for and with patients is critical. Not only do administrative staff and clinic directors want to see successful improvements in patient measures, but this is critical for the clinical team as well. Often measures are of glycemic targets, blood pressure and cholesterol, which are more difficult to see early results in than process measures such as placing orders for A1c, foot exams and eye exams. Recognize that measures can also be patient satisfaction, care coordination, patient functional status, or number of emergency department visits. Choosing measures at the onset is important to show value to clinical leadership for sustained resources. As mentioned earlier, a key component of success is continuous quality

improvement, it is impossible to evaluate progress and make adjustments without measuring aspects of the care provided.

3.3.2 Identifying and addressing challenges

Although we have achieved much success, we have also had several challenges that were met and overcome. The following are several challenges encountered as we have initiated and sustained diabetes SMAs.

Managing Misinformation and Urban Legends: Occasionally patients will want to discuss home remedies for diabetes as if the remedy is scientifically based. This can almost have an infectious effect among group members. They often want to know more about the “cures.” Patients have talked about (among other examples) fasting then using honey and vinegar to control blood sugar; sometimes with disastrous outcomes. One way to defuse this type of misinformation is to gently interrupt the discussion, recognize that there are many home remedies that people have tried over centuries, that science is investigating some of these complementary and alternative treatments, but for our discussions we have to stay with what science recommends now, but also realize that other treatment modalities (some based on home remedies) may be included in our treatment options in the future after they have been verified by sound science.

Administrative Hurdles: From an administrative standpoint, pressure to serve patients in a traditional clinic setting may present barriers to changing formats and to allowing staff the initial time needed for developing and adjusting to changes. Emphasis on the long term gains and benefits (increase in patient numbers over time, improved access, cost savings when intermediate outcome measures improve, and high patient satisfaction) must be recognized by administrators in order to persevere through the initial adjustment period. Your champions, are often critical for getting and maintaining administrative support.

Growing Pains: Is important for the team to recognize there is an investment in developing the process for each local setting, with a return, but this must happen over a period of time with those intimately committed and involved helping to refine the process. In our local setting, we met and continue to meet after each shared medical appointment for 10 to 20 minutes to collaborate on patients as well as refine the process and flow (debriefing). Collaboration may mean various health professionals help in ways that are not specific to his/her disciplines. For example, our health psychologist will enter no show notes at the end of the session and our nutritionist will help download glucometers when needed. Flexibility and persistence are necessary and will pay off in the end.

Roles and Cross-Training: The multi/inter- professional nature of SMAs may be uncomfortable until enough cross-training has occurred. The cross-training is critical because it enables more flexible roles to emerge. Being flexible and cross-training help guarantee sustainability, otherwise if you lose one person, the structure of the SMA is lost. If the number of medication changers is limited, other means for facilitating order entry can be considered.

For settings where you are inviting other providers' patients, you may feel hesitant to make recommendations or changes. Our experience is that most non-participating providers

appreciate the help and the documentation provided in the individual and collaborative notes. Again, the focus is on diabetes, not the gamut of the patient's other issues.

Clinic Capacity: Clinic capacity depends upon space and available staff. Initially, it is often reasonable to invite fewer patients. This permits the team time to assess acuity, establish flow, and adjust the process of care delivery. Our experience with patients failing to keep this type of appointment ranges from 20 to 50%. At our local site, efforts to reduce the no-show rate have included: reminder phone calls, calling patients who no-show, and scheduling letters. Some sites have also reported use of patient attendance contracts. Adequate patients in clinic can be achieved additionally by overbooking the clinic. If you take this approach, overbook by no more than 40% of the total number of patients desired. Although it makes for a busy clinic if overbooked patients come to clinic, they can usually be accommodated more easily with multiple providers than with one provider. Teamwork is maximized and some patients may opt to be seen and not participate in the group session component due to time constraints.

The group discussion usually occurs in a large group room with individual medication changes occurring in smaller exam rooms. Some clinical sites may be limited by exam rooms and by the number of providers that can make changes to patient medication regimens. Generally, the number of patients per individual making medication changes should be about 6 to 1. Two to four small exam rooms are needed to keep the overall clinic time at 90 to 100 minutes. However, it is important to remember that 'traditional' exam rooms are not usually necessary. It is possible to work quite comfortably if you have access to only one traditional exam room and several private or semi-private spaces. Recall that the focus in the individual patient (one-on-one) session is on medication changes and diabetes-relevant issues; the goal is not to conduct a complete exam.

4. Lessons learned to help guide implementation for others

4.1 An approach to thinking about potential transferability and implementation

Multidisciplinary programs implemented to manage chronic disease are good examples of socially complex interventions that are "described theoretically but implemented subjectively" (Kirsh, Lawrence & Aron, 2009). Contextual characteristics interact in a dynamic way with the program and make the entire process highly individual. Consequently, care must be taken when implementing a model of care developed elsewhere. It is critical to think systematically about the factors involved. One framework that can inform implementation is the Consolidated Framework for Implementation Research (CFIR). The CFIR comprises five major domains (the intervention itself, inner and outer setting, the individuals involved, and the process by which implementation is accomplished.) We have described our implementation of SMAs, but recognize that like many interventions, it needs to be tailored for the specific context into which it is being implemented. The CFIR, interventions can be conceptualized as having components that cannot be altered, the essential and indispensable elements of the intervention, and those that can. The context into which an intervention is implemented is the setting. Generally, the outer setting includes the economic, political, and social context within which an organization resides, and the inner setting includes features of structural, political, and

cultural contexts through which the implementation process will proceed, e.g., structural characteristics, networks and communications, culture, climate and readiness. For example, the decision to implement SMAs will depend upon how such visits might be reimbursed. In addition, in some healthcare systems, e.g., US Veterans Health Administration, use of group visits has been mandated. How this mandate is put into operational use will vary from facility to facility.

As is true of most system redesign, the unique, local context is the starting point, and existing strengths and limitations need to be carefully considered, utilized, and re-envisioned. The format we found most useful and effective in our local setting includes a multi-professional team working collaboratively to see a group of patients (8-15) with diabetes (and their family members/caregivers) for approximately 90 minutes.

However, the line between the inner and outer setting is somewhat blurry. As to the individuals involved, Greehalgh et al. (2004) describe their significant role as follows: "People are not passive recipients of innovations. Rather (and to a greater or lesser extent in different persons), they seek innovations, experiment with them, evaluate them, find (or fail to find) meaning in them develop feelings about them, challenge them, worry about them, complain about them, 'work around' them, gain experience with them, modify them to fit particular tasks, and try to improve or redesign them-often through dialogue with other uses." (p. 598). Finally, there is the implementation process itself which will vary from program to program and site to site. In our program, the active involvement of internal change agents and local champions was critical.

4.2 Application of SMAs to professional training

Several healthcare professional accrediting bodies have called for integration of multiple professionals working collaboratively, or interprofessionally in care delivery and education. Because the structure and processes of the SMA are designed to promote collaboration, provide multi professional care, and integrate patients' perspectives in the collaboration, it provides a unique opportunity to educate professionals from multiple disciplines. The SMAs provide interprofessional training and collaboration by focusing on the domains of interprofessional competence: communication, teamwork, leadership, knowledge of one's own profession, knowledge of others' professions including each profession's mental models. SMAs also provide trainees an opportunity to understand the provision of care from a systems perspective as well as to appreciate how patients view their illness including the role of barriers in positive outcomes. Role modeling experienced during the SMA team provides education about the complexities of the disease and the knowledge, skills, and attitudes of interprofessionalism. We used this venue for training 3rd and 4th year medical students and Internal Medicine resident physicians. Our initial study involved 3rd and 4th year medical students participating in a four week chronic illness care block in facilities with and without SMAs and found that there was a significant improvement in attitudes toward diabetes among those in the intervention group compared to the control group. There were also greater improvements in recognition of psychosocial impact and seriousness of type 2 diabetes as well as in confidence in the ability to convey logic of clinical recommendations to providers from other disciplines/professions. We have also involved students from other disciplines – psychology, nursing, nutrition and pharmacy.

5. Conclusions and caveats

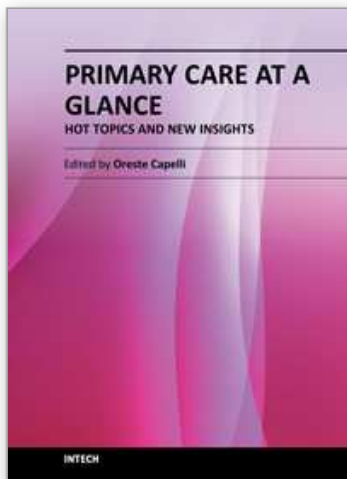
The patient-centered care in an SMA reinforces the concept that each patient is an individual, with unique life experiences, values, religious and cultural influences and psychological strengths and weaknesses that are taken into account in treatment and discharge planning. Informed and activated patients understand the vital role they play in managing their condition. SMAs provide an opportunity for providers to see and learn things that don't happen during a one-on-one session, providing more insights for helping patients manage their diabetes 365 days a year. This type of appointment allows patient to see differing perspectives in problem solving and productive interactions with other patients and healthcare professionals at one medical appointment. Intermediate outcome measures of aspirin use, annual eye examination, foot examination and patient self-efficacy are all addressed at each visit. Ideally, at the end of each session, a team debriefing occurs where patient issues and clinic processes are reviewed. The SMA promotes collaboration and effectively multiprofessional care while integrating patients' perspectives (Geriatrics Interdisciplinary Advisory Group, 2006; Kirsh, Schaub & Aron, 2009). While implementing a new shared medical appointment, it is prudent to recognize that there will undoubtedly be challenges, but if you are persistent and adhere to the essential phases, core ingredients, and key elements for success, it will be worth the effort for you and your patients.

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Primary Care at a Glance - Hot Topics and New Insights

Edited by Dr. Oreste Capelli

ISBN 978-953-51-0539-8

Hard cover, 446 pages

Publisher InTech

Published online 27, April, 2012

Published in print edition April, 2012

"Both among scientists and clinical practitioners, some find it easier to rely upon trivial explanations, while others never stop looking for answers". With these surprising words, Augusto Murri, an Italian master in clinical medicine, reminds us that medical practice should be a continuous journey towards knowledge and the quality of care. The book brings together contributions by over 50 authors from many countries, all around the world, from Europe to Africa, from Asia to Australia, from North to South America. Different cultures are presented together, from those with advanced technologies to those of intangible spirituality, but they are all connected by five professional attributes, that in the 1978 the Institute of Medicine (IOM)¹ stated as essentials of practicing good Primary Care: accessibility, comprehensiveness, coordination, continuity and accountability. The content of the book is organized according to these 5 attributes, to give the reader an international overview of hot topics and new insights in Primary Care, all around the world.

How to reference

In order to correctly reference this scholarly work, feel free to copy and paste the following:

Susan Kirsh, Renée Lawrence, Lauren Stevenson, Sharon Watts, Kimberley Schaub, David Aron, Kristina Pascuzzi, Gerald Strauss and Mary Ellen O'Day (2012). Shared Medical Appointments: Implementing Diabetes SMAs to Improve Care for High Risk Patients and Maximize Provider Expertise, Primary Care at a Glance - Hot Topics and New Insights, Dr. Oreste Capelli (Ed.), ISBN: 978-953-51-0539-8, InTech, Available from: <http://www.intechopen.com/books/primary-care-at-a-glance-hot-topics-and-new-insights/shared-medical-appointments-implementing-diabetes-smas-to-improve-care-for-high-risk-patients-and-m>

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