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2. Summarize recent information regarding patient and physician factors that influence SDM for cancer care, outcomes resulting from successful SDM, and strategies for implementing SDM in oncology practice.

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Implementing and Evaluating Shared Decision Making in Oncology Practice

Heather L. Kane, PhD¹; Michael T. Halpern, MD, PhD^{2,3*}; Linda B. Squiers, PhD⁴;
Katherine A. Treiman, PhD⁵; Lauren A. McCormack, PhD⁶

Engaging individuals with cancer in decision making about their treatments has received increased attention; shared decision making (SDM) has become a hallmark of patient-centered care. Although physicians indicate substantial interest in SDM, implementing SDM in cancer care is often complex; high levels of uncertainty may exist, and health care providers must help patients understand the potential risks versus benefits of different treatment options. However, patients who are more engaged in their health care decision making are more likely to experience confidence in and satisfaction with treatment decisions and increased trust in their providers. To implement SDM in oncology practice, physicians and other health care providers need to understand the components of SDM and the approaches to supporting and facilitating this process as part of cancer care. This review summarizes recent information regarding patient and physician factors that influence SDM for cancer care, outcomes resulting from successful SDM, and strategies for implementing SDM in oncology practice. We present a conceptual model illustrating the components of SDM in cancer care and provide recommendations for facilitating SDM in oncology practice. *CA Cancer J Clin* 2014;64:377-388. © 2014 American Cancer Society.

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Introduction

Engaging individuals with cancer in their treatment decision making has received increased attention as a key element of patient-centered cancer care and communication.¹⁻⁵ This greater focus on shared decision making (SDM) in cancer care is likely to have multiple benefits; for example, patients who are more engaged in their health care decision making are more likely to experience confidence in treatment decisions, satisfaction with treatment, and trust in their providers.^{3,6,7} SDM has become a hallmark of patient-centered care and is a component of the Patient Protection and Affordable Care Act.⁸ SDM is part of a broader concept of patient-centered care, identified by the Institute of Medicine (IOM) as 1 of 6 key elements of high-quality health care.⁹ Patient-centeredness refers to “care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.”⁹ In a subsequent review of cancer care delivery specifically, the IOM identified engaging patients and supporting patient decision making as an essential component of care.³ SDM goes beyond “informed decision making,” which refers to providing patients with evidence-based, balanced, and understandable information to inform decisions.¹⁰ SDM takes place in the clinical setting and involves interaction between patients and providers and mutual information sharing; providers help patients understand medical evidence about the decisions they are facing, and patients help providers understand their needs, values, and preferences regarding these decisions. Then, patients and providers together decide on a care plan consistent with medical science and personalized to each patient.^{11,12} The IOM report on delivering high-quality cancer care points to several factors that necessitate a patient-centered approach and shared decision making: 1) cancer care can be extremely complex, and patients’ treatment choices have serious implications for their health outcomes and quality of life; 2) the evidence supporting many decisions in cancer care is limited or incomplete; and 3) individuals differ in how they weigh the trade-offs of different choices.¹³ SDM is most useful for decisions in which there is more than 1

¹Health Services Analyst, Primary Prevention Research and Evaluation Program, RTI International, Research Triangle Park, North Carolina; ²Senior Fellow, Social Policy, Health, and Economics Research, RTI International, Washington, DC; ³Associate Professor, Public Health Policy & Management, University of Arizona, Tucson, Arizona; ⁴Senior Health Communication Scientist, Center for Communication Science, RTI International, Rockville, Maryland; ⁵Senior Research Scientist, Center for Communication Science, RTI International, Rockville, Maryland; ⁶Director, Center for Communication Science, RTI International, Research Triangle Park, North Carolina.

Corresponding author: Michael T. Halpern, MD, PhD, RTI International, 701 13th Street, Washington, DC 20005; (202) 728-2095; mhalpern@rti.org

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medically reasonable option, and the choice of which option is best for a given patient depends on his or her preferences and values. For example, women with breast cancer for whom mastectomy and lumpectomy are both options differ in the value they place on removing the breast for peace of mind regarding local recurrence, avoiding radiation treatment, and preserving their breast.¹⁴ Patient involvement in decision making is also important when considering treatment goals, such as choosing a less aggressive (and potentially less efficacious) treatment to provide increased quality of life.^{15,16} SDM is also critical in cancer treatment decisions involving limited or conflicting evidence or with high degrees of uncertainty.¹⁷⁻¹⁹ In these situations, clinicians need to help patients understand the uncertainties and elicit patient preferences and emotional responses to uncertainties. To implement SDM in oncology practice, physicians and other health care providers need to understand the components of SDM, the potential benefits and challenges resulting from engaging in SDM, and the approaches to supporting and facilitating this process as part of cancer care. The purpose of this article is to provide a summary for cancer care professionals of the recent literature on SDM and to describe benefits and challenges of implementing SDM in the context of cancer care. We also present a model illustrating the components of SDM in cancer care with recommendations for implementing SDM in oncology practice.

Methods

For this literature review, we drew upon several searches to identify studies of SDM in cancer care. First, we conducted a PubMed search using the Medical Subject Heading (MeSH) term that encompasses SDM in combination with the keyword cancer. We limited the search to peer-reviewed literature published in the last 5 years (from January 1, 2008, to August 30, 2013). This search yielded 3649 abstracts, which we reviewed for relevance. We included studies that covered any aspect of SDM in cancer treatment but excluded studies pertaining to screening and survivorship. We also maintained studies dealing with health literacy and informed decision making. After our review, we had 90 abstracts. We selected those studies that were most relevant to patient and provider factors affecting implementation and evaluation of SDM for cancer treatment for inclusion in the review. In addition to SDM pieces pertaining to cancer care, we also included seminal pieces related to SDM generally to inform the background and conceptual model sections of the article.

The SDM Process

Patient factors and SDM in cancer care

Patients vary in their preferred level of participation in cancer treatment decision making; patient characteristics such as

age, sex, race/ethnicity, cancer type, and individual values and beliefs may affect these preferences.²⁰⁻²³ Older patients may prefer a more passive role^{3,21} and have more communication barriers, such as low health literacy and numeracy,²⁴ which can limit their participation in SDM. Older patients are also more likely to bring caregivers to appointments,²⁵ which can change the decision-making dynamic. Some caregivers facilitate the discussion with the provider by asking for more information and explaining treatment options to the older patient; however, caregivers can also play roles that reduce the opportunity for SDM (eg, reducing patient autonomy by controlling the patient).²⁵ Women are more likely than men to report taking a passive role in cancer treatment decision making but also are less likely to report concordance between their actual and desired roles in decision making.²¹ Individuals from racial/ethnic minorities may express differing decision-making preferences and cultural values, such as the desire to include family in the decision^{22,23,26}; for example, a study of African American men with prostate cancer found that the men preferred more active (patient-directed) and collaborative (shared) roles.²⁶ However, both African American men and women emphasized the importance of patient engagement in the decision-making process, understanding the individual and his/her family context, and patient control over the treatment decision.²⁷ Latinas, especially those who speak Spanish only, report similar preferences for types of treatment decision making (physician led, patient led, shared) compared with whites and African Americans, but they have higher odds of decision dissatisfaction and regret than other racial/ethnic groups.²⁸ The variety in preferences among racial and ethnic groups suggests that providers should offer patients the opportunity to share in decision making but also should be aware that not all patients wish to participate in SDM. A recent systematic review of 23 articles pertaining to cancer treatment decision making among racial and ethnic minorities suggested that allowing the patient to assume his or her preferred role (ie, active, passive, or shared) can improve decisional satisfaction.²² Cancer type can also influence the role patients wish to play in their treatment decision making. Patients with solid cancers, particularly cancers for which treatments can have substantial functional consequences, tend to prefer greater involvement in decision making than those with hematologic cancers^{29,30}; breast cancer patients, for whom more educational materials exist, tend to play a more active role in decision making than patients with other types of cancer.^{31,32} Patients' preferences and how they weigh risks and benefits of treatment can change over the course of their cancer experience.^{33,34} For example, as cancer patients approach the end of life, their propensity to accept greater treatment-related risk may increase.^{3,35} Epstein and Gramling¹⁷ note that patients' preferences can change when patients are anxious, when they confront unanticipated

and unfamiliar circumstances, and when multiple options are available.

The role of caregivers

Caregivers and partners are often involved in cancer treatment decisions with patients. They provide social support and help patients to manage the information that providers share by helping to translate treatment options into terms understandable to the patient and to weigh treatment options.^{25,36} When providers engage caregivers and partners in decision making, patients have a higher likelihood of having more frequent discussions about treatment options with their loved ones.³⁷ Although patients generally value caregiver involvement in their cancer care, this involvement can also affect SDM; for example, caregivers may have treatment preferences that differ from those of the patients. In a study of 134 lung cancer patient-caregiver-physician triads, greater than 10% of providers reported that disagreements between patients and caregivers negatively affected their ability to provide patient care.³⁸ Furthermore, although physicians need to recognize these patient-caregiver disagreements to facilitate SDM, physicians may have difficulty in resolving such disagreements.³⁸

Provider factors and SDM in cancer care

Survey results suggest that physicians in general and oncologists in particular are interested in participating in SDM with their patients.^{39–45} Among 60 participating oncologists from the Netherlands, 95% indicated that patients should be involved in treatment decision making, and 73% preferred collaborative decision making.⁴⁴ In a survey of general surgeons, medical oncologists, and radiation oncologists in Ontario, only 24% were currently using decision aids to facilitate SDM for cancer treatment decisions.⁴² However, 71% of the physicians not currently using decision aids indicated interest in using them in the future. The most common physician-perceived barriers to SDM include: 1) time constraints, 2) perceptions that SDM cannot be applied because of patient characteristics, 3) the nature of the clinical situation,⁴⁶ 4) overly high workloads among physicians, 5) insufficient provider training, and 6) inadequate clinical information systems.⁴⁷ Physician-perceived barriers related to patient characteristics include patient anxiety, patient lack of information or misinformation, and patient unwillingness or inability to participate.⁴⁸ Several factors influence physicians' approaches to decision making regarding cancer treatment. A recent review⁴⁹ indicates that physicians' personal beliefs and values, medical expertise, practice type, perception regarding life expectancy, and communication style may affect this approach. For example, Tariman et al reported that urologists prefer surgery whereas radiation oncologists prefer radiation therapy for patients with localized prostate cancer.⁴⁹ Pieterse

et al found that surgeons and radiation oncologists are more likely to indicate that physicians should make treatment decisions than are medical oncologists.⁴⁴ Under-treatment of cancer among older patients, even among those with no comorbidities, is more frequent than among younger patients, suggesting that physician values for life expectancy affect treatment recommendations.⁴⁹ Limited information is available regarding the factors or preferences that influence oncologists to facilitate, use, or support SDM. In interviews with 22 Australian medical oncologists/hematologists and surgeons, Shepherd et al³² observed that physicians' perceptions and values influenced their degree of support for SDM. Some believed that *not* facilitating patient involvement in decision making was a sign of arrogance and that including patients in decision making reduced patient anxiety. In contrast, several doctors indicated that SDM was likely to result in patients making the wrong decision; in particular, patients wanted treatments with the best chance of survival, and this overrode concerns about including patients in the decision process. Physicians also indicated that patient characteristics influenced whether they involved patients in treatment decision making. Patients who were younger or female, particularly young female breast cancer patients, tended to be more involved in decision making; even among older patients, those who were female were described as more "assertive."

Treatment/disease factors and SDM

In the study of Australian medical oncologists/hematologists and surgeons cited above,³² doctors were more likely to involve patients in decision making when multiple appropriate treatment options existed as opposed to only a single option, particularly when there was uncertainty or controversy regarding the options (ie, where evidence for 1 treatment option vs another was inconclusive). Physicians also were more likely to support patient involvement in decision making when patients had a type of cancer for which more consumer or lay audience information was available about treatment options (in particular, breast cancer and prostate cancer); when the treatment options affected patients' lifestyle and self-image (eg, treatments for prostate cancer that affected sexual function); and when deciding upon treatments for patients with advanced or recurrent disease, for which the goal of treatment may change to supportive/palliative care. However, it is unknown whether the development of consumer/lay audience information about treatment options for a specific cancer stimulates interest in SDM for the treatments or is developed in response to preexisting interest in SDM.

Patient-provider dynamics and SDM

Factors that influence treatment decisions among patients and physicians may differ substantially. Patients may value survival

benefits more highly and may accept greater risk associated with less treatment benefit, whereas physicians may put more emphasis on treatment-related adverse events.^{35,50} For instance, in a review of the literature about patient preferences, Davidson et al⁵⁰ noted that lung cancer patients were more likely to accept chemotherapy—and with less potential benefit—than their health care providers. However, in another review, Zafar et al³⁵ explained that patients struggle with balancing survival with quality of life, and these preferences can evolve over the course of treatment; in 1 study, patients who had undergone treatment were willing to trade-off survival benefit for quality of life in hypothetical scenarios.³⁵ Patients and physicians may also express significant differences in the perceived benefits of certain treatment options⁵¹ and in the most important treatment side effects.²⁰ For example, individuals receiving adjuvant breast cancer treatment may have greater concerns about side effects that affect their quality of life (eg, loss of libido, fatigue, hot flashes), whereas physicians have different concerns about treatment-related adverse events.²⁰ In the absence of patient-led decision making or SDM and high-quality patient-physician communications, physician preference may lead to treatment choices that do not match patient desires. Patients and physicians may also disagree on how treatment decisions are made (ie, whether the patient had an active role in the decision-making process). In a study of decisions to participate in a clinical trial among Japanese patients with relapsed nonsmall-cell lung carcinoma, only half of the patients agreed with the physician's assessment regarding how the decision was made.⁵² Although we cannot determine whether that study is generalizable to the US context and to other cancer types, nonetheless, it sheds light on the potential for dissonance between patient and provider perspectives. Structural factors, such as how the health care system is organized, lack of reimbursement for physicians who implement SDM, and incomplete hand-offs between providers, also influence the potential for SDM between physicians and patients.⁵³ Joseph-Williams et al⁵³ identified the power imbalance between patients and providers as a barrier to SDM; and, without physician or care team support, patients do not feel empowered to participate in the decision making even when they are informed about their treatment options.

The SDM Process and Outcomes

Components of SDM include a recognition that a decision needs to be made, readiness to make a decision, the actual outcome of the decision, and decision quality.⁵⁴ To make or participate in a “good” decision, patients should be well informed about their treatment options, including the risks, benefits, and uncertainties associated with each (including choosing not to get treatment at a certain time). Patient involvement in SDM

is generally associated with greater confidence in a treatment decision, satisfaction with a treatment, greater levels of mental health and self-efficacy, and greater trust in the provider.^{6,7} However, some patients may prefer a more passive or physician-directed role,^{20,29,30,55} and those who desire and take on a passive role may nevertheless report positive outcomes. **Individuals with cancer who participated in decision making at their preferred level reported higher satisfaction with the decision and lower levels of depression.**^{52,56} In contrast, those with discordance between desired and actual roles indicated lower physical and emotional quality of life.⁵⁷

Implementing SDM in Oncology Practice

Implementing SDM in the provision of cancer care is often complex, because high levels of uncertainty may exist, and providers must weigh (and help patients understand) the risks of different treatments with potential benefits.^{3,18,35} Cancer care often occurs over an extended period of time and entails multiple treatment types (eg, surgery, chemotherapy, radiation, hormone therapy) and specialists, who may or may not work together as a team. Multiple decision points occur over the course of care, and patients may not be aware of how 1 decision leads to subsequent decisions. For example, decisions regarding neoadjuvant therapy may influence surgery treatment options, and decisions regarding surgery often influence options for subsequent adjuvant therapy. Furthermore, decisions often need to be revisited at various points along the cancer care continuum as patient's goals and preferences change. **Although SDM is likely to improve patient outcomes, it is also likely to increase demands on physician time.**¹ Despite the potential benefits of SDM, it is not yet widely implemented in clinical practice in the United States,^{47,58-60} although there is only limited evidence about how frequently SDM occurs in cancer care.^{21,61} In 1 study of 164 cancer patients with various solid tumors attending their initial oncologist appointment at an Australian tertiary care cancer center, oncologists generally exhibited little over half of the SDM behaviors examined. Oncologists were least likely to ask patients about their decision-making preferences, to provide a clear recommendation based on their appraisal of the evidence, and to discuss the strength of the evidence.²¹

Implementation strategies

Strategies for implementing SDM address both the individual provider level and the systems level. At the individual level, implementation steps used by oncologists and other health care providers can include eliciting patients' preferences; describing the available options, including the risks, benefits, and associated uncertainties; and agreeing on a plan for next steps in the decision-making process.⁵ **The Informed Medical Decisions Foundation defines 6 steps of SDM.**⁶² An adapted version includes the following steps:

1. **Invite the patient to participate:** Often, patients do not realize that there may be more than 1 treatment option or that they can participate in or direct treatment decisions. By inviting the patient to participate, the provider lets the patient know that he or she has options and that the patient's goals and concerns are a key part of the decision making process.
2. **Present options:** Patients need to know the available treatment options.
3. **Provide information on benefits and risks:** Provide balanced information based on the best medical evidence. Ensure patients correctly understand the information using such methods as the "teach-back," in which the provider asks the patients to repeat information in their own words and addresses any misunderstandings.
4. **Assist patients in evaluating options based on their goals and concerns:** To understand patients' preferences, ask about their priorities and concerns.
5. **Facilitate deliberation and decision making:** Let patients know they have time for considering treatment choices and ask what else they need to feel comfortable making decisions.
6. **Implement SDM:** Identify and present the next steps for the patient, assess whether the patient understands, and discuss any possible challenges with implementation. Suggested language for providers to use in discussing SDM with cancer patients and families is presented below:
 - *Sometimes things in medicine aren't as clear as most people think. Let's work together so we can come up with the decision that's right for you.*
 - *People have different goals and concerns. As you think about your options, what's important to you?*
 - *Do you want to think about this decision with anyone else? Someone who might be affected by the decision? Someone who might help sort things out?*
 - *I want to be sure I've explained things well. Please tell me what you heard.*⁶³

Not all health care decisions require the same level of support, nor do all patients—even for the same decision. Providers can reduce the strain on the clinical workflow by providing each patient with the level of support that is right for him or her. To do so, providers need to ask patients about the types of information and support they prefer. Some patients may need only a brief overview of the pros and cons to feel comfortable making a decision. Others may need more time and support—such as an interactive decision aid—to learn about their options; to talk with their family members, friends, or others who faced a similar decision; and to clarify their preferences. Clinicians can periodically assess in a neutral way a patient's readiness to make a

decision: "Would you like more time to think about the decision?" At the systems level, using a team approach can facilitate SDM. Nurses, patient navigators, or other practice staff can play key roles in providing information and tools (such as decision aids [DAs]), addressing questions, and helping patients prepare to meet with their provider.⁴⁹ This, in turn, can reduce the time required for physicians to support SDM, improve the quality of medical care decisions, and increase communications between patients and health care providers.

Using DAs to support SDM

DAs are tools designed to assist patients in making well-informed and thoughtful decisions among health care options. These tools differ from traditional health education materials by focusing on the treatment decision and the personalized patient connection with the treatment options being considered. A well-designed DA can:

- Provide up-to-date and accurate information about the health condition, the treatment options, the potential benefits and harms associated with each option and their probabilities, and any uncertainties;
- Help patients clarify the value they place on different health care outcomes; and
- Offer structure and guidance for the decision-making steps.

These aids come in various formats—including print materials, videos, and interactive web-based tools—and can be used before, during, or after a clinical encounter. Importantly, they are designed to support—not replace—provider counseling. The International Patient Decision Aids Standards (IPDAS) collaboration defines core elements for effective DAs, including providing information about options, presenting probabilities, clarifying and expressing values, and using personal stories.^{64–66} A systematic review of DAs—not specific to cancer-related decisions—found high-quality evidence that the use of DAs compared with usual care improves people's knowledge regarding options and helps them feel more comfortable with their choices, and there was moderate quality evidence that DAs stimulate people to take a more active role in decision making and improve accurate risk perceptions.⁶⁷ In the context of cancer care, a 2008 systematic review indicated that patients exposed to DAs were more likely to participate in decision making and to achieve higher quality decisions.⁶⁸ Additional studies indicated that DAs increased cancer patients' knowledge,^{69–73} participation in decision making,^{68,74,75} self-efficacy in communicating with the provider and in making treatment decisions,^{71,76–78} and decisional satisfaction.⁶⁹ DAs can also reduce cancer patients' stress or anxiety^{72,75} and decisional conflict.⁷⁹ For example, DAs reportedly were effective in promoting patients'

understanding of end-of-life care options.^{80,81} However, not all studies have found positive outcomes. **Studies of DAs for surgical treatment of breast cancer have yielded mixed results.**⁸² Variation in findings across studies may be due to the quality of the DAs and how they are used with patients. **Facilitators for implementation of decision-support interventions include training and skills development for providers, identification of a clinical champion, and a system in which eligible patients are systematically identified or supported to use DAs ahead of clinical consultations.**⁸³ Based on experience at Group Health, Armstrong and Arterburn⁸⁴ recommend several strategies to facilitate system-level change involving DAs to promote SDM. These include involving all members of the clinical care team in the effort to incorporate DAs into existing care processes, structured planning of personalized DA implementation, and postimplementation monitoring of DA use for encouraging SDM.

Conceptual Model for SDM in Cancer Care

Conceptual models provide a framework for implementing new care processes and evaluating whether these processes meet their intended goals. Several conceptual models for SDM have been developed to provide a framework that visually depicts the relationships among key factors, processes, and outcomes.⁸⁵

- Siminoff and Step⁸⁶ created the Communication Model of Shared Decision Making, which includes 3 main domains: 1) patient-physician communication antecedents (eg, sociodemographic characteristics, personality, communication skills); 2) communication climate, which includes information and decision preferences, disease severity, emotional state, and role expectations; and 3) treatment decision and patient's perceptions of the patient-provider partnership.
- Zafar et al³⁵ described a patient and physician treatment decision-making model that incorporates patient sociodemographic factors, illness experiences, quality of life, and disease state. Characteristics that influence providers' treatment preferences include experience and knowledge of the disease and specific knowledge of the patient's disease. Patient and provider treatment preference influence the patient-provider interactions.
- Brundage et al⁸⁵ described the Patient-Provider Communication Framework, which identifies 4 components that underlie communication between patients and providers: communication goals, patient and provider key attributes (eg, beliefs, values, and emotions), the overall communication process, and the environment in which communications occur.
- The Ottawa Decision Support Framework⁸⁷ purports that factors such as decisional conflict, knowledge, val-

ues, support, the type of decision, and personal characteristics all contribute to an individual's decisional needs. Decisional needs influence decision quality, which influences subsequent actions (eg, treatment delays) and the effects of treatment decision (eg, health outcomes, decisional regret, use of services).

- The Patient-Centered Communication in Cancer Care framework defines the functions of patient-clinician communication in the context of cancer care.² One of the functions of communication is to support high-quality decisions, which are achieved through active engagement by patients and clinicians in information exchange and deliberation to reach a shared understanding. Each of these frameworks presents SDM as a process between a patient and a provider that entails setting goals that can be achieved through communication. All acknowledge that patients' preferences regarding involvement in the decision-making process and providers' and patients' attitudes toward treatment, attitudes toward SDM, and personal values influence whether SDM is initiated and is successful. We have built on the Patient-Provider Communication Framework⁸⁵ and incorporated concepts from other model to create an updated, comprehensive SDM conceptual model called the Shared Decision Making Communication Process (SDMCP) (Fig. 1). In this model, SDM is broadly influenced by factors at the policy level (eg, federal, state, and local health care policies influence the availability of services, treatment options, and resources to support cancer patients and their families), the community level (eg, availability of resources, cultural norms), and the health care organizational level (eg, policies, procedures, and norms of the health care setting).⁸⁸ These levels are represented by the rectangular borders surrounding the model. The SDMCP resides within the interpersonal level, because it includes factors that influence the interpersonal exchange between the individual patient and provider. Several core constructs constitute the SDMCP model. The box "Provider's Background Characteristics" on the far left includes providers' age, sex, culture, language, education, and past experience; the corresponding box on the far right represents similar characteristics of patients. These characteristics feed into the next boxes toward the center: provider and patient knowledge, attitudes, skills, values, emotions, and treatment preferences. Knowledge of and attitudes toward treatment options and their effects (both positive and negative) create a frame of reference for treatment decision making and potentially a preference for a particular option. Skills refer to abilities used in the SDM process (eg, communication, information processing, prioritization), whereas values reflect the beliefs or principles that are influential in making treatment decisions. Because strong emotional

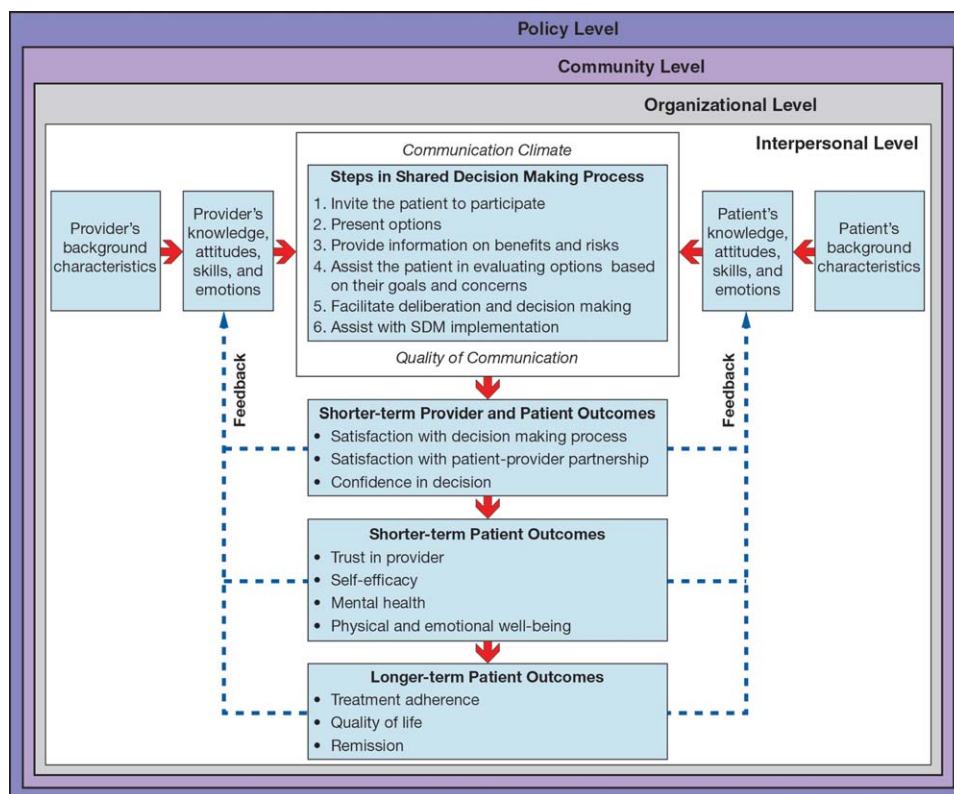


FIGURE 1. The Shared Decision-Making (SDM) Communication Process. Building on work by Brundage et al,⁸⁵ this figure presents a conceptual model illustrating how the background characteristics of patients and of providers influence their knowledge, attitudes, skills, values, emotions, and treatment preferences, which, in turn, influence implementation of SDM. Implementing SDM can affect patient and provider outcomes, which subsequently influence (ie, feeds back on) patients and providers as this process changes over time.

responses may compromise an individual's ability to process information and communicate effectively, emotions also influence SDM. In addition, both patients and providers may hold preferences for certain types of treatments (or for receiving no treatment) before engaging in SDM. The center of the model includes the 6 steps that providers can follow to support SDM,⁶² as described above (see Implementation Strategies). Decision making requires patients (and potentially their family members/caregivers) to consider and prioritize their preferences for the outcomes that matter most to them. Throughout the decision-making process, providers can use these steps and apply their skills to support patients participating in SDM that is aligned with patients' personal goals and values. Following SDM in the center of the SDMCP, this model includes 3 sets of outcomes to assist with evaluating the SDM process. The first set captures how effective patients and providers think the SDM process has been (eg, satisfaction with the decision-making process; confidence in the decision that was made). The second set focuses on shorter term outcomes, such as patients' mental/emotional status after the decision, trust in the provider, self-efficacy in making decisions about health care, and physical and emotional well-being. The third set focuses on longer term

outcomes, including treatment adherence, quality of life, and disease status (eg, remission). All sets of outcomes feed back to the knowledge, attitudes, skills, and emotions that influence the SDM process. The SDMCP improves on existing models by recognizing that steps in the SDM process are influenced by a broad range of provider and patient characteristics, psychological constructions, emotions, and skills. Multiple levels of influence (eg, organizational, community, policy) may affect communications in clinical settings. Fully implementing the SDM process affects the overall quality of patient-provider communication, potentially improving patients' satisfaction with the decision-making process and the ultimate health-related decisions that are made.

Recommendations

- Use the steps discussed above to inform patients about treatment decisions, and, to the extent they want to participate in SDM, invite them to participate. Patients may not be aware that they can participate in, initiate, or lead SDM or that their treatment preferences matter. Explicitly assessing patient decision-making preferences and offering treatment choices to patients who want to participate in SDM is critical, because physician preferences can strongly influence treatment

decisions. For example, among women with breast cancer, those whose oncologists had a higher preference for chemotherapy had significantly higher odds of receiving chemotherapy than those whose oncologists had a low preference for chemotherapy.⁸⁹

- Support patients' decisions regarding the extent to which they want to participate in SDM, including a decision to leave the treatment decision with the physician after thoroughly discussing the options. In addition, regularly assess whether patient preference regarding SDM has changed or is different with respect to a particular decision point, and adapt to any changes in patients' preferences. Ask patients, family members, and colleagues for feedback and suggestions for improving SDM.
- Acknowledge uncertainty, clarify which uncertainties are potentially reducible, and "let the patient plus clinical judgment guide the amount of detail to communicate."¹⁹ Oncologists and other health care providers should inform patients about the uncertainty and all reasonable treatment choices, including those that may involve trade-offs between potentially lower cure rates/life expectancy and improved quality of life, helping patients to consider which choices best match their individual goals. Providers should also assist patients in understanding the potential benefits, harms, and uncertainties of different options when only limited or contradictory information is available.
- Consider and incorporate a patient's values and preferences into SDM. Keep in mind that individuals from racial/ethnic minorities or other underserved populations who have cancer may have differing cultural values and decision-making preferences. **For a systematic review of SDM for racial and ethnic minorities in cancer care, see Mead et al.²²**
- Involve caregivers, partners, and other family members as an integral part of the decision-making process to the extent that the patient desires. Caregivers may have beliefs and preferences regarding treatment that differ from those of the patient. Including them in SDM is important for patient-centered care, but final decisions are ultimately up to the patient. It may not be possible for health care providers to resolve decision-making disputes among caregivers.
- Oncologists and other health care providers should approach implementing SDM in their practices with an understanding of the time required and should consider strategies that allow different members of the health care team to support the SDM process. As discussed by Katz and Hawley,¹ engaging patients and their families in SDM increases the demands on physicians' time. Thus, it is important to plan for the potential effects of SDM on clinical encounters and workflow.
- Train oncologists to facilitate SDM during or before residency. In a survey of residents in oncology-related specialties, the vast majority (93%) stated that communication skills (which are arguably broader than SDM skills) were very important. Areas of difficulty in communications highlighted by residents included discussing end-of-life issues, providing hope for patients with bleak prognoses, and dealing with hostile patients.⁹⁰ Medical residents who participated in a SDM training workshop reported an increased sense of control over providing SDM and higher perceived expectations from others to do so.⁹¹ However, this is clearly not an easy process; for example, some patients have reported that uncertainty communicated by physicians is associated with decreased treatment decision satisfaction and heightened cancer-related worry.^{92,93}
- Capitalize on health information technology, which offers new opportunities to support SDM through interactive decision aids, electronic health records (EHRs), patient portals, personal health records, and secure electronic messaging between patients and providers.^{94,95} For example, the EHR can include prompts to providers to engage in SDM in particular clinical scenarios; Providers can send or direct patients to web-based decision aids through the patient portal before the clinic visit and can conveniently communicate with patients about the decisions between visits through secure messaging.
- Partner with researchers to evaluate outcomes from SDM and share experiences with others in professional forums, including conferences and the peer-reviewed literature.

Conclusions

Despite significant movement toward the use of SDM, implementation is still in its infancy. Cancer care is often a complex and ongoing treatment process that involves several health care professionals, making it well suited for SDM. Challenges clearly exist with implementation, particularly with limited time available for health care encounters. The current health insurance payment system model does not have incentives to encourage its use.⁴³ Training of health care professionals to date has not emphasized communication skills, but this is beginning to change. A next step is to acknowledge these barriers and creatively navigate around them. Exactly how this is done may vary, depending on the individual practice and setting. Promoting SDM is a central feature of the Affordable Care Act and is a fundamental tenet of patient-centered care. Some argue that it is an ethical imperative: "The imperative for SDM rests on the principles of good clinical practice, respecting patients' right to know that their informed preferences should be the basis for professional actions."⁹⁶ **Most important, patients who experience effective SDM have better outcomes and are more satisfied.** ■

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