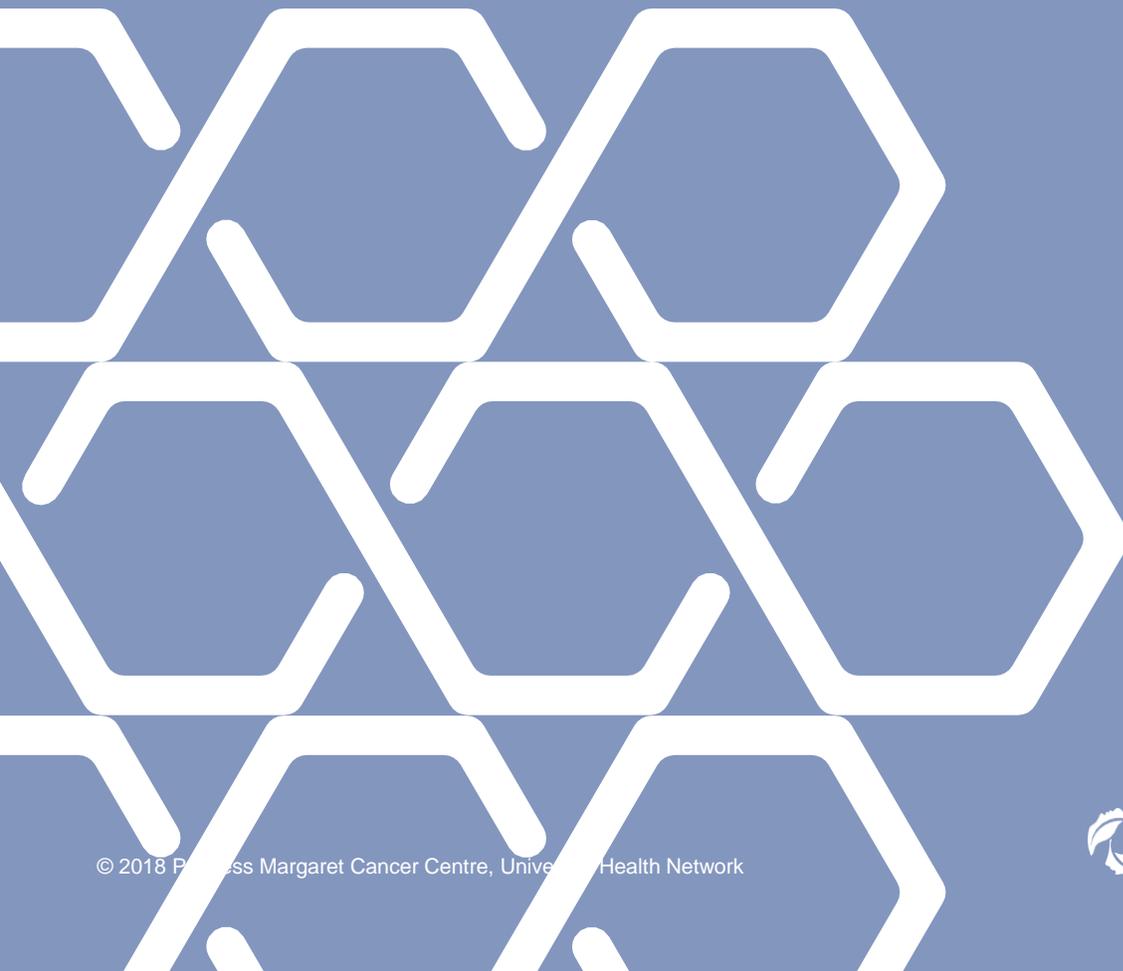


CLINICAL MANAGEMENT, THE HEALTHCARE TEAM AND PATIENTS

CLINICAL MANAGEMENT: APPROACH TO DECISION-MAKING

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CLINICAL MANAGEMENT: APPROACH TO DECISION-MAKING

A. INTRODUCTION	2
B. PATHWAY.....	2
1. Referral.....	2
2. Diagnosis and Treatment	2
C. PRINCIPLES	3
D. BEST PRACTICES	4
E. THE FUTURE	9
F. REFERENCES	10

A. INTRODUCTION

Clinical management is an approach to decision-making about all aspects of patient care. Cancer centres should aim to develop a consistent approach to clinical management that is based on agreed-upon principles and best practices.

This chapter provides an overview of the clinical management pathway and discusses enablers and structures related to clinical decision-making.

B. PATHWAY

The clinical management pathway includes several key decision points that influence the direction and quality of patient care, as illustrated in Figure 1.

1. REFERRAL

Clinical management begins with the decision to perform diagnostic assessment based on a suspicion of cancer or a cancer diagnosis. The primary care provider may suspect or diagnose cancer based on the results of screening or other medical tests, or because the patient has concerns about symptoms.

It is helpful for cancer centres to communicate referral standards and processes to the external community. This facilitates the efficient and prompt evaluation of patients. Referral standards should include:

- Expectations for the timeliness of referral acceptance, to minimize delays in initiating patient management
- An indication of the urgency of the referral, driven by the patient's symptoms, extent of disease and diagnosis
- Details of the medical information required to facilitate consultation, including pertinent medical records and imaging
- A process to facilitate the review of pathology specimens for diagnostic accuracy, where needed, or to optimize the requirements of clinical trials or new treatment

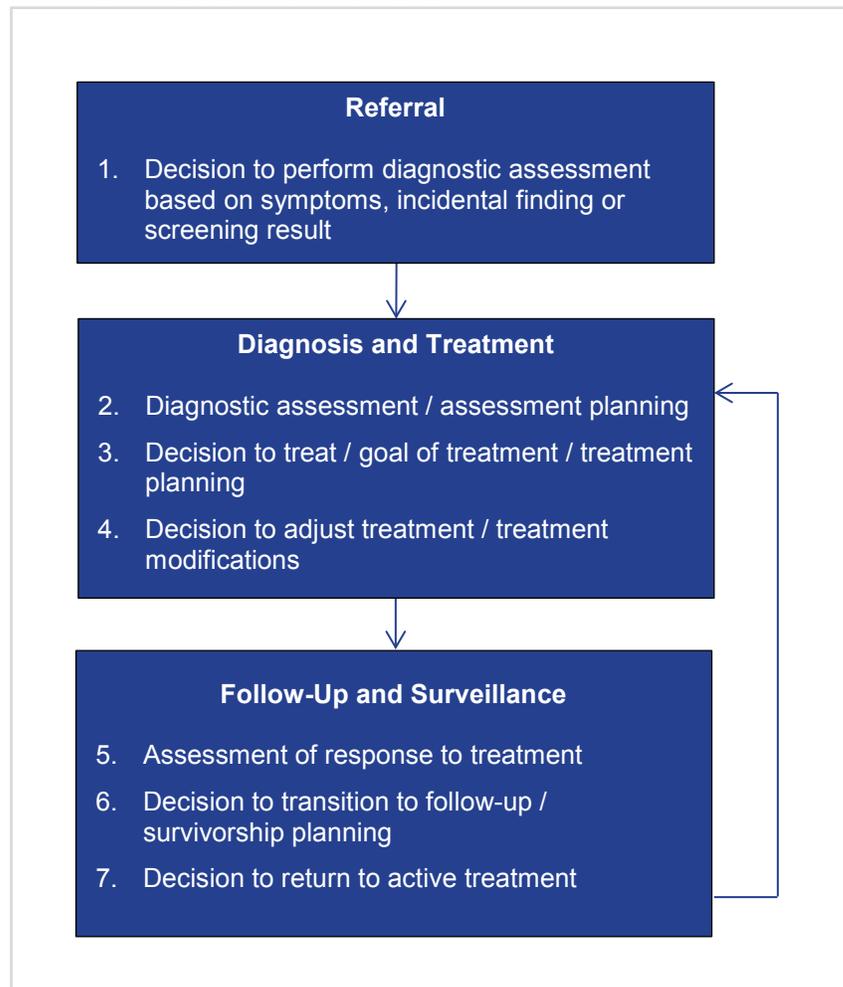
2. DIAGNOSIS AND TREATMENT

Patients are assessed during an initial consultation with a physical examination, imaging, laboratory tests and/or biopsies, as appropriate. Tests are selected based on signs or symptoms and available diagnostic information, and may progress iteratively based on findings. The results of tests are reviewed to determine the presence of cancer, the extent of cancer, and the patient's general health status and suitability for treatment.

If cancer is confirmed, a goal of management should be established, along with an individualized treatment plan. The treatment plan should identify the expected timeframes for initiating and completing treatment as well as an optimal set of interventions, which may include single or multimodality treatments involving surgery, chemotherapy, radiotherapy and/or palliative care. Supportive care should be offered to all patients. Depending on a

patient's condition, the treatment plan may range from simple to very complex. Enrollment in clinical trials is desirable, and information about trials should be made widely available.

FIGURE 1: THE CLINICAL MANAGEMENT PATHWAY



Treatment plans may be adjusted over time based on the patient's observed side-effects and response to treatment.

Follow-Up and Surveillance

When treatment is complete, the overall response to treatment is assessed and documented. A monitoring and follow-up plan should be developed to support continuing care and surveillance of the patient. The plan should include provisions for both monitoring at the

cancer centre (i.e. scheduling of ongoing clinic visits and tests), as well as for transitioning the patient back to the primary care provider, where possible. It should also include provisions for the later return of the patient to the cancer system, if indicated.

C. PRINCIPLES

The clinical management of cancer patients should adhere to the following core principles of decision-making.

Informed or evidence-based decision-making ensures that patient care is given based on a comprehensive knowledge of the patient's medical and psychosocial needs, as well as the best evidence available for the diagnosis and treatment of cancer.

Integrated and shared decision-making between healthcare team members and patients and caregivers has a positive impact on the clinical management of patients. It enhances the

continuity of care across the patient journey, improves communication and information exchange across providers, disciplines and settings of care, and has a positive impact on the patient and their caregivers (e.g., experience of healthcare, symptom management, quality of life, clinical outcomes of care). It also provides additional value to healthcare providers (e.g., job satisfaction, experience) and to the healthcare system (e.g., efficiency of care delivery, appropriate resource utilization).

Quality-focused decision-making concentrates on the following six aims: ¹

1. **Safety:** avoiding harm to patients from the care that is intended to help them
2. **Effectiveness:** providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit
3. **Patient-centeredness:** providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions
4. **Timeliness:** reducing waits and sometimes harmful delays for both those who receive and those who administer care
5. **Efficiency:** avoiding waste, including erosion and deterioration of equipment, supplies, ideas and energy
6. **Equity:** providing care that does not vary in quality because of personal characteristics, such as gender, ethnicity, geographic location and socio-economic status

D. BEST PRACTICES

A number of clinical management best practices have been demonstrated to support informed, integrated and quality-focused decision-making.

Collection of Information

Patient health records enable the systematic documentation of a patient's status and care over time. As a comprehensive collection of patient information, the health record also supports current and continuing care. Both clinical and demographic information are captured, including the patient's history, test results and diagnoses, interventions and reassessments. Clinical decision-making may be supported at the point of care by the data found in health records. Health records also create a means of communication between healthcare providers about a patient's status, treatment decisions and care delivery instructions. For more information, see the [Cancerpedia: Health Records](#) chapter.

Effective communication is essential to good decision-making and high-quality care. Of particular importance is the provision of comprehensive referral information. At a minimum, referrals should include the reason for the referral, patient identifiers, key patient health information (e.g., recent health assessments, baseline vitals, allergies and intolerances, other health issues, treatments, medications), personal preferences regarding medical care and information about other care team members. Cancer care providers should, in turn, ensure

regular communication back to the referring physician and other care team members regarding the status of the patient and key considerations for the management of their overall health. This regular communication should include the results of assessments, the initial treatment plan and any modifications, expected side-effects and contraindications, and information to support follow-up. For more information about high-functioning healthcare teams, see the [Cancerpedia: Healthcare Team](#) chapter.

Evidence-Based Guidelines

Practice guidelines facilitate optimal clinical management decisions. Guidelines may be ranked by the strength of their supporting evidence, ranging from the most robust (i.e., typically Level I or A) to the least robust. Generally, well-designed and executed clinical trials reflect the highest level of evidence whereas consensus or expert opinion are regarded as lower levels of evidence. Evidence-based frameworks vary in complexity. For a sample framework, see the University of Oxford Centre for Evidence-Based Medicine's [Levels of Evidence](#).²

The value of using evidence-based guidelines for optimal cancer care is widely accepted. Evidence-based guidelines exist for treatment, the management of symptoms and complications, indications for medical imaging and diagnostics. Nursing and other health professions also develop guidelines to guide interventions and care. Evidence-based guidelines relating to specific clinical services can be found in other *Cancerpedia* chapters.

Guidelines must be reviewed at regular intervals and updated as new evidence becomes available. Cancer centres are lifelong learning organizations, since knowledge about cancer continues to expand and evolve. Continuing education and professional development programs are essential to enable healthcare providers to remain up-to-date with the most current guidelines available. For more information, see the [Cancerpedia: Education](#) chapter.

Larger healthcare bodies develop, recommend and make available evidence- and consensus-based guidelines for cancer. Selected examples include:

- Cancer Care Ontario's [Program in Evidence-Based Care](#), which produces evidence-based guidance documents for all major cancer disease sites and across all clinical programs and modalities.³
- [Cochrane](#), which gathers and summarizes the best research evidence to inform the development of guidelines.⁴
- The Canadian Partnership Against Cancer's [Cancer Guidelines Database](#), which provides a searchable database of cancer control guidelines and standards.⁵
- The [National Comprehensive Cancer Network](#), which has developed guidelines detailing the sequential management decisions and interventions that apply to 97 per cent of cancers affecting patients in the United States.⁶
- The [National Institute for Health and Care Excellence](#), which produces evidence-based guidelines and advice in many areas, including cancer care. (7)

Clinical Decision Support Tools

A wide range of clinical decision support (CDS) tools are available to support evidence- and consensus-based decisions about patient management. These tools provide critical information at the points when clinical decisions are being made and care is being delivered. For example, CDS tools in chemotherapy include computerized systems that assess a patient's characteristics in relation to a database of current clinical practice standards and guidelines, and have additional safeguards relating to the appropriate choice of medication doses and scheduling. This enables the clinician to make the best clinical management decisions for the patient. Other examples include routine order sets for certain clinical conditions or alerts when the type or dosage of a medication is unusual.

As the body of evidence regarding cancer care grows, CDS tools are becoming increasingly essential to accessing and distilling information that enables optimal patient management. Various organizations develop and/or post CDS tools that can be adopted or adapted to local circumstances. Information about where to find CDS tools relating to specific clinical services can be found in other *Cancerpedia* chapters.

Multidisciplinary/Interprofessional Care

The majority of cancer patients engage with a number of different services from a range of healthcare providers, who work together in a multidisciplinary/interprofessional team.

Multidisciplinary/interprofessional teams optimize the skills of different healthcare providers, who bring their unique expertise to bear on patient management. Teamwork involves an effective leader who organizes individuals to develop a collective vision, using everyone's talents to achieve goals and provide quality care.⁷ The effectiveness of teamwork depends on a number of factors, including team members' knowledge of one another's roles and scopes of practice, mutual trust and respect, commitment to building relationships, and willingness to co-operate and collaborate, as well as organizational supports.⁸ Each patient must have a most responsible provider/physician (MRP), whose role is to integrate information and advice from the healthcare team and to accept ultimate responsibility for the management of the individual patient. For more information, see the [Cancerpedia: Healthcare Team](#) chapter.

The **multidisciplinary cancer conference** (MCC) is a quality practice that guides complex, evidence-based, shared decisions about treatment. MCCs should bring a true multidisciplinary/interprofessional focus to discussions and decisions, including the diagnostic, treatment and psychosocial aspects of care.⁹ Representation from medical imaging, pathology, surgery, medical oncology, radiation oncology, nursing and other health professions is essential to evaluate patient information and discuss diagnostic and treatment options. MCC members are tasked with reviewing the patient health record, examining clinical trial options and providing treatment recommendations. The MRP assesses and discusses the treatment recommendations with the patient, and together they develop a treatment plan. Finally, a care pathway is developed and the associated resources are organized to provide services.

Service integration is essential. Patients should experience seamless handoffs between healthcare providers and services throughout their care journey. Strategies and tools to support the continuity of care include health records, evidence-based guidelines, clinical decision support tools, as described above, and:

- Central patient intake structures and processes that allow for the co-ordinated scheduling of appointments across multiple healthcare providers and services
- Care protocols and pathways, which recommend a core sequence of assessments and interventions according to diagnosis, thereby enabling the planning and co-ordination of efforts
- Shared treatment plans that document and co-ordinate cancer treatment to facilitate provider-to-provider and provider-to-patient communication

Several tools have been developed to help guide the establishment of multidisciplinary/interprofessional discussions, collaboration and care.

Selected examples include:

- Cancer Australia's [multidisciplinary care tools](#) ¹⁰
- Cancer Care Ontario's [multidisciplinary cancer conference tools](#) ³
- The National Cancer Action Team's [characteristics of an effective multidisciplinary team](#) ¹¹

Patient Engagement

Shared decision-making is the interaction between patients and healthcare providers in the clinical setting, and includes:

- Mutual information sharing, where healthcare providers help patients understand medical evidence relating to the decisions they face, and patients help healthcare providers understand their needs, values and preferences relating to these decisions.
- Mutual planning, where healthcare providers and patients work together to decide on a care plan that is consistent with medical evidence and personalized to the patient. ¹²

The Institute of Medicine emphasizes the importance of shared decision-making as well as informed and engaged patients as key contributors to high-quality care. ¹³ Shared-decision making goes beyond informed consent and informed decision-making, both of which focus on sharing of information rather than two-way communication, engagement, understanding and joint planning. Shared decision-making with patients is particularly important in cancer care, given that decisions can have a significant impact on the patient's quality of life and outcomes. ¹³

Research has found that patients who are more engaged in their healthcare decisions are more likely to experience confidence in treatment decisions, satisfaction with treatment and trust in their providers. ¹² In their study of decision-making related to lung and colorectal cancer treatment, ¹⁴ found that regardless of whether patients expressed a preference for physician-controlled or shared decision-making, patients who experienced physician-controlled decisions reported lower ratings of quality of care and physician communication compared to patients who experienced shared decision-making.

Successfully implementing shared decision-making in cancer care requires an understanding of the components of shared decision-making, the benefits and challenges of the approach, and methods for supporting and facilitating the process as part of cancer care.¹² Selected resources include:

- *Implementing and Evaluating Shared Decision Making in Oncology Practice*¹², which includes a conceptual model of shared decision-making in cancer care and recommendations for facilitating shared decision-making in oncology practice.
- [Healthwise](#), which advances shared decision-making.¹⁵

For more information, see the [Cancerpedia: Patients](#) chapter.

Peer Review

Peer review is a tool to improve quality, whereby healthcare providers examine each other's decisions against evidence-based guidelines, standards of care and other criteria. Peer review can be prospective, serving as an intervention that may potentially alter the course of an individual patient's care, or retrospective, serving to inform processes and practices that affect the quality of care of future cancer patients.

Real-time peer review refers to the evaluation of the treatment plan by one or more non-treating physicians prior to execution. There is evidence that real-time peer review can alter the course of patient care, resulting in significant clinical impacts.^{16, 17}

Quality of care conferences (QCCs) – also known as morbidity and mortality rounds or morbidity and mortality conferences – examine the quality of care that was provided to a patient or set of patients. Everyone who was involved in the treatment of the cancer patient under discussion must attend (e.g., physicians, nurses, technologists, managers, etc.). QCCs should include open and frank discussions in an atmosphere of just culture. For more information, see the [Cancerpedia: Quality](#) chapter.

Audits systematically assess clinical practice against evidence-based guidelines to determine if these guidelines are being met, to assess whether patients are receiving the best quality of care and to identify areas for improvement.¹⁸⁻²⁰ The focus of audits can vary widely. For example, some organizations may routinely audit a proportion of patient health records in selected high-risk, high-volume or high-cost areas as part of ongoing quality improvement efforts.²¹ Other organizations may audit records when there appear to be issues in implementing standards or when an incident has occurred.

Audits usually use retrospective data, which may be supplemented by interviews and surveys.²⁰ The audit sample should be small enough to collect data quickly and large enough to be representative.²¹ Audits that use prospective data require good information technology, but can provide immediate feedback on current performance and positive reinforcement to improve or maintain practice.¹⁹ For additional information, see the [Cancerpedia: Quality](#) chapter or *A Practical Handbook for Clinical Audit*.²¹

E. THE FUTURE

Tools for clinical management continue to improve along with technology. The availability of electronic patient health records and mobile, internet-enabled devices means that patient information and evidence-based guidelines are increasingly accessible at the point of care to facilitate quality clinical decision-making on an as needed basis.

Mobile devices also provide an opportunity for the collection of patient and clinical data in real time.

As healthcare organizations have come to amass vast amounts of data, funding for artificial intelligence (AI) and machine learning approaches has grown substantially.²² Currently, AI is being used primarily for back office functions (e.g., scheduling) as well as predictive measures (e.g., risk of readmission). Moving forward, it is expected that AI will play an increasing role in real time clinical management by allowing for faster diagnostics, the early identification of warning signs and emergent events, and the algorithm-based testing and simulation of clinical decisions to inform treatment planning. AI also has potential to support personalized medicine by aligning individual biological profiles to likely adverse reactions and best match therapies.²³

Despite progress, the use of AI in clinical practice remains experimental today and should be considered an augment to human capabilities. Technology-driven initiatives must be given proper oversight by human resources to verify the accuracy of AI outputs and to ensure clinical decisions are appropriate to each patient. It is also important to consider that many patients – especially those in older age brackets – remain skeptical of technology-assisted decision-making. Ongoing education and collaboration with patients will be required to ensure cooperation with new approaches to treatment planning and monitoring. For more information about patient-centred approaches, see the [Cancerpedia: Patients](#) chapter.

For more information about the potential of AI, see *Artificial intelligence in healthcare: past, present and future*²⁴ or *Artificial intelligence (AI) and global health: how can AI contribute to health in resource-poor settings?*²⁵

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