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Graft 2001; 4; 403

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Transplant Infrastructure

Art Thomson

In transplantation, infrastructure exists on 2 levels—as it relates to an individual *transplant program*, or as it relates to a *transplant center* serving 2 or more transplant programs.

Background/Introduction

Infrastructure is the underlying foundation or basic framework of a system and includes the resources required for an activity. In transplantation, infrastructure exists on 2 levels—as it relates to an individual *transplant program* or as it relates to a *transplant center* serving 2 or more transplant programs. Although there are over 250 transplant programs in the United States, and possibly just as many different models for their organization, there are certain significant points regarding infrastructure that are often overlooked in the planning process:

- Infrastructure is critical to the success of transplant programs.
- Internal and external factors influence the type of infrastructure.
- Use of essential building blocks will result in a stronger foundation.
- There is a need to develop relationships outside the infrastructure.

This article examines key issues in the development of an infrastructure at the Cleveland Clinic Transplant Center.

Importance of Infrastructure

An effective infrastructure is critical to the success of transplant programs for several reasons. First, it facilitates strategic planning, the importance of which is well documented. The contribution infrastructure makes is that it gives responsibility for strategic planning to the appropriate individuals in the organization. It provides a forum for bringing those individuals together to conduct strategic planning activities and serves as a vehicle to communicate such plans to the organization's leadership.

Infrastructure also supports the growth and development of transplant programs. An effective infra-

structure assures that resources are focused on the distinct needs of the transplant programs and is important when considering new services or new personnel (e.g., will such additions support the growth and development of a transplant program?).

There are certain events, such as the loss of key personnel, which have the potential to severely debilitate, or even close, a transplant program. An effective infrastructure can help minimize the risk of interruptions in the delivery of patient care. Infrastructure also increases efficiency, optimizes the allocation of resources, fosters educational and research endeavors, helps assure that we meet our regulatory and reporting requirements, and enhances marketing and managed care opportunities. Finally, the infrastructure serves as an internal “watchdog,” necessary because transplantation is different from other medical and surgical services, operating by special rules that require close monitoring.

Internal and External Factors Influence Infrastructure

The type of infrastructure in place is influenced by internal (institutional) and external (environmental) factors.

Institutional factors that have a bearing on infrastructure include the type of physician practice and hospital, volume of clinical activity, and the number of transplant programs. For instance, the Cleveland Clinic is a group practice of more than 1000 salaried physicians, practicing only at the Cleveland Clinic Foundation (CCF) and admitting patients only at this hospital. This has a direct bearing on the infrastructure of this institution.

Second, the level of institutional commitment is important. What has been the organization's record of accomplishment regarding transplantation? Does it have the attention of the leadership? Is leadership willing to increase its investment?

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Other institutional factors include clinical activity, the number of transplant programs, and educational/academic productivity.

Finally, financial considerations will affect infrastructure. Does revenue flow through the center? Is it a cost center only? How well do we understand costs? Or are we structuring in a certain way to understand costs better?

Similarly, environmental factors that influence infrastructure are geographic area, competition, and the level of managed care penetration in the area.

Building Blocks of an Effective Infrastructure

The use of 7 building blocks will result in a stronger foundation and more effective infrastructure. Whether you are initiating a transplant program or managing an existing one, attention to these key building blocks is critical.

The first is *strong* leadership. Leadership takes many forms and occurs at several levels. The typical leadership positions in a transplant center are transplant center director, program directors for each transplant program, medical and surgical directors for each program, director of the tissue typing laboratory, transplant administrator, and various other managers and supervisors.

The transplant center director, usually a physician, should be the team's visionary. He or she must keep the big picture in mind and remain accountable for all center activities. The director represents the institution in interactions with the United Network for Organ Sharing (UNOS), the local organ procurement organization, and other transplant-related organizations. He or she also sometimes represents the program in interactions with hospital administration. Each transplant program is structured with a program director (again, a physician) who has overall accountability for that specific program, both within the institution and to UNOS. Generally, there is also a medical director and surgical director for each transplant program, who may or may not be the UNOS primary physician and primary surgeon. These are two key personnel positions required by UNOS who must meet specific training and experience requirements for that type of transplant.

The transplant administrator reports to the director and is also accountable to all of the programs. The administrator should be an advocate for each of the transplant programs to ensure needs such as

space and personnel are met. The administrator also has financial, personnel, and operational responsibilities; ensures compliance with reporting and regulatory requirements, standards, and policies; optimizes marketing and managed care opportunities; supports research and educational efforts; oversees data collection and reporting; and initiates cost management efforts. The administrator implements, mediates, and guards the infrastructure, all of which requires good listening skills.

The second building block of an effective infrastructure is *qualified, experienced personnel*. Although UNOS only has established background and training requirements for the primary physician and primary surgeon, it has also established standards for financial coordinators and social services. For other members of the team, educational and experience requirements are often mandated by Human Resources. Besides establishing standards of qualification and experience, it is important to adhere to the standards. This is most often an issue with our transplant coordinators. At the Cleveland Clinic, the minimum requirements are a BSN and 5 years of experience. Often there is pressure from team members to fill openings quickly and to forego the educational or experience requirements. However, there are long-term consequences to lowering the standards, including jeopardizing the rating and salary levels of these positions.

The next essential building block is a *defined, hierarchical structure*. The first level of structure is the position the center has within the institution. This can be somewhat complex, especially in cases where a center is imposed over a traditional department structure. The second level of structure is the transplant center itself. A typical structure includes a leadership-governing group, the transplant center director, program directors, medical and surgical directors, other physicians and surgeons, and non-MD support personnel. It is important that everyone knows to whom he or she reports. Other members of the transplant team—coordinators, social workers, procurement personnel, financial coordinators, data entry personnel, administrative staff—report to the medical and surgical directors for their clinical duties and may also report to the transplant administrator. The size of the transplant team will vary, depending on the level of clinical activity, including the number of patients evaluated and on

the waiting list, transplanted, and actively being followed posttransplant. In the case of transplant support personnel, their roles differ greatly from their peers in other departments. Although they direct their efforts toward one type of transplant, they greatly benefit by interaction with members of other teams.

The leadership group—called the Transplant Center Executive Committee at the Cleveland Clinic—is chaired by the transplant center director and includes the program directors for each of the transplant programs. The committee meets as frequently as once each month but no less than once each quarter, is responsible for strategic planning and quality assurance activities, and serves as a steering committee for transplant center activities.

The services typically provided in a transplant center include

- Inpatient Unit: abdominal, thoracic, and/or bone marrow; pre- and posttransplant patients; nurses specially trained in immunosuppressive care of patients; provides continuity of care (overall pre- and posttransplant management of patients); facilitates collaboration and education.
- Outpatient Clinics: pre- and posttransplant; “one-stop shopping” for patients; facilitates team coordination and patient education.
- Tissue Typing: hospital-based or independent (Medicare); pretransplant testing (assess patient’s immunologic response); posttransplant testing (assess problems that might occur posttransplant); certification by ASHI, CLIA, UNOS, NMDP, JCAHO.
- Statistics/Research: special expertise; data entry and data management; research and statistical analysis; overseeing reporting; a shared service.
- Administration: headquarters; membership and compliance with UNOS policies; listing patients liaison with the Organ Procurement Organization (OPO); cost management; administrative support; customer service.
- Organ and Tissue Donation: transplant centers should establish the gold standard for effective protocols for donation; the Health Care Financing Administration (HCFA) requires that all deaths be referred to the OPO for evaluation.

The next building block of an effective infrastructure is an emphasis on *communication*. The transplant center serves as a clearinghouse for information from HCFA, UNOS, and others. It is a focal point for receiving and distributing communications to those involved in transplantation. The Cleveland Clinic faces a situation common to many centers—about 125 physicians and support personnel are members of the transplant programs but are dispersed throughout the campus. It is therefore important to communicate with them on a regular basis to keep them abreast of developments and to make them feel a part of the center. For physicians and support personnel, e-mail has emerged as the preferred choice for communication. In a busy environment, communication is easy to forego, but lack of it can be costly.

It is important to have a reliable system in place for the extensive amount of data collected and reported in transplantation. The data are very important for *statistical purposes*, which are easier to accomplish when data are available and accessible to all in a single, uniform database.

It is also very important to have the capability to report *indicators of activity*. One of the biggest impediments to the transplant center is the ability (or lack thereof) to identify transplant patients in the hospital computing systems, such as billing, registration, and cost accounting. Traditionally, when people think of transplant, they often think only of phase III (inpatient admission for transplant). However, there are other phases of activity as well, including the evaluation (phase I), waiting period for transplant (phase II), and posttransplant follow-up (phase IV). Revenue is associated with each phase, as are expenses, and an essential component of cost accounting is the ability to match revenue and expenses appropriately. The ability to quantify and report activity is important not only for cost accounting but also to secure additional resources.

Finally, the last building block of an effective infrastructure is *accessibility/responsiveness*. Leaders should be approachable and responsive to their staff, and data need to be easily accessible.

The final point regarding infrastructure is the need to develop fundamental relationships outside the transplant infrastructure. It is essential to develop and cultivate good working relationships with representatives of many departments throughout

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the hospital to address the special needs inherent to transplantation. This is best accomplished with a dedicated transplant contact in the following areas:

- **Human Resources:** to provide adequate compensation for unique demands placed upon transplant personnel (including 24 hours a day, 7 days a week on-call responsibilities); recruiting challenges for some positions.
- **Finance:** to maximize reimbursement by ensuring that appropriate activity and costs are documented and reported on Medicare and Medicaid cost reports.
- **Billing:** to assure that bills are generated per the terms of managed care contracts, that collections are made, and that a methodology is in place for applying payments received to departments providing services.
- **Medicine/Surgery and Hospital Administration:** to maintain a high visibility for transplantation; provide education regarding uniqueness of transplantation; physician recruitment; clinical issues.
- **Marketing/PR:** to develop collateral materials, Web site, annual reports; relationship marketing; to support organ, tissue, and eye donation initiatives.
- **Managed Care/Payor Relations:** to ensure input on contractual language and pricing; build relationships with case managers and medical directors; facilitate resolution of contract implementation issues.
- **Government Affairs:** to provide input regarding national, state, and local legislative initiatives
- **Information Technology:** to meet/maintain hardware, software needs.
- **Other clinical divisions,** such as anesthesiology, laboratory medicine, and radiology.

There are also relationships outside the institution that are quite important and that need to be cultivated. These include

- **UNOS:** certification of key personnel; registration of personnel in UNOS database; participation in national and regional meetings; listing of patients and mandated data reporting; research and other services provided by

UNOS; providing input on policies circulating for public comment.

- **State Consortium:** (some states) collaboration with other centers; quality assurance initiatives.
- **OPO:** input regarding organ allocation policies; support of hospital development and public education efforts; input on medical advisory issues; participation on board and committees.
- **Managed Care:** relationships with case managers and medical directors; participation in regional and national networks.
- **Patient Support Groups:** patient education; social and financial support.
- **Nonprofit organizations,** such as American Liver Foundation, National Kidney Foundation, and National Marrow Donor Program.

Marketing Your Infrastructure

A final point to make is the importance of marketing the infrastructure. This includes internal and external marketing. Internally, marketing begins with a new employee. He or she should be oriented to the transplant center structure and services provided within. Internal marketing continues through regular visibility for the center throughout the institution with Web pages, newsletters, and so on, designed to combat the "I didn't even know we had a transplant center" syndrome among employees.

External marketing targets patients and families, referring physicians, and managed care companies. There is a growing interest in transplant infrastructure, as evidenced by an increasing number of managed care and insurance company questions on this topic. The transplant center Web site, annual report, and brochures are all tools for external marketing.

Conclusion

In the current healthcare environment, it is a challenge to devote time and resources to planning. However, careful attention to the development of an effective transplant infrastructure will produce a number of benefits. These include adequate support for the growth and development of transplant programs, an institutional commitment to transplantation, and excellent service to our customer groups of patients, referring physicians, and managed care and insurance companies.