Cancer Economics

THE EVOLVING ARENA OF BONE MARROW/PERIPHERAL BLOOD STEM CELL TRANSPLANTATION

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Oncology practice and economic realities are inexorably linked today. Developments in cancer economics are explored in this regular feature.

Introduction

The bone marrow/peripheral blood stem cell transplantation (BMT/PBSCT) industry represents a microcosm of the hematology/oncology field within our nation’s community and academic medical centers (AMCs). It would be a challenge to find another health care arena where the collision of the art, business, and science of medicine is more clearly evident. For AMCs, failure to reconcile these three areas internally may lead to failure to effectively compete externally. As a prelude to understanding what is occurring in the BMT/PBSCT arena specifically, one must understand the changes occurring in the health care industry in general.

Drivers Transforming Health Care

A number of political, economic, and clinical drivers are expediting the restructuring of the financing system of the US medical industry. It is important to note that the strength of these drivers depends on many intervening variables such as regional politics, geographic coverage, population demographics, psychographics, health industry density, etc. From the provider perspective, the interaction of these variables presents a challenge to efficiently and effectively managing patient care. In these turbulent times, the quest for immediate survival rather than for long-term prosperity often takes precedence in decision making. Briefly, key drivers of health care transformation include the following: managed care; legislative and regulatory measures; new technologies, medicines, and procedures; competition; and consumer/employer activism.

Managed Care

The evolution of this industry from managing cost to managing disease is progressing, albeit very slowly. This rate of evolution reflects the instability within the managed care industry that, by current design, focuses mainly on short-term profits and growth of market share as opposed to improved product/service quality and patient/provider satisfaction. Indeed, we have seen in recent months the consequence of this thinking as managed care organizations attempt to cover shrinking margins by imposing large premium increases on employers and subscribers. For example, the health benefits committee of the California Public Employees Retirement System (CALPERS) withheld its vote on Kaiser Permanente’s demand for a 12% rate hike, saying “members, employers, and taxpayers cannot afford the huge financial jolt in one year.” (Wall Street Journal, April 14, 1998.) It should be noted that CALPERS’ HMO rates are watched closely by other employers across the country. Undoubtedly, increasing consolidation, new forms of competition, and provider cognizance of new clinical services will drive further change but with potentially great disruption for providers and patients alike.

Legislation, Regulation, and Reimbursement

In order to contain national health care expenditures to approximately 13.6% (over $1 trillion) of the gross domestic product, both federal and state governments are controlling expenditures through a variety of legislative and regulatory measures. The intent of such measures is to support the development of certain health care delivery systems and attempt to directly influence provider behavior. However, it is important not to underestimate the ripple effect of sector-specific initiatives on all other health care sectors. Thus, adoption of a broader perspective is required to better understand and anticipate changes affecting the academic, community, and proprietary sectors of the health care industry. Current proposed legislation and regulation would affect many areas, including expansion of managed Medicare and Medicaid programs, revision of ICD-9 coding system, transformation of private practice medicine, reductions or changes in pharmaceutical reimbursement, and creation of an ambulatory prospective payment system. Such reforms will eventually impact all aspects of the delivery of health care regardless and irrespective of coverage or class.

New Technologies, Medicines, and Procedures

These are perhaps the most important drivers in changing the practice, venue, and cost of health care. Change of this nature has the potential to influence the rise and fall of various provider types. Thus, the rate of adoption is sometimes driven as much by profit as by demonstrable clinical outcomes. However, failure to adopt new technologies, medicines, and procedures may put provider market share at risk and may create possible negative perceptions of service quality.

Regulation and reimbursement rarely keep up with the advent of new technologies, medicines, and procedures. Patient demand for new diagnostic or therapeutic interventions has thrown traditional relationships among providers, payers, and employers into confusion and, in some cases, into an adversarial state. For those providers trying to advance progress in medicine, this places yet another obstacle in the path to obtaining coverage and acceptance for new technologies. Additionally, results of prospective, randomized clinical trials to support the use of dose-intensive therapy portend further fluctuations in contracting methodology and service delivery on the part of both insurers and providers alike. This is of particular note for a heavily protocol-driven field such as BMT/PBSCT.
Competition

Innovation is frequently fostered by the fact that financial rewards are often commensurate with risk. Whether this is fair or just can be debated forever. The fact of the matter is that a vacuum is created if demand is great enough or if profits are attractive enough. As with every human endeavor, including medicine, an entrepreneur will inevitably arise to fill any such vacuum. It is important to note that this entrepreneur can take the form of a hospital, practitioner, AMC, health system, or other proprietary concern. Failure to be sensitive, if not responsive, to this aspect of the marketplace could lead to significant loss of volume and revenue.

As new technologies, medicines, and procedures evolve, we find that many are quickly diffusing to the community hospital or ambulatory service level. This increases the level of competition for overall patient volume. Such patients can be defined by cancer site and/or procedure. This can result in a "cherry picking" strategy that is intended to directly capture those most profitable patients regardless of the larger health care picture of a given population. The remaining financially disenfranchised patient groups are all too often left to traditional health care institutions such as AMCs.

Consumer and Employer Activism

A response to holding both payers and providers to higher levels of accountability is evidenced by the increasing demand for demonstrable clinical outcomes. While this brings a new level of accountability to the payer, it has resulted in an extremely heated debate over understanding what such data and information really convey. Interestingly, this activism appears to be driving managed care organizations to a more customer-sensitive stance in order to attract and retain membership.

While these and other drivers are broadly impacting health care, their effect appears to be particularly acute on the BMT/PBSCT field.

State of the BMT/PBSCT Industry


The transplant field has undergone radical transformation within the past three to five years. As indicated previously, financial and service delivery systems often fail to adequately keep up with clinical advances and developments. Thomas A. Paivanas & Associates periodically surveys the BMT/PBSCT industry in response to client and organizational requests. Currently, over two dozen academic- and community-based health care providers have provided operational and financial information for this survey. Areas of focus included pricing, contracting methodology, revenue and reimbursement streams, provider productivity, and the interface of clinical, financial, and operational systems. Additional information and comments from several large payer and proprietary providers have also been included. The following key observations and findings are noted.

Demand and Capacity

National and regional (eg, Florida) demographics portend an increasing number of cancer cases tempered by an overall slight reduction in cancer incidence rate. A 16% increase in the cancer patient base is predicted, based on the aging of the US population. This reflects an approximately 30% projected rise in spending on cancer (to $323 billion) as a percentage of total health care expenditures.

It is difficult to precisely estimate the generic demand for BMT/PBSCT as clinical indications continue to expand or come into question. However, a general rule of thumb to be considered is 3.75 "transplants" per 100,000 population. Correspondingly, the nation’s transplant capacity, while continuing to fluctuate, is perceived to be as follows:

- 25% to 50% shortage for allogeneic-matched unrelated transplants
- at equilibrium for allogeneic-matched related transplants
- 25% to 50% surplus for autologous transplants

However, a significant and growing mitigating factor in determining market saturation is geography. As transplants continue to move to an outpatient venue, the demand for more regional availability and access appears to be increasing.

Industry observers suggest that within the next several years, the venue for autologous transplant activity will continue to shift.

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<td>AMC</td>
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<td>Tertiary hospital</td>
<td>50%</td>
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<td>Community/proprietary setting</td>
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Similarly, industry observers suggest that within the next several years, the venue for allogeneic transplant activity will also shift.

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<tr>
<td>AMC</td>
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<td>40%</td>
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<tr>
<td>Tertiary hospital</td>
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<td>Community/proprietary setting</td>
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However, the window of opportunity for new BMT/PBSCT programs to successfully meet unmet demand may be closing. With a saturated market/capacity in many parts of the country, it can be concluded that this opportunity has less than a two-year time frame. After that point, based on our observations and experience in the health care marketplace, an intense period of "rotation correction" will occur. This period will be defined by increasingly intense competition not only for patients, but also for payer contracts, funded protocols, research dollars, and medical intellectual capital. The drivers of this rotational correction appear to be:

- Foundation for the Accreditation of Hematopoietic Cell Therapy (FAHCT) accreditation, coupled with potential of FDA monitoring
Increasing levels of contracting sophistication on the parts of payers and providers

- Payer demand for networked programs
- Demand for more inclusive product/service bundles
- Increasing protocol sophistication
- Consolidation of managed care organizations and corresponding demand for regional and national Centers of Excellence
- Consumer and employer activism
- Financial viability increasingly driven by volume and outcome

Until recently, BMT/PBSCT programs have delivered care in a predominantly inpatient environment. Successful programs today are those committed to creating a true regional referral center, driven to compete for managed care global contracts against other strong local and national competitors, and constantly seeking out opportunities to improve outcomes and lower costs.

Managing the BMT/PBSCT Market

Medical Intellectual Capital

A significant number of BMT/PBSCT programs across the United States appear to fall short of the minimum patient volume required to remain viable and to provide quality patient care (Table). The primary reasons for lapsed BMT/PBSCT programs is the instability of physician leadership and lack of institutional commitment and capital. Apart from cost, one of the top concerns of managed care providers is the stability in the provider environment or turnover rate of medical intellectual capital. Stable physician leadership is essential for effective clinical and financial operations of BMT/PBSCT programs. Large, nationally oriented plans are increasingly requiring periodic program "re-certification," based in part on the demonstrable knowledge and experience of the key physician leaders.

A number of factors are contributing to physician turnover, especially in AMC BMT/PBSCT programs. The leading factors include:

- Aggressive recruitment by other academic programs
- Frustration with current political and bureaucratic environment
- Desire to direct and develop own program (community or AMC)
- More lucrative professional opportunities
- Restricted resource availability for clinical and research activities

Nationally, managed care companies are increasingly attempting to regionalize certain low-volume, high-cost bundles of services in an effort to optimize both quality and profit. This directly translates into restrictions imposed on patient access to locally provided tertiary care services. As more and more plans move toward establishing these regional "Centers of Excellence," physician leadership will play an increasingly important role in securing and maintaining the managed care contract.

<table>
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<th>Estimate of Lapsed BMT/PBSCT Programs in the United States</th>
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<tr>
<td>500</td>
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<td>23.0%</td>
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ACCC = Association of Community Cancer Centers


The Payer Perspective

Centers of Excellence ostensibly provide higher quality of care; however, they frequently impose restrictions on patient access to locally provided tertiary care services. The exception to this trend appears to be for autologous PBSCT for early-stage breast cancer. In response to patient demand for local geographic access, some major plans may contract with more local programs for site-specific cancer procedures. Payers are also driving more sophisticated contracting methodologies for a variety of site-specific or procedure-specific therapies. While this approach may better reward providers for quality and cost, it also allows for payers to split up or decentralize contracts. Differentiation by cancer site or protocol is a reflection of the increasing sophistication of both payer and provider. Managing the entire continuum of care for patients has been identified by providers as the best way to control service appropriateness and cost. Fueled by capitation and case-rate contracting, provider vendors may need to evolve into disease management partners.

Payer dissatisfaction with BMT/PBSCT programs appears to center around the following provider behaviors:

- Unsophisticated information and communication on a per-patient basis
- Lack of information to evaluate operational efficiency and cost effectiveness
Managed care illiteracy

Adversarial approach to contract management

Presumptive authorization by physician providers for changes in protocols

Lack of key information to evaluate program quality

While BMT/PBSCTs are disproportionately costly on a per-patient basis relative to their volume, they account for only a modest percentage of all oncology and health care expenditures. However, in the absence of any meaningful quality or outcome data, contracting decisions default to that which can be measured, which is cost.

While the BMT/PBSCT survey indicated that an average institution has approximately 27 different payer contracts, payers may have 10 to 15 times that number of provider contracts, making approval and decision making difficult at best. Without exception, the largest managed care plans have dedicated staff at the national level to specifically direct and manage transplant contracting.


Over the past three to five years, a number of external environmental forces have contributed to the transformation of BMT/PBSCT programs. These forces will continue to have a great deal of relevance in determining the fate and fortune of BMT/PBSCT programs, especially in the AMC setting. Often cited as major threats to BMT/PBSCT program integrity were:

- Changing reimbursement for basic clinical services
- Inability to effect meaningful cost analysis and cost control
- Diminishing funding for research and development
- Lack of support for translational research
- Inadequate funding for academic-related endeavors
- Increasing competition for patients from community and proprietary providers
- Inability to effectively compete for managed care contracts on price, global pricing, ease of contract management, and patient satisfaction
- Increasing competition for medical intellectual capital
- Inability to demonstrate differential quality of care to payers, employers and patients
- Inability to create compelling clinical/cost arguments with payers and employers

The impact of many of these external forces is exacerbated by internal environmental conditions often found in AMCs. Most often cited were:

- Prevalence of "feudal or caste" academic political system
- Failure to reconcile research, academic, and clinical missions into a coherent business mission
- Failure to qualify and then quantify BMT/PBSCT programmatic mission into quality, volume, and bottom-line objectives
- Failure to enfranchise all providers into developing programmatic goals and objectives
- Failure to create a provider risk/reward system that strongly motivates timely realization of goals and objectives
- Failure to fully empower divisional or program leadership to effect organizational re-engineering
- Failure to deploy assets realistically, adequately, and expeditiously
- Failure to elevate business goals and objectives over political ones

Clearly, AMC BMT/PBSCT programs are struggling to compete not only with external providers, but also internally with allied academic services.

The Moffitt Cancer Center Example

As discussed previously, a number of environmental forces are working to transform delivery of medicine both in the academic and community hospital sectors. Moffitt Cancer Center’s (MCC) BMT/PBSCT program offers a laboratory to study not only the art and science of the practice of oncologic medicine, but also the business of the delivery of cancer care in a BMT/PBSCT program. MCC has approached the opportunities and threats facing the BMT/PBSCT industry with urgency and concern.

In 1995, MCC recognized that the payer industry was dramatically affecting the manner in which BMT/PBSCTs/PBSCTs were being financed and where they were being delivered. Many managed care organizations were rapidly moving to an Exclusive Center of Excellence concept for the delivery and financing of these resource-intensive and expensive procedures. It was quickly recognized that in order to be competitive and a major force in these national networks, significant efforts would need to be made to position the BMT/PBSCT program with large national payers, to develop a method for global contracting of these agreements to include both physician and facility services, and to create a closer physician and hospital partnership that would ultimately be capable of sharing risk and reward. Critical to this process was the recognition that institutional and physician behavior would need to be aligned to optimally achieve stated quality, volume, and bottom-line objectives.
The ideal outcome would be reflected in an internally successful program that achieved partnership arrangements with sophisticated national payers. To date, these efforts have resulted in relationships with four national Centers of Excellence networks operated by some of the country’s largest payers. Additionally, numerous other national agreements are in various stages of negotiation. These agreements have provided one-stop shopping for the payers that is capable of delivering both physician and facility services in a global reimbursement arrangement. Most importantly, payers indicate that the MCC BMT/PBSCT program has delivered real value and quality to their networks and their customers. Success has been achieved only through collaboration and alignment of programmatic goals and objectives between MCC senior management and physician leadership within the BMT/PBSCT program.

**Preliminary Recommendations for Success**

Whereas every program environment differs, a number of themes and concepts observed from those successful BMT/PBSCT programs are worth further exploration and consideration:

- **Invest in an intellectual partnership**: Aggressively pursue payer partnerships as opposed to traditional subcontracting or vendor relationships. Use this as the basis for collaborating on internal economic and clinical educational initiatives in order to facilitate network and Centers of Excellence development.

- **Employ informed decision making**: Integrate clinical and economic data, and effect timely communication to medical and administrative decision makers. Without meaningful data and information, success is not possible.

- **Establish a strategic business unit**: Reorganize the BMT/PBSCT program into a defined, self-governed business unit with dedicated administrative, medical, and clinical personnel. Employ a scientific business planning process to governance and operations.

- **Implement a provider risk/reward system**: Exploration of provider gainsharing arrangement to rebalance revenue and expense streams is critical.

- **Nurture medical intellectual capital**: Promoting physician satisfaction and stability is essential for program growth and development.

- **Commit to establishing a true Center of Excellence**: This commitment involves the following:
  - Expand the BMT/PBSCT product/service bundle to more fully embrace continuum of care
  - Recognize that the community provider network is a core "distribution" system for new patients
  - Establish a seamless, "one-stop shopping" approach to contracting that includes both facility and physician services
  - Create a true partnership with large national managed care organizations that brings value to both provider and payer

It is an absolute certainty that BMT/PBSCT products and services delivered today will be different from those delivered two to three years from now. This transformation will be driven by changes in government reimbursement, consolidation in the managed care and provider industries, and new advances in technology, medicine, and procedures. These factors, coupled with pending legislative and regulatory reform, may lead to a consolidated, more competitive BMT/PBSCT industry in the near future. It is critical for BMT/PBSCT programs to plan for these changes today.

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**References**


