OPINION

ABC conceptual model of effective multidisciplinary cancer care

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Abstract | The treatment of cancer requires that health care providers and caregivers from many disciplines work together on the intertwined physical, psychological, social and spiritual needs of oncology patients. Providing a conceptual framework explaining how the members of multidisciplinary oncology treatment teams may best interact with each other and the patient helps drive patient-centered care and clarifies the roles of specific team members at various times over the course of treatment. The ABC model of multidisciplinary care in cancer treatment describes the roles of the active caregivers (for example, physicians or nurses), basic supportive caregivers (for example, psychologists or chaplains) and community support (for example, advocacy groups or hospital staff) providing the full continuum of the cancer treatment experience. Teams trained in the ABC model should better understand the function and importance of each member's role, increase patient involvement and satisfaction with treatment, and ultimately improve patient outcomes.

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Introduction

The specific objectives of multidisciplinary cancer care—cancer care delivered by representatives of a variety of professions and functions working in concert—are to increase the efficacy of treatment, improve quality of life, and enhance patient compliance with treatment plans, thereby increasing patients' satisfaction with their overall care. Improving the overall outcomes for cancer patients is a complex process that cannot be accomplished by only shrinking a tumor or increasing the length of survival. High-quality, multidisciplinary cancer care can shorten the course of illness, increase patient compliance with recommended treatment, boost patient morale and understanding, make it easier to formulate and implement optimal treatment plans, allay patients' and caregivers' fears, and help with enrolling patients in clinical trials. Multidisciplinary care can also significantly reduce the potential for medical errors by increasing communication and understanding between doctors, nurses, other caregivers, support staff, and the patient, thereby improving medical outcomes as well as lessening a treatment center's exposure to litigation.[1] In addition, multidisciplinary care has the potential to increase the job satisfaction and psychological well being of those providing the care.

To better illustrate the dynamics of effective multidisciplinary cancer care, we have developed the 'ABC' conceptual model. According to this model, effective multidisciplinary cancer care can be seen as consisting of three components: active care (A), base support (B), and community support (C). For effective multidisciplinary cancer care, all three components should be considered and coordinated by the health care providers. At the center of multidisciplinary cancer care is the patient (Figure 1), but many individuals contribute to each component that is needed to provide the best multidisciplinary cancer care (Table 1). The ABC conceptual model is designed to aid understanding of the modern, complex health care organization, but it also helps underscore the dynamics of how health care providers can best work in concert with each other.

Component A: active care

In oncology, active care predominately refers to the direct treatment of the cancer itself, cancer-induced symptoms, and the side effects of treatment. Individuals who deliver active care include physicians, nurses, pharmacists, physical therapists, occupational therapists and nutritionists (Table 1). These professionals are generally expected to practice evidence-based medicine; however, in situations in which guidelines for the practice of evidence-based medicine are not available or not clear, these health care providers, guided by a code of ethics, reach consensus regarding the best approach for a patient. The goal of active care is to increase patient health and satisfaction by solving the medical problems that the patient encounters. Furthermore, health care providers delivering active care are expected to improve the quality of care as well as advance the science in their area of expertise using evidence-based medicine.

Component B: base support

Base support is the assistance a patient needs to effectively receive active care. Individuals providing base support are predominately professionals trained to care for cancer patients' psychosocial well being, such as social workers, psychologists and chaplains. Nurses often provide base support in addition to delivering active care. Base support is not necessarily guided by evidence-based science.

A main goal of base support is to increase patient satisfaction by helping patients solve problems and to cope better with problems that cannot be solved. Another aim of base support is to increase patients' satisfaction with their care by ensuring that they are able to express their feelings, thoughts and opinions and by helping those involved in providing active cancer care reach a greater understanding of patients' specific individual needs and preferences. Individuals who provide base support frequently facilitate solutions that help optimize active care—for example, social issues may be addressed by social workers, insurance reimbursement issues handled by case managers, or spiritual needs addressed by chaplains or other spiritual advisors. Nonprofessionals, such as family members and friends, frequently serve alongside professionals to provide base support, so where possible they should be considered to be members of the cancer care team.

Competing interests
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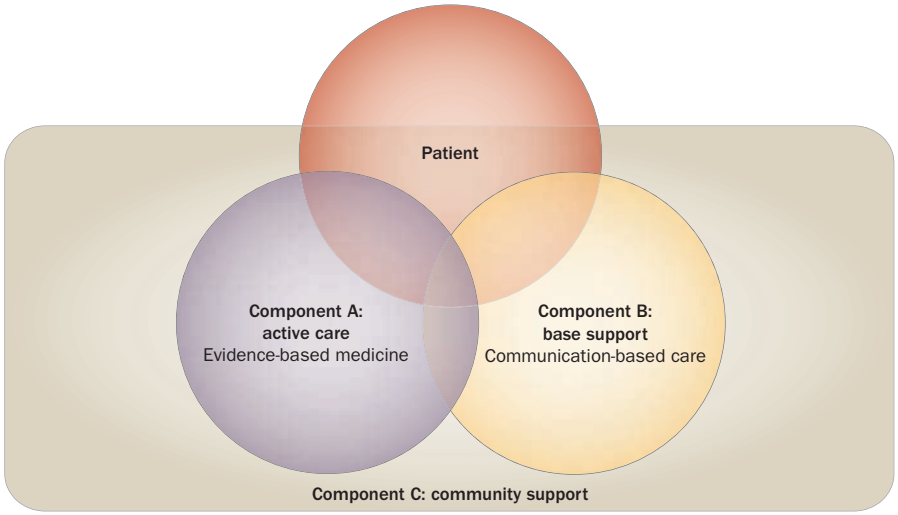

Figure 1 | ABC conceptual model of multidisciplinary cancer care

Table 1 | Overview of the ABC conceptual model

Component	Individuals who deliver the component	Objectives	Methods
Component A: active care	Physician, pharmacist, laboratory technician, nutritionist, physical therapist, occupational therapist, nurse	Provide evidence-based medicine, reach consensus on best approach to care when standard guidelines are not available	Multidisciplinary direct patient care
Component B: base support	Chaplain, clinical psychologist, music therapist, art therapist, nurse, social worker, family member, friend, spiritual advisor, nurse	Increase patient satisfaction with care, empower patients by giving them a sense of ownership of medical care	Clear communication, active listening, counseling, spiritual guidance, assistance with social and financial needs
Component C: community support	Patient advocate, pharmaceutical industry employee, research scientist, epidemiologist, government employee, social worker, family member, friend, spiritual advisor	Provide the support infrastructure to facilitate the work of components A and B, shape social and economic policy affecting cancer care, guarantee the quality of health care	Maintenance of hospital and clinic infrastructure, research, advocacy, goal setting, policy making, drafting and implementation of legislation

Many of the problems addressed through base support can be resolved, but some may have no ready solution and must be reduced or managed. For example, the side effects of chemotherapy can be mitigated somewhat, but not completely avoided. Having a support team that listens to the patient's fears and social distress and acknowledges the patient's discomfort is a critical component of cancer treatment and care. Therefore, in addressing problems, the primary functions of individuals providing base support are clear communication with the patient about available options and the practice of active listening, both of which empower patients by engaging them in fundamental decisions about their health care and letting them know that they are recognized and valued as individual human beings.

Component C: community support

Community support is distinct from direct patient care or base support in that it provides the necessary infrastructure to facilitate these functions through research and other non-medical services. Individuals providing community support may also be involved in shaping the social and economic policy surrounding cancer care delivery—for example, shaping legislation, securing funding, bringing attention to the practice and science of medicine or otherwise shaping health care delivery and the culture of the health care environment. Individuals providing community support might include hospital administrative staff, other hospital non-health care workers (for example cashiers and janitors), research scientists, epidemiologists, pharmaceutical industry employees, government employees engaged in shaping health care policy, and members and employees of patient advocacy organizations.[2] Individuals delivering active care or offering base support may also provide community support depending on their circumstances. The individual culture and sociopolitical system of a specific locale can also be understood as part of the community support component. Community support is guided by both evidence-based and non-evidence-based practices with the ultimate goal being to facilitate the delivery of high-quality cancer care to patients.

The ABC conceptual model in practice

Most individuals working in multidisciplinary cancer care have only a superficial knowledge of the purview and special issues faced by the other disciplines because of the highly specialized nature of each professional's role. This limited knowledge can lead to ineffective communication and collaboration. Furthermore, misunderstanding each other's experience, scope or limits can result in the setting of unrealistic goals or duplicated efforts. The best method for members of different professions to collaborate effectively in caring for cancer patients is through regular, active communication focused on securing a fundamental understanding of each other's skill base and approach to treatment.

Professionals delivering one major component of cancer care often have difficulty communicating effectively with those delivering other components, usually owing to the different educational backgrounds of each of the specialists. Without specific training or a formal educational process, many members of a multidisciplinary cancer care team may not recognize particular issues that can impact the quality of a patient's care and may not understand what each professional is attempting to achieve for the patient. Our experience has been that these issues are both common and significant; indeed, most hospitals and clinics do not provide the professionals involved with introductions to other occupations or critical opportunities for team building or team alignment, all of which we have found to be critical to the development of effective multidisciplinary cancer care (Box 1). Team members need to be trained to discover the differences of perception and opinion among them and to engage in creative, constructive discussion. Team trust is built by open, candid and respectful communication to the benefit of the patient.

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Together, components A, B and C encompass the totality of cancer care. The active care:base support:community support ratio, the 'A:B:C ratio', can change depending on the specific environment (for example, hospital versus clinic; small hospital versus large hospital; and primary versus secondary versus tertiary center) and the individual patient's disease characteristics (for example, early disease versus advanced disease; and acute disease versus chronic disease). If a patient has early-stage cancer, active care is most prominent; if a patient has a terminal illness, base support such as palliative and hospice care becomes increasingly central.

Importantly, different professionals may have active roles in more than one component of care at different times. For example, as mentioned previously, nurses frequently provide both active care and base support. If a hospital is small with limited resources, other professionals providing active care may also need to provide social support. In addition, regardless of profession, individuals active in the cancer-advocacy community or the politics surrounding cancer are involved in providing community support. Financial considerations, staffing levels and the ready availability of specialists significantly impact the role(s) each professional plays in the ABC model and should be considered when treatment plans are developed and delivered. There is no defined A:B:C ratio for a given profession; even people working in similar occupations can have different A:B:C ratios according to their talents, interests and the environment in which they work.

Another important factor is that the A:B:C ratio can dynamically change throughout the course of a patient's care. For this reason, the ratio that is in play at any given point in time should be carefully considered. When a shared mission and vision shape the delivery of health care to the individual patient, professionals collaborate with more ease and a clearer understanding of their specific role definitions and expectations in providing the different components of multidisciplinary cancer care.

Importance of patient engagement

Understanding some of the basic issues related to the ABC conceptual model might help patients rethink how they should establish their relationships with their health care providers. It is important that the patient and his or her family clearly understand the different components of care and the individual roles within them in order to know who to rely on for specific care and support. While historically US patients were fairly passive in receiving medical care, they now come for treatment armed with the latest research articles and prepared to engage actively with their caregivers by asking questions, identifying their options and facilitating communication among their care providers. A patient involved with his or her health care team can better recognize when efforts are being duplicated or treatment alternatives are overlooked, and is better situated to intervene on his or her own behalf when potential errors are identified.

For effective patient-centered multidisciplinary care, the multidisciplinary team needs to be aligned and functioning with the patient so that communication is encouraged at every step. Health care providers cannot know what a patient is experiencing without asking the patient; however, direct interaction with patients allows only a small window of understanding into who the patient is. Health care professionals should be careful not to extrapolate a full picture of the patient from these limited encounters. In addition, cultural differences in behaviors and values may interfere with team members' perceptions of the patient's needs and preferences. To better understand patients it is important to ask about their thoughts and feelings and encourage meaningful dialog. In the ABC model, the patient is considered to be a member of the multidisciplinary team and is encouraged to actively participate in his or her own treatment plan in order to receive the best care.[3] As previously mentioned, members of a particular profession can learn different things from their interaction with patients over the course of treatment. Nurses, for instance, often develop closer, more open relationships with patients because of their frequent interaction and active care. Consequently, nurses can be a rich source of information about the patient.

Box 1 | MD Anderson's approach to multidisciplinary care

At The University of Texas MD Anderson Cancer Center, institutional support for developing multidisciplinary teams has been made a priority, with much attention being given to the interactions of the care givers among themselves and with their patients. Physicians, researchers, nurses and other staff members are offered a wide range of quality-improvement programs that build team participation skills and enhance individual effectiveness. Teams are encouraged to participate in team development projects to help team members improve their ability to understand each other's roles and work together more efficiently. Patients and their families are provided with extensive information on cancer treatment and coping with cancer and are encouraged to actively engage with the health care team.

Care for patients at MD Anderson is also guided by a patient bill of rights, wherein patients are told what rights they have and can exercise during treatment, as well as the expectations the institution and their care givers have of them. Involving patients as active participants in their own treatment has been a central tenet of this patient-centered approach.

Creating multidisciplinary teams

How do individuals trained in diverse professions, such as medicine, nursing, social work, physical therapy, occupational therapy, pharmacy and spiritual care, learn to work together effectively? It is important for professionals to know and understand what other specialists offer and how to complement—rather than supplant, contradict, or repeat—the work of other disciplines. While there is a general consensus that working together in a complementary manner is not only desirable, but also necessary, this type of synergistic care is often difficult to put into practice.

Most health professionals are trained within the context of a field of specialty, and each specialty has its own jargon or 'language', value system, and unique way of looking at and solving problems.[4] Disease states can be so complex that two specialists from different fields can "look at the same thing and not see the same thing".[5] An additional hurdle that many individual practitioners do not even realize that this problem exists.[6] For patients, specialization can mean navigating through a labyrinth of caregivers who speak different 'languages', emphasize different issues, and focus on different aspects of the disease and its care. All too often, it is the confused and frustrated patient who must convey information from one specialist to another. Establishing effective communication between caregivers themselves and between the caregivers and the patient is important so that clarifications can be provided when someone unintentionally speaks in their profession's specialized vocabulary. All members of the team should feel comfortable asking for clear explanations throughout the course of treatment.

To be an effective member of a multidisciplinary team, an individual must be highly skilled and secure in his or her individual specialty[7] and also willing to leave the safety of this area of expertise to chart a new

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Box 2 | Multidisciplinary care requirements

- Patient education about care options
- Patient participation in decision making
- Transparent and timely communication
- Explanation of the component concept to the patient and care givers
- Appropriate composition of the multidisciplinary component
- Cross-cultural sensitivity
- Formal training of component members in the multidisciplinary approach

course.[5] Team members who understand the roles and perspectives of individuals from other professions are better able to listen to each other.[8] A poor understanding of the specialist knowledge of other team members can cause anxiety, conflict, and ineffectively functioning teams. It has been suggested that team members should clarify role perceptions and expectations, identify their own professional competencies, look for common ground among their competencies, and work together when possible, but also segregating and sharing responsibilities as necessary.[9] Importantly, whichever team is ultimately forged and whichever subspecialties it includes, the patient and the exigencies of his or her specific illness(es) should be at the center of all treatment plans and decisions.

Effective multidisciplinary care

In many academic institutions, multidisciplinary teams are formed without the members receiving any formal training in how to function as a team. Building an effective team depends on each member realizing that the team has been assembled deliberately and that teams go through phases of development. Each individual needs to understand how his or her behavior contributes to the dynamics and performance of the team as a whole. This type of experiential learning takes time, but even over the course of a 1-day retreat, a group can make a great deal of progress in understanding what is required to become a strong team that has the potential to realize its goals.

The most proactive way of creating dynamic multidisciplinary cancer care teams is to formally educate health care students in this approach during their training. Training future generations of cancer care providers in communication, conflict management, leadership, team dynamics, and the ABC conceptual model would reduce the effort required to achieve productive team alignment in practice. Growing interest in promoting multidisciplinary collaboration has prompted several federal agencies, including the National Institutes of Health, to establish large, multicenter initiatives intended to foster collaborative research and training.[10] The collaboration readiness of multidisciplinary research teams and centers was clear in the findings from the National Cancer Institute's Transdisciplinary Research on Energetics and Cancer Year-One evaluation study.[3] In this study, at least three categories of collaborative-readiness factors were considered: "(1) contextual–environmental conditions (for example, institutional resources and supports or barriers to cross-departmental collaboration; the environmental proximity or electronic connectivity of investigators, or both); (2) intrapersonal characteristics (for example, research orientation, leadership qualities); and (3) interpersonal factors (for example, group size, the span of disciplines represented, investigators' histories of collaboration on earlier projects)".[3] Ideally, a comprehensive multidisciplinary curriculum would provide a framework so that multiple professionals can act as a team traversing disciplinary boundaries to care for patients and their families. The goal is to enhance the awareness of diverse issues so that a common 'language' can be understood and put into action for the benefit of all involved in an effective therapeutic alliance. If this approach is successful, patients receive comprehensive care from providers having different disciplinary backgrounds in a single, supportive environment.

Conclusions

The ABC conceptual model provides a convenient way to think of the various components involved in effective multidisciplinary cancer care. Health care providers involved in cancer care need to understand and recognize the value of creating an efficient and effective multidisciplinary team that can address the complex needs of modern oncology care (Box 2). This type of approach is required not only for patient care, but also for the advancement of cancer research and the development of appropriate scientific and medical policy at the government level. Collaborative mentorship and training guided by the ABC conceptual model is a unique way to align patient care and research teams in a cancer center and allow them to be more effective.

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