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INDUSTRY INSIGHTS

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# Oncology Networks Best Practices

*A Study of Governance, Resources  
and Clinical Coordination*

# Executive Summary

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As cancer prevalence continues to rise in the United States, demand increases for highly coordinated oncology networks that provide the best possible patient care closest to home. A Kurt Salmon study conducted in the fall of 2010 found that all regional oncology networks surveyed are in the process of increasing coordination of services and resources, but that most networks remain at a low or intermediate level of development. As many networks remain underdeveloped in certain key areas, investing resources in enhancing the network now can create an opportunity for growth and value in the future.

The study was conducted to better understand current levels of development and best practices in three areas: organization and governance, systems and resources, and clinical care coordination. Examined together, these three areas create a broad picture of the maturity of oncology networks.

- » **Organization and Governance:** The most advanced oncology networks have governance administered through a central oncology network leadership council consisting of key administrative, physician and nursing leadership. This body has defined authority over network resources across all sites and is coordinated with other governance structures, such as the CEOs of individual hospital sites.
- » **Systems and Resources:** Leading networks have developed highly coordinated centralized systems and resources supporting the network. The network has a central administrator and staff that lead, coordinate, direct and support network development. Leading oncology networks are distinguished by their increased dedication to developing electronic health records (EHRs) and common IT systems across network sites. Network planning and budgeting are completed across multiyear cycles to support advancement.
- » **Clinical Care Coordination:** This area represents the most underdeveloped aspect of the oncology networks studied. The best practices are implementation of common clinical care protocol sets across all sites, instantaneous access to patient records at any point of care and demonstrating improved clinical outcomes. All participants envision this as the future state, even though few have achieved it in practice.

# About the Study

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The study was conducted through informational interviews with oncology network senior leaders. Through a capability maturity model, Kurt Salmon determined the current level of development for each network in each of the three areas. This paper discusses the best practices in each area, as well as the findings and common levels of development. The capability continuum includes three levels.

- » **Basic.** At the basic level of maturity, there is wide variation in practices across sites with reliance on systems and processes that are largely manual, complex and time-consuming.
- » **Intermediate.** Organizations at the intermediate level achieve a broad range of organizational objectives, including decreased variation across care sites. These networks are typically characterized by more complex systems and processes coordinated through a central body.
- » **Advanced.** Advanced networks currently have a fully developed structure, policies and resources to achieve robust network goals. They have achieved consistent, streamlined processes to improve care outcomes across sites. They are expanding oncology care by undertaking innovative initiatives with groups outside of the network, such as the National Institutes of Health.

# A Case for Enhancing Oncology Networks

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The aging U.S. population, increased cancer diagnosis and higher survival rates create a greater demand for lifetime oncology care. As people with cancer are living longer, they need access to follow-up screening and treatments at various times, and they need to better integrate their oncology care with the balance of their healthcare services. These demands drive the development of more highly coordinated oncology networks that provide services at the local sites as well as coordinate higher-acuity care within the network. Provision of robust, coordinated and high-quality oncology services within local communities is essential to making treatment more accessible.

For many patients, treatment occurs over extended periods of time, and the ability to receive leading-edge treatment close to home is both convenient and contributes to improved clinical outcomes. Local services allow the patient to better adhere to routine screening schedules, follow higher-frequency care protocols and access care more quickly. The increasing use of information technology to link clinicians reduces the importance of geographic location and extends leading-edge treatments from tertiary/quaternary sites to community provider settings. Over the past two decades, many high-acuity oncology centers and community hospitals have formed oncology networks to extend the reach of treatments and provide patients access close to home.

While the primary goals of oncology networks vary, common goals aim to balance acuity level of treatment with geographic proximity to patients. Major oncology programs generally seek to build regionally broad networks providing local access and services while identifying patients most in need of high-acuity tertiary and quaternary care.

As networks grow, they develop access to leading-edge protocols and clinical trials. To varying degrees, networks advance their organizational models and governance and, over time, dedicate resources and provide access to systems and tools supporting each network site as they mature.

The following findings include both the best practices—the leading elements of development in place today—as well as common trends or development levels that may not necessarily represent best practices. (See Exhibit 1.)

To qualify as a best practice, the behavior needs to clearly advance the objectives of the oncology network in a sustainable manner and serve as a building block for future advances. Best practices also need to appropriately leverage technology and processes to enhance the ability of the oncology network to improve clinical outcomes and patient satisfaction and to support clinicians in the care delivery process.

Even oncology networks that are near the advanced level have a mixture of best practices and less-than-leading practices.

## Organization and Governance

In reviewing oncology networks’ organization and governance, this study explored the organizational structure; the network ownership type; the level of centralized, dedicated governance; and the degree of dedicated leadership.

Along this dimension of the study, the most common level of development clustered around the intermediate maturity. (See Exhibit 2.) At this level, networks have variable degrees of centralized network organization and leadership; it is common to have limited organizational strength and leadership. Only one network achieved the advanced organization and governance maturity level, a fully developed system with an appropriate structure to achieve network objectives.

### Exhibit 1: Oncology Best Practices

<b>Organization and Governance</b>	<ul style="list-style-type: none"> <li>&gt; Governance through a strong, centralized oncology leadership council</li> <li>&gt; Authority defined through an oncology network charter</li> <li>&gt; A dyadic leadership structure with an administrative and physician leader</li> </ul>
<b>Systems and Resources</b>	<ul style="list-style-type: none"> <li>&gt; Dedicated oncology network administrative support group</li> <li>&gt; Dedicated oncology network functional support staff</li> <li>&gt; Use of common information technology systems across all sites</li> <li>&gt; Stable funding sources for network goals and initiatives</li> </ul>
<b>Clinical Care Coordination</b>	<ul style="list-style-type: none"> <li>&gt; Standard treatment protocols and care processes across all sites</li> <li>&gt; Coordination of the clinical care information flow</li> <li>&gt; Adding provider–patient information flow into clinical care delivery</li> </ul>

### THREE OWNERSHIP MODELS

Oncology networks are formed to address regional oncology treatment needs. They may be classified as falling within one of three ownership models.

- » **System Networks**—a single common owner over all sites. It may have been formed from a “top down” approach (mandated from the system leadership) or from a “bottom up” approach with sites coming together to derive network benefits.
- » **Collaborator Networks**—comprised of a number of separate owners that come together to advance oncology care. As there are many disparate ownership interests, the network is characterized by a high degree of formality and the relationship is defined through a legal affiliation agreement that outlines member participation.
- » **Hybrid Networks**—a combination of a system network plus non-owned or joint venture affiliate sites. Some hybrid networks fall closer to the system model, while some more closely resemble a collaborator model, but all hybrid networks have elements of both.

*Among the most advanced oncology networks, a dedicated, centralized governing council exists to ensure network goals are achieved.*

## Best Practices

**Governance through a Strong, Centralized Oncology Leadership Council.** Among the most advanced oncology networks, a dedicated, centralized governing council, an Oncology Leadership Council (OLC), exists to ensure network goals are achieved. The OLC is typically comprised of administrators, physicians and nurses working together to define goals, set direction and oversee the network. A key facet of the OLC is that it is structured organizationally at an equal or higher level than the individual network locations. In the context of a single-owner network, the OLC would be a system-wide governing body at the corporate level. This level of organizational structure enables the OLC to create and pursue goals across sites.

The functions of the OLC include developing and executing the oncology network strategic plan; overseeing network operations (likely in coordination with local administrative or functional areas such as nursing); creating and advancing clinical goals; coordinating research, clinical registry and teaching functions within the network; guiding cross-site investments in systems, technology and staff; and resolving any conflicts or issues that arise related to the network. The OLC, or the oncology network executive team, may also participate in broader system or hospital planning discussions to represent oncology needs and promote coordination essential to achieving broader goals.

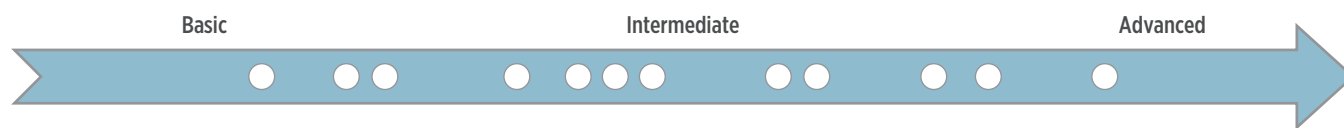
While the OLC may fit within the overall organization in several ways, the most successful councils have a direct reporting relationship to senior leadership. In many cases, this means reporting directly to the system CEO, COO or similar position.

The reporting structure and level within the broader organization are dependent on the network ownership model—networks comprised of multiple owners (e.g., collaboration or hybrid networks) achieve a direct reporting relationship and organizational visibility through more complex relationships than those in system networks; for example, a matrix reporting to CEOs/COOs of individual member institutions of the collaborative network.

**Authority Defined through an Oncology Network Charter.** Supporting the OLC is a defined network charter that details and clarifies the network’s organizational role, span of control, decision-making authority, reporting relationships, funding sources and other key elements of responsibility. It includes the network’s purpose, mission, goals, membership, organization, leadership, operations and other details. Embedded in the charter is a responsibility matrix that clearly delineates the authority of the network versus the reserved authority of the broader organization. The charter often addresses funding obligations, especially for oncology networks under collaborator ownership structures.

**A Dyadic Leadership Structure with an Administrative and Physician Leader.** A dyadic leadership model with an administrative leader (e.g., director of oncology services) and physician leader (e.g., oncology chief medical officer) is successful. A number of the networks have this model in place, though some have achieved this model through less formal physician roles.

## Exhibit 2: Organization and Governance Capability Maturity Levels



Key: ○ indicates study participant position

## Median Level of Development

While the best practices in organization and governance are derived from the advanced development of a few networks, the median level is more commonly one of intermediate development. The majority of networks have a subset of best practices in place or are challenged to advance the network structure due to broader organizational realities.

Network ownership heavily influences the degree of governance development. In system networks there is wide variability in governance structure. A few of the most advanced single-owner networks have OLCs; however, the majority lack a charter or definition of their authority. Collaborator networks exhibit more advanced degrees of governance required to coordinate the often-differing goals and directions of multiple owners. Regardless of ownership type and governance development, the vast majority of networks operate on an engaged basis—the sites actively participate in the network and adopt network efforts uniformly. In system networks, system leadership typically mandates participation from individual sites. In collaborator networks, participation is typically defined by the terms of the affiliate agreement. For the few networks that operate on a voluntary basis, adoption of network efforts is a greater challenge and a high degree of variation exists in network operations among the sites.

An important impediment to all networks is the challenge of managing competition between sites. As oncology services typically report volumes and financials through their operational sites, individual site leadership is sensitive to network efforts that may affect operational and financial results. While the goal

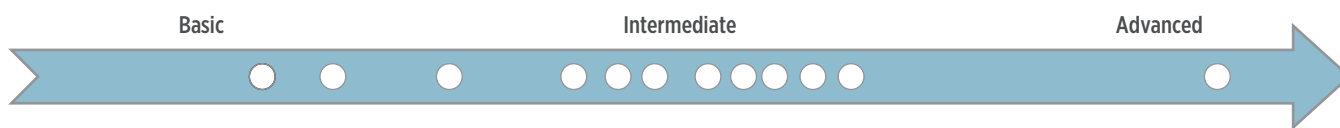
of the oncology network may be to ensure access to patient care close to home, developing distributed services may divert volume from historically large, central sites. This competition between sites to maintain and grow volume and financial performance challenges network cohesiveness. To some degree, competition within a network system can be managed at the system level. However, in collaborator networks where individual sites have disaggregated financials, competition can be of significant concern. As a result, most of these networks have formed across broader geographies in order to avoid direct competition between network sites.

## Systems and Resources

The systems and resources assessment considered the level of central support for network administration, registry, clinical trials, information technology and other support resources, such as project management. We also evaluated the financing mechanism in place to support the resource budgets and stability of funding.

The study found that the majority of oncology networks have achieved an intermediate maturity level with dedicated staff and infrastructure resources. (See Exhibit 3.) The resources in place may be information technology or staff roles to support network functions. For example, most networks apply a combination of IT systems and dedicated staff to support tumor registry and research clinical trials functions within the network. More advanced networks have a fully developed support system with a stable resource allocation to advance network goals and objectives.

**Exhibit 3: Systems and Resources Capability Maturity Levels**



Key: ○ indicates study participant position

*In response to the challenges of clinical care coordination and limited IT implementation at most networks, leading oncology networks have developed a tumor board coordinator.*

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## Best Practices

Leading cancer networks have developed a robust set of systems and dedicated resources supporting the network in four main areas: administrative support, oncology functional support (e.g., tumor registries, clinical research trials), information technology and financial resources.

**Dedicated Oncology Network Administrative Support Group.** All leading networks have a core network administration office, typically including an administrative leader (e.g., vice president of oncology services) and a team of administrative support staff. These staff positions may be less than a full-time equivalent (FTE) in many areas and maintain equally strong ties to system functional areas, such as marketing. The most common administrative staff positions supporting the leading networks are director/coordinator of network operations, marketing, decision support and finance. A select few leading networks have also developed a project management staff position to support the initiatives of the network.

**Dedicated Oncology Network Functional Support Staff.** Other network staff members are dedicated to supporting the functional areas of the oncology network. This includes a core set of tumor registrars—this function may be centralized into one office, but more commonly, it is a core group of registrars who are distributed across sites and coordinate efforts for a consistent approach to maintaining the registry. Regardless of location, these registrars have access to all clinical systems and use a single tumor-registry software application. This level of centralization creates standardization of clinical documentation across the network to support consistent registry entries. Deployment of network-level tumor registrars is materially enhanced by the use of a common EHR.

Leading networks have a centralized clinical trials staff, typically including a director of clinical trials or similar position and a team of clinical trials nurses. Due to the functional expertise required and the overall smaller scale of clinical trials research within most leading networks, the staff operates out of a centralized site with support for all clinical trials within the network. A key benefit of the central clinical trials function is increased patient participation, network participation in more studies, and increased research revenue and reputation. Where clinical trials administration is operated out of a central office, the network is better able to secure research grants, participate in studies and expand patient participation in trials.

In response to the challenges of clinical care coordination and limited IT implementation at most networks, leading oncology networks have developed a tumor board coordinator. This is typically a portion of an FTE position and may be spread over multiple staff to support the individual disease- or site-specific tumor boards. The tumor board coordinator supports the tumor board chair in developing the agenda, coordinates and collects materials for case presentations, facilitates distribution to participants, and ensures technology and cases are ready to present. The most successful networks maintain a central, secure, online repository for tumor board materials accessible to all participants.

## Use of Common Information Technology Systems

**Across All Sites.** In the area of IT resources, the leading oncology networks have both dedicated staff and electronic systems. Leading oncology networks may be distinguished by their increased dedication to developing EHR and common IT systems across network sites; for example, it is extremely rare that these networks would have disparate registry software.

Most have also implemented common systems within specific functional areas (e.g., all radiation oncology is on one system, while inpatient care is on another system). Their current efforts include continuing expansion of systems across functions and interfacing systems to increase the flow of information.

In addition to the IT systems and resources in place, leading networks set IT goals and strategic planning that span multiple years. The majority of strategic and IT goals support the development of a common EHR across all elements of oncology care. While multiple IT systems will continue to exist, leading oncology networks are bridging the gap with interfaces, health information exchange solutions and physician portals. Given the specialized needs of oncology, leading networks often focus on an oncology-specific EHR that supports tight integration with clinical modalities. With respect to IT systems, leading oncology networks recognize the immense opportunity to link real-time clinical EHR with the longitudinal tumor registry to research clinical outcomes and protocol effectiveness. In the future, this may represent a new area of clinical outcomes research as the databases are linked together, standardized and become more accessible.

**Stable Funding Sources for Network Goals and Initiatives.** Finally, leading networks have a stable funding model and budget to support centralized functions and network goals. This is accomplished in one of two ways: Network sites contribute to a common budget, or the system or owner allocates funding to the network. Stable network funding allows the oncology network to plan and implement goals and initiatives. The regular plan-

ning and budgeting cycle serves to encourage the development of plans over multiple years for major initiatives with some certainty that the goals of the plans can be achieved.

### Median Level of Development

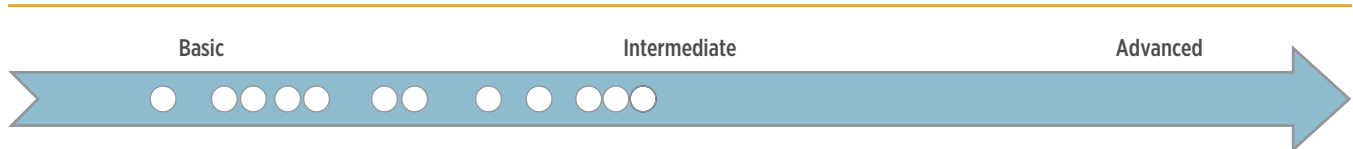
The majority of oncology networks have implemented some portion of the best practices described above. Much more commonly, the level of administrative support is limited by budget, functional staff resources are typically shared and IT resources are underdeveloped. All networks express a desire to move toward a more complete set of systems and resources and common EHR solutions; however, most lack the funding and organizational cohesiveness to implement desired staffing models or IT solutions.

### Clinical Care Coordination

To understand current levels of clinical care coordination within oncology networks, the study considered the degree to which sites follow common clinical protocols, apply a standard process of care, and coordinate services between providers and sites—both within the network and externally to referring and complementary providers.

Clinical care coordination is the least developed area for all organizations. The majority of oncology networks are currently at a basic maturity level. (See Exhibit 4.) Many have created initial goals in areas of clinical coordination and have a vision for achieving greater clinical care coordination through initiatives such as common protocols, shared information systems and patient portals. At the current level, clinical care coordination

**Exhibit 4: Clinical Care Coordination Capability Maturity Levels**



Key: ○ indicates study participant position

processes are largely manual, complex and time-consuming. Three networks are at an intermediate level of maturity. These networks have achieved a limited set of consistent care protocols and processes and decreased variation across care sites. The information technology infrastructure supporting these networks is more developed, which promotes the flow of information between providers, patients and care sites.

## Best Practices

### Standard Treatment Protocols and Care Processes

**Across All Sites.** Leading oncology networks ensure the patient receives consistent care and providers share information across the network. Best practices are in place in networks that have undertaken great effort to define and implement standard treatment protocols and care processes across all sites. Especially in networks with a highly independent medical staff, the challenge of reaching agreement on standard protocols is significant. Leading organizations have convened a core group of clinicians to set standards and work with fellow clinicians to support changing practice patterns. Protocol development is usually based on Quality Oncology Practice Initiative (QOPI) and NCI Community Cancer Centers Program (NCCCP) guidelines and adoption of agreed-upon practices. By applying standard treatment protocols and care processes, networks achieve consistent quality and smoothness of operations across sites with the goal of improved clinical outcomes and increased patient satisfaction. These networks continuously monitor compliance with the standard protocols, and in cases of a non-standard protocol, physician leadership evaluates appropriateness of the care and assesses the need for additional standard protocol development. Leading networks believe that achieving clinical care coordination and consistent outcomes positions them successfully for future quality-driven, coordinated care reimbursement models.

### Coordination of the Clinical Care Information Flow.

The most successful oncology networks have developed advanced coordination and communication among providers. Leading networks improve the flow of information between

providers by utilizing fewer, more robust systems with multiple access points. These include use of EHRs, physician portals and access through handheld devices. Due to the absence of necessary oncology-specific functionality in many leading enterprise EHR systems, coupled with the unique needs of oncology services, very few oncology services have implemented one EHR across medical oncology, radiation oncology, ambulatory care (infusion, lab and pathology), general ambulatory care and inpatient care.

To facilitate clinical information flow, leading networks have complemented information technology resources with a clinical coordinator staff position. The clinical coordinator serves as the central point to ensure information is gathered, cataloged, entered into IT systems and disseminated to appropriate members of the care team. An important function is to facilitate gathering information on referred patients prior to their first visit. This often entails multiple interactions with the patient, the referring physician and other providers to ensure historical clinical records are available to the oncologist for review prior to the first visit. The clinical records are often received in a mixture of media, including paper format (majority of the information) and CD or film (usually, prior diagnostic images). The clinical coordinator incorporates all of these sources into the central EHR—typically by scanning or uploading the information into a review-only format in the EHR. Clinical coordinators also facilitate the sharing of updates and patient status with referring physicians, who may not have access to the central EHR.

Leading networks expect the role of the clinical coordinator will continue to be essential well into the future. However, as the use of EHRs increases and health information exchanges (HIEs) develop, the role of the clinical coordinator will change. Their central role in ensuring smooth and consistent information flow both within the network and, in the future, to or from external providers (such as referring physicians), will ensure physicians have all the clinical information they need at their fingertips and that they include the patient's other care providers in the knowledge loop.

## *Leading networks improve the flow of information between providers by utilizing fewer, more robust systems with multiple access points.*

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**Adding Provider–Patient Information Flow to Clinical Care Delivery.** Leading networks have advanced the flow of information between providers and patients well ahead of normative practices. They believe engaging the patient as an active participant in their treatment is crucial to obtaining the best outcomes. Patient self-service, convenience and information access are valued and, as such, patient portals and nurse navigators have been developed to increase the flow of information between providers and patients.

The most robust patient portals facilitate provider-patient communication by allowing patients to schedule appointments, view diagnostic testing results or contact providers. Leading oncology networks are using patient portals to expand the information available on demand to patients and to explore ways to facilitate direct patient-to-provider communications.

Leading oncology networks have a clear and defined role for nurse navigators to serve a wide variety of care coordination and communication functions. As one network described their nurse navigators, they are the “glue” between the patient and the network—facilitating provider communication, creating the link to clinical trials and coordinating multidiscipline treatment options. Nurse navigators interface directly with patients to support complex appointment scheduling with a host of complementary services (e.g., social work, mental health counselors, prostheses, physical therapy). Throughout a patient’s treatment, the nurse navigator is in close contact with the patient and able to track the patient’s progress; at times, this enables the nurse navigator to identify a need for care before a patient requires more acute interventions. These nurse navigators often make the material difference in achieving personalized care within a complex oncology network setting. Leading networks have tumor-site-specific nurse navigators, often focused on high-volume service lines, such as breast cancer. This allows the navigator to specialize in the unique aspects of that particular cancer and remain attuned to patient and provider needs.

### Median Level of Development

Clinical care coordination is a focused area for development among many of the oncology networks interviewed. To date, the majority are in the process of establishing standard treatment protocols and care processes. Developing standard protocols is a major challenge, particularly within collaborator networks and those with highly independent physicians. Current initiatives are around building core physician leadership to develop standard treatment protocols and working with physicians and nurses to transition toward standard care processes.

Although there is a widely held belief that oncology networks have robust EHR capabilities and seamless electronic information flow, this is simply not the case. Very few have achieved the desired level of IT sophistication; the vast majority continue to operate in a largely paper-based care universe. The predominant methods of communication are fax, mail and CD transmission of medical information and radiology images. For those that have a clinical EHR, the majority continue to scan paper records and upload images and laboratory results into their systems in a read-only format (e.g., scanned pages). Given the predominance of paper-based, manual systems, it is no surprise that oncology networks have as a high priority increasing and expanding their EHR capabilities. To facilitate clinical care coordination and communication in the current paper-based environment, the majority of networks rely heavily on staff rather than IT system capabilities to coordinate care. As IT capabilities mature, future staffing levels may shift as the need for abstraction, clinical information coordination and referral management moves from manual processes to electronic, automated functions of a mature IT system. Given the current and near-term future capabilities of enterprise EHR solutions, leading oncology networks will live in an interfaced world, electronically exchanging clinical information between general enterprise EHR solutions and specialized oncology EHR solutions.

# Applying Best Practices to Advance Oncology Networks

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The type of ownership influences how best practices are applied to advance an oncology network. In the discussion below, we share thoughts on the likely impact of ownership on adopting best practices.

## Enhance System Networks

**Advancing Organization and Governance.** Systems are better positioned to develop a centralized governing council with clear and direct accountability for network goals and direction. The system can direct the formation of stronger governance and leadership than in other ownership models. Direct control over the network allows systems to define the administrative and physician leadership roles and hire appropriate staff to support network planning and coordination. The system can mediate the different interests of the individual sites and ensure leadership incentives support the network, rather than encourage competition between the network participants.

**Advancing Systems and Resources.** One key benefit of common ownership is that the system can allocate funding directly to support the oncology network, rather than requiring contributed support from each site. Within the system networks we interviewed, the majority are funded in this way. As part of the system, the oncology network competes for resources with other initiatives, such as other service line development and capital investments. This competition encourages the oncology network to conduct robust planning, define clear priorities, and articulate required investments and benefits.

**Advancing Clinical Care Coordination.** Systems have direct control over all sites of care, operations and resources, and thus greater ability to mandate care processes and monitor compliance in a highly coordinated fashion.

Systems can determine a single approach to developing a strong, central group of oncology physicians. In so doing, systems can adopt common clinical care protocols and processes more rapidly than in other ownership models. The system can ensure the network's organization and governance, as well as level of systems and resources dedicated to advancing care and achieving clinical care coordination goals.

## Enhance Collaborator Networks

**Advancing Organization and Governance.** Collaborator networks, driven by the need to balance various ownership interests, require stronger central governance models to coordinate the collective direction and initiatives. Within these networks, the OLC is responsible for defining administrative and physician leadership roles and hiring appropriate staff to support network planning and coordination. This is typically an independent function of the OLC with minimal direct influence from participating members. Collaborator networks require additional effort and attention to balance the market share competition between sites and ensure network strength.

**Advancing Systems and Resources.** Collaborator networks rely on funding contributions from each site to support network operations. The level of funding can be highly variable between sites and is typically determined by the leadership committee on an annual basis within the provisions of the affiliation agreement. The budget is based on the agreed-upon set of initiatives and resources required to support development and may be limited by the willingness of members to fund major initiatives. Typically these networks will require more advanced levels of systems (functional staff, IT) as is necessary to support the higher complexity of the operations within different hospitals and sites, though actual levels vary greatly.

*For collaborator networks, disparate ownership creates complex barriers to the free flow of clinical information and adoption of standard protocols.*

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**Advancing Clinical Care Coordination.** Collaborator networks are challenged to mandate the adoption of standard treatment protocols and care processes across sites. To address this area, some affiliation agreements define the level of required participation from each member. However, as each site still operates within its own broader organizational context, adopting common protocols requires complex, time-consuming processes facilitated by network leadership.

The development of one standard for the network requires a central guiding body comprised of both network leadership and site clinicians. Adding complexity to coordinating clinical care, collaborator networks typically have a broader set of IT systems, as each site has adopted the EHR of its own organization. The oncology network faces significant challenge and expense in developing systems (either IT interfaces or staff resources) that can facilitate information flow within the network.

For collaborator networks, disparate ownership creates complex barriers to the free flow of clinical information and adoption of standard protocols—namely through restrictions related to their broader organizations, such as nursing processes and IT systems. These networks will need to dedicate additional leadership time and network resources to mitigate these barriers, improve clinical care coordination, and demonstrate care and financial value.

### Enhance Hybrid Networks

**Advancing Organization and Governance.** Hybrid networks have wider variability in their governance models; however, management of the network is supported by a highly developed, central decision-making council. Similar to collaborator networks, hybrids benefit from strong administrative and physician leadership directed by the OLC. These leaders invest more effort to balance the competition within the network and ensure success overall.

**Advancing Systems and Resources.** Hybrid networks typically have a “lead system” plus collaborator sites. As such, the lead system is able to lead the development and dedication of the systems and resources supporting the network. Collaborator sites contribute a portion of the financial support to the network, but typically do not have direct resources (functional staff, IT systems) embedded into their sites. They rely on the lead system to develop and sustain the resources while contributing financially to ensure resources are available.

**Advancing Clinical Care Coordination.** Hybrid networks share the same challenges as collaborator networks when adopting standard treatment protocols and care processes across sites. The single-ownership sites reduce the variability to some degree and allow for direct control of adoption at a portion of sites. This bimodal structure allows the network to adopt clinical care protocols uniformly at a subset of sites, while others may take more time and effort to adopt.

In these networks, the physician organizations vary widely and influence the ability to adopt common protocols. Typically, they benefit from agreement on an overarching quality platform (e.g., NCI guidelines) initially as a basis to develop protocols that are more consistent over time. The majority of these networks also have multiple IT systems requiring time and expense to facilitate information flow through either IT interfaces or staff resources.

Similar to the collaborator networks, disparate ownership creates complex barriers to the free flow of clinical information and adoption of standard protocols. The network will need to dedicate additional leadership time and network resources to mitigating these barriers.

# Key Lessons

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In addition to the best practices, median levels of oncology network development and the implications ownership has on advancing the network, this study identifies eight lessons about the interplay between the three areas studied and potential priorities for future development.

## Governance Development Determines Network Strength

The prevalence of a strong decision-making and enforcement governing body is a determinant of oncology network success. Loosely affiliated networks are challenged to coordinate different interests and needs to advance oncology care and, therefore, a strong, central governing body is necessary for network advancement and maturity. The oncology network is also strengthened by significant investment to create a set of common network resources and policies. Within the network, the formal delineation of responsibilities among the governing body, individual sites and physicians, through a charter, contributes to success.

## Clinical Care Coordination Is Not as Prevalent as Many Perceive

Virtually every oncology network believes that the level of clinical care coordination occurring at other sites is significantly more comprehensive than is actually the case. The reality is that for the vast majority of oncology networks, clinical care coordination continues to represent the area of greatest challenge; progress to date has been slow. Only a few leading networks have implemented common care protocols across all sites, and where this has occurred, it includes only the core set of most commonly used protocols.

## Clinical Care Coordination Benefits from Strong Governance and Dedicated Resources

The current maturity levels and discussions with network leadership highlight the significant efforts required to achieve clinical care coordination. The study suggests that the degree

to which oncology network governance has developed as a strong central body, especially with engaged physician leadership and dedicated functional resources, materially affects how quickly clinical care protocols can be developed and adopted.

## Physician Leadership Is a Critical Element of Success

While not studied directly, the role of physicians in the oncology network is a central factor of network strength and development. The interviews highlighted the various roles and interaction points with physicians: Leading oncology networks engage physicians in a broad range of leadership and clinical care coordination efforts.

A few networks have identified the development of larger, core physician groups as a strategic priority. This may be either through direct employment of the majority of medical oncologists, radiation oncologists and oncology surgeons, or development of an independent, but aligned, core group of oncology professionals. The network recognizes the benefit of coordinating clinical care with one or a few larger physician groups.

## Advancing Oncology Networks—Eight Lessons

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| > Governance development determines network strength                                              |
| > Clinical care coordination is not as prevalent as many perceive                                 |
| > Clinical care coordination benefits from strong governance and dedicated resources              |
| > Physician leadership is a critical element of success                                           |
| > Paper still permeates clinical care documentation                                               |
| > IT is viewed as a critical enabler of improved patient care                                     |
| > Tumor boards remain mostly a locally focused forum                                              |
| > A vision for use of tumor registry and EHR information to support research is coming into focus |
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This is most likely to occur in the system network; however, the hybrid model can also facilitate movement toward a single oncology medical group. The driver for supporting development of a central group is to foster the adoption of consistent clinical protocols and quality standards across providers. With a strong core of physician leadership that can effect change in provider practice patterns across the network, development of common protocols occurs more rapidly and consistently. This reduces variability in protocols and improves quality outcomes.

Physician leaders participating in the OLC should be physicians who have a broad base of respect and support from their peers in order to serve as a strong link between the network and physicians. These physician leaders must develop relationships with all network sites and directly support the clinical care coordination efforts of the network, usually through participation in select committees of the network.

In one network, each site has a leadership council that coordinates with the central OLC. In this instance, the network has three dedicated physicians who serve on the site councils as well as the central OLC. This physician leadership crossover enables consistent physician participation and development support across the network.

### Paper Still Permeates Clinical Care Documentation

While there exists a common vision to move to a single oncology EHR, the reality is that the majority of care and communication between providers continues to occur on paper. One reason so few have adopted a single EHR is the limitations of current EHR systems. No vendor has developed a comprehensive, mature oncology EHR platform which is fully integrated with an enterprise EHR, thus requiring networks to piece together different systems to support medical oncology, radiation oncology, inpatient care and tumor registry functions. In the rare cases where a single oncology EHR exists today, it is most

commonly achieved through niche solutions tied to the treatment modalities and is only partially integrated with the enterprise EHR in use by the hospital. Throughout the interviews, the networks expressed the goal of developing a unified oncology EHR among the sites, interfaced to the enterprise EHRs, and leveraging health information exchange to connect external providers (e.g., referring physicians).

### Information Technology Is Viewed as a Critical Enabler of Improved Patient Care

When asked about goals for the oncology network going forward, every network included IT as an important initiative needed to advance clinical care coordination and outcomes reporting. As such, IT is included within the planning and budgeting process. In tandem with goals and budgeting, the network leadership is working with physicians to evaluate and build consensus for adoption of common systems and data exchange. A secondary IT goal is to develop basic patient portals to promote greater involvement of patients in their care, allowing for appointment scheduling, test results review and electronic communication between patients and care providers.

### Tumor Boards Remain Mostly a Locally Focused Forum

Tumor boards are most commonly location-specific and organized by tumor site. Only a few leading networks are conducting tumor boards through videoconferencing across locations within the network. The vast majority of tumor boards are supported by dedicated staff resources that prepare and distribute materials. Where videoconferencing is utilized, the relevant records and images are communicated either in advance of the tumor board session or are made available through electronic sharing and not directly via the videoconferencing session.

*While there exists a common vision to move to a single oncology EHR, the reality is that the majority of care and communication between providers continues to occur on paper.*

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### A Vision for Use of Tumor Registry and EHR Information to Support Research Is Coming into Focus

As the oncology networks have centralized tumor registry functions and moved toward more facile electronic information sharing, a new vision for using this information for research is being explored. For many, the EHR represents current clinical information while the tumor registry offers longitudinal clinical data on a broad base of oncology patients. Leading networks are considering how information from the EHR may be directly loaded into the registry, rather than being entered manually. As these two resources get closer and increase in consistent entry and tracking of clinical care, analytics and use of clinical data warehouses containing data from the disparate clinical information repositories present a great opportunity for research. Protocol effectiveness and outcomes of care processes are the most commonly identified opportunities for initial development. Oncology networks are eager to learn if the common clinical care protocols they are implementing materially affect long-term outcomes for patients. We expect this area to develop slowly over the next decade, as there is a long path to implementing the EHR, connecting the EHR and tumor registry, building the relevant clinical data warehouses, and ultimately standardizing clinical practices and codification to the point at which the data can be useful in research.

## Summary

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Today's oncology networks serve as an important resource to meet the needs of cancer patients and the growing base of cancer survivors. They provide coordinated and high-quality care locally, easing the burden on patients to access care and improving clinical outcomes. Over the past decade, the major focus of oncology networks has been on forming the organization and developing basic resources. To date, little progress has been made in coordinating clinical care protocols and standardizing treatment processes across the network. Leading networks see advancing clinical care coordination as the next important area for network development and are creating multiyear plans and budgets to support this goal. We expect many networks to address the key challenges and barriers to coordinating care over the next few years by engaging physicians; developing dedicated staff; and investing in IT systems, interfaces and health information exchange. Achievement of clinical care coordination will significantly improve the value of the networks and prepare the organization for the future healthcare environment. ❖

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## ACKNOWLEDGMENTS

The authors would like to thank Allison Cuff Shimooka, Oncology Roundtable, and Samaria Cate, Kurt Salmon, for their assistance.

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