Healthcare Equipment Leasing:
U.S. Market Dynamics and Outlook
2005-2007

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INTRODUCTION

Objectives

- The primary objectives guiding this new study of the healthcare equipment leasing market have been consistent with the 2003 report:
  
  1. Measure and characterize the U.S. healthcare equipment leasing market.
  2. Identify trends impacting lease financing utilization.
  3. Evaluate the leasing practices and needs of healthcare providers and equipment vendors.
  4. Examine the leasing competitive environment.
  5. Forecast the U.S. healthcare equipment leasing market and pinpoint the requirements for leasing company success.

Methodology

- These work steps have been taken in the conduct of this new study:
  
  1. Nearly 100 in-depth personal and telephone interviews have been conducted with healthcare providers, equipment vendors and other industry participants throughout the U.S.
  2. The 2005 ELA Survey of Industry Activity has been analyzed as it relates to healthcare equipment leasing.
  3. Secondary data from other industry trade associations, publications, and government agencies also have been utilized.
  4. Verbatim comments from the healthcare provider and equipment vendor interviews have been added to this report to enhance the research findings.

Much of the new research has been focused on provider and vendor leasing practices and needs. More macro healthcare trends have been addressed in recent research sponsored by the Equipment Leasing & Finance Foundation.
EXECUTIVE SUMMARY

Market Dynamics

- The healthcare environment in the U.S. is quite dynamic owing to: (1) aging baby-boomers; (2) regulatory and reimbursement changes; (3) reporting and privacy requirements; (4) shifts from hospital to outpatient center care; and (5) technology changes in healthcare equipment.
  - Healthcare continues to be a growth industry. Overall spending is forecast to increase at an 8% per annum rate for the foreseeable future.

- The size of the U.S. healthcare equipment leasing market in 2005 is at least $7 billion in terms of new volume.
  - The annual market is somewhat larger if lessors not reporting to the ELA Survey of Industry Activity are considered.

- Over the past five years, the average annual rate of lease financing market growth has been 7%.
  - This compares favorably to other equipment leasing market segments.

- The healthcare equipment leasing market is projected to reach $7.5 billion in 2006 and to exceed $8 billion in volume by 2007. This outlook mainly reflects forecasted equipment sales growth as opposed to significant gains in lease penetration.

Healthcare continues to be a huge industry overall, but is still a relatively narrow market for equipment leasing.

Source: Equipment Leasing Association and R.S. Carmichael & Co. estimates
EXECUTIVE SUMMARY (Cont.)

- If overall investment in healthcare equipment is considered, lease financing penetration is still low and actually appears to be leveling off.

  
  Sources: Department of Commerce and Equipment Leasing Association

- The use of lease financing has been impacted by reimbursement reductions, regulations affecting physician referrals, and a lack of awareness and acceptance of leasing as a tool for equipment acquisitions.

  - Lease financing penetration is also a function of equipment type, ticket size, technological obsolescence, and provider creditworthiness.

- Healthcare equipment leasing is primarily a “middle-market” business in that most transactions fall in the $250,000 to $5 million range.

  Base: $6.5 billion, 2004
  Source: Equipment Leasing Association

Demand for healthcare equipment is being driven by technology changes, regulatory requirements, and providers’ office automation/productivity needs.
EXECUTIVE SUMMARY (Cont.)

- Lease financing remains an important tool for acquiring imaging diagnostic equipment where middle-market tickets and rapid technological change are found.
  - MRI (Magnetic Resonance Imaging) systems can cost at least $1 million, while PET (Positive Emission Tomography) imaging systems can exceed $2 million.
  - Demand for newer imaging technologies such as PET is outpacing demand for more established technologies.
- While diagnostic equipment still represents the largest healthcare asset category for lease financing, other segments (therapy, surgical, HIS, etc.) have grown somewhat more rapidly.

![Bar chart showing lease financing activity in billions for Diagnostic, Therapy and Surgical, HIS and Other categories in 2002 and 2005.](chart.png)

Source: Equipment Leasing Association and R.S. Carmichael & Co. estimates

- For smaller-ticket (<$250,000) transactions, healthcare providers often elect to purchase their equipment.
  - Laparoscopic, orthopedic and anesthesiology equipment, for example, often are characterized by smaller tickets and tend to be purchased.
EXECUTIVE SUMMARY (Cont.)

- More than 90% of chronic dialysis equipment appears to be purchased outright by hospitals. (Acute dialysis equipment with larger ticket sizes is more often leased.)

- Patient monitoring equipment is another equipment category where provider preference is to purchase rather than lease because of small ticket sizes (as well as long-life characteristics).

- The small ticket sizes for individual units of home healthcare equipment (e.g., beds, infusion pumps, catheterization kits) also limit leasing utilization.

- An increase in FMV (fair market value) purchase option leases is attributable to digital technology advances in healthcare equipment.

Digital technology is requiring more flexible lease structures that enable providers to obtain state-of-the-art upgrades.

- Technology upgrade/refresh structures are helping to stimulate lease financing.

  - Newer imaging systems tend to be more upgradeable.

  - Upgrades give healthcare providers the latest technology and can lead to revenue increases through new applications. MRI applications, for example, have increased over the past 10 years and are now found in fields such as cardiology, endocrinology, gastroenterology and oncology.

  “I think the ability to build in upgrades, and to make changes during the course of the life, to extend the term of the lease, in order to finance an upgrade mid-way through, really make leasing attractive and continue to grow in popularity.”
EXECUTIVE SUMMARY (Cont.)

Healthcare Providers

- While hospitals still represent the largest healthcare provider market for lease financing, the outpatient center and practitioner segments have grown in importance.

![Graph showing healthcare providers in billions](image)

*Source: Equipment Leasing Association and R.S. Carmichael & Co. estimates*

- Healthcare equipment acquisitions by hospitals may now have relatively lower priority as their capital expenditures are focused on replacing aging plant and implementing state-of-the-art information technology, especially software.

- While the hospital market has slowed somewhat for the leasing of imaging equipment, it represents growth opportunities for leasing IT systems such as PACS (Picture Archiving and Communications Systems) that store, retrieve, distribute and display medical images in digital format.

  - Healthcare IT systems being financed have expanded to include: (1) electronic medical records; (2) computerized physician order-entry systems; (3) electronic imaging files; (4) electronic billing and claim submission; and (5) electronic prescription drug fulfillment.

  - Costly ERP (Enterprise Resource Planning) systems are being installed in hospitals and represent candidates for lease financing.

Healthcare IT systems represent a primary growth market for lease financing, though penetration remains low.
A surprising number of hospitals still do not lease any equipment. Some of them appear to be uninformed on the advantages of leasing as an option for acquiring their healthcare equipment.

- Leasing is becoming less attractive to some hospitals because of their perception that accounting rules are moving against the lease financing option.

In the hospital environment, chief financial officers are most influential in decisions to lease vs. buy equipment.

- Department heads (e.g., radiology) are most influential as to which types of equipment to acquire. However, they may have some latitude in choosing lease financing for equipment obtained through their operating budgets.

- Heads of nursing departments also can be decision influencers for monitors and other patient-related equipment.

Since many hospitals have 501(c)(3) status or are government-affiliated, tax-exempt leasing is often sought.

- These hospitals have historically funded capital investments with tax-exempt bonds and represent candidates for tax-exempt leasing.

The outpatient center market, especially the ambulatory surgery segment, continues to be significant as a market for lease financing.

- As practitioners experience declining reimbursements, they have been seeking new revenue opportunities from outpatient centers. However, legislation relating to physician referrals of patients to centers in which they have an ownership interest may dampen this trend.

- Both new and upgraded outpatient imaging and surgery centers require new equipment.
EXECUTIVE SUMMARY (Cont.)

- The practitioner market for lease financing is growing and is being influenced by a number of dynamics.
  - The healthcare provider universe still consists of many small physician practices with limited access to capital. About 70% of the 670,000 physicians in the U.S. are office-based in solo or group practices.
  - The majority of dentists are solo practitioners.
  - Investments in IT hardware and software are required in order for practitioners to comply with patient privacy requirements.
  - New technology and upgraded systems are also needed for the automation of practitioner offices.
  - Under Section 179 of the Internal Revenue Code, physicians (and other businesses) can deduct up to $100,000 of the cost of equipment during the year that it is acquired (but not necessarily paid for). “Equipment” also includes computer software.

- The financing needs of practitioners extend well beyond equipment lease financing.
  - Start-up practice financing, practice acquisition financing, revolving lines of credit (for working capital), and commercial real estate financing are also financial services frequently required by practitioners.
  - Practitioners seem to have a preference for one-stop providers of financial services.

Provider investments in technology to improve productivity will help stimulate lease financing demand.
EXECUTIVE SUMMARY (Cont.)

Equipment Vendors

- **Lease financing often originates at the equipment vendor level.**
  - Many healthcare equipment manufacturers have leasing programs in place to support their sales.
  - Lease financing is increasingly being introduced at the equipment distributor and dealer levels.

- **Larger healthcare equipment vendors (e.g., annual sales >$100 million) tend to be more sophisticated in using leasing as a sales-aid.**
  - These vendors often have larger and more financially sophisticated customers and more highly trained sales forces.
  - In addition to the “Big 3” healthcare equipment manufacturers (GE, Philips, Siemens), leading vendors include:

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Healthcare equipment vendors usually recognize the value of lease financing as a sales tool.
EXECUTIVE SUMMARY (Cont.)

- **Leasing is still not being used as a proactive sales tool by some equipment vendors.**
  - Some healthcare equipment manufacturers, for example, still seem to prefer cash sales.

- **Some manufacturers are now booking leases themselves in light of revenue accounting issues.**
  - Other manufacturers are still evaluating what effect the adoption of FASB EITF Issue No. 0021 will have on their consolidated financial statements. Decisions to adopt 0021 could cause revenue deferral over the term of lease financing.

**Leasing Competitors**

- **Major equipment leasing companies, (i.e., total leasing volume exceeding $1 billion per annum) predominate in the healthcare equipment leasing market.**

  ![Leasing Competitors Pie Chart](chart_image)

*Base: $6.5 billion, 2004
Source: Equipment Leasing Association*
EXECUTIVE SUMMARY (Cont.)

- **GE Healthcare Financial Services, De Lage Landen Financial Services and several others have become more firmly established as leaders in the healthcare equipment leasing field.**
  - *GE Healthcare Financial Services* is noted for its broad product capabilities and market segment coverage in the healthcare field. Its representatives are considered responsive and knowledgeable.
  - *De Lage Landen Financial Services* is perceived by vendors as a leader in the healthcare equipment leasing field. Vendors also note De Lage Landen’s superior service quality and fast turnaround because of its experienced personnel and extensive healthcare industry knowledge.
  - *Bank of America Leasing* has a Healthcare Finance unit that provides lease financing to hospitals, outpatient surgery/imaging centers, physicians and other healthcare facilities. MBNA, a recent Bank of America acquisition, enhances Bank standing in the healthcare equipment leasing field at the practitioner level.
  - *CIT Healthcare* is a rapidly growing player in healthcare finance. Its position has been recently enhanced by the acquisition of Healthcare Business Credit which specializes in asset based financing for healthcare providers.
  - *CitiCapital’s Medical Financing* covers both the provider (hospital, outpatient center, physician) and vendor markets. CitiCapital also has unique product capabilities (e.g., tax-exempt financing, reagent rental programs) that provide an advantage over other competitors.

A number of competitors, led by GE Healthcare Financial Services, are active in multiple market segments.
EXECUTIVE SUMMARY (Cont.)

- All of the leading healthcare equipment manufacturers (e.g., GE, Philips, Siemens) have captives or joint ventures that actively seek new lease financing business.
  - The core captive business of GE Healthcare Financial Services, Philips Medical Capital and Siemens Medical Finance stand out.
  - Johnson & Johnson Finance, Olympus Financial Services, and Agfa Finance are other notable captives.

- Bank-affiliated leasing companies appear to be gaining some market share.

Bank-affiliated leasing companies have been targeting the healthcare market for future growth.

- Key Equipment Finance, National City Healthcare Finance and US Bancorp Healthcare Finance Services and Wells Fargo Financial Leasing are among the leading bank affiliates in this market.
- Matsco and Winthrop Resources are distinctive healthcare equipment leasing specialists also affiliated with banks (Greater Bay and TCF, respectively).
Opportunity and Strategy Considerations

- **Industry expertise, flexibility, pricing in a competitive range, simplified documentation, and fast turnaround are among the major success factors in today’s healthcare equipment leasing market.**
  - Leasing companies demonstrating healthcare industry expertise are viewed as more committed to the market and enjoy a competitive advantage over generalist lessors in a number of market segments.
  - Healthcare providers and equipment vendors alike often do not want to deal with leasing companies that are unfamiliar with specific equipment types and regulations affecting healthcare markets.
  - Providers and vendors also seek equipment lessors that are flexible in terms of customizing lease financing structures according to customer needs. From the vendors’ standpoint, high credit acceptance (e.g., 85%) by their lease financing partners is important.
  - While some healthcare providers will only select lessors offering the lowest rates, most others will balance pricing with flexibility and industry expertise.
  - Simplified documentation is another requirement for success in the healthcare equipment leasing field. For example, providers and their equipment vendors seek an efficient application and credit approval process that is more Internet-based.
  - For smaller ticket sizes, turnaround on credit approval is expected within a matter of hours, if not minutes. For more costly equipment (e.g., MRI) approval times may require one or two business days. In the case of vendor relationships, fast turnaround on payments is also sought.

Leasing companies cannot dabble in the healthcare market and expect to be successful.
EXECUTIVE SUMMARY (Cont.)

- For healthcare equipment lessors oriented toward vendors for lease origination, the training of equipment sales forces is a critical requirement for success.
  - A number of manufacturers of healthcare equipment indicate that low lease penetration rates are often attributable to a lack of adequate training of their sales forces. Some vendors state that they would use leasing as a sales tool much more frequently if their sales personnel were better trained by leasing companies on how to effectively position customer lease financing options.

- Larger healthcare equipment manufacturers place value on a leasing company’s ability to support their international sales.
  - Only a handful of leasing companies (e.g., GE Healthcare Financial Services, De Lage Landen Financial Services) now have the international capabilities to meet the global customer financing needs of the largest vendors.

- A healthcare lessor’s tax-exempt financing capacity is important since many hospitals are either 501(c)(3) or government-affiliated institutions.

- Lease financing companies need to create and execute segmentation strategies focused on healthcare equipment markets with low but growing levels of lease penetration and where leasing company relationships with vendors and providers are not entrenched.
  - The healthcare equipment leasing middle-market will continue to be very fragmented.
  
  “The healthcare industry is a bunch of niches. This is what frustrates many leasing companies.”
  - A well thought-out segmentation strategy is critical to optimizing sales and marketing resources in light of uneven segment-by-segment growth prospects and acceptance of leasing.

A key to success is leasing company relationships with healthcare equipment manufacturers and distributors.
EXECUTIVE SUMMARY (Cont.)

• Leasing needs to be better positioned in the healthcare equipment market as a proactive sales tool.

  “I think the trend to lease is increasing, but not as much as I would like. I really think leasing is a great vehicle. I think sometimes it’s an issue of a salesperson who is not positioning leasing properly, or not understanding the overall power of leasing.”

• Establishing customer leasing programs at the distributor and dealer levels also will be important.

  – Lease training and educational programs designed for distributor and dealer sales personnel are central to increased lease penetration.

• To address international healthcare equipment leasing opportunities, alliances with overseas lessors may need to be considered.

  – The credit, political and currency risks of some international markets can be best addressed through partnerships with indigenous lessors.

• Aggressive marketing strategies and sales plans need to be developed and executed for each targeted segment.

  – Detailed sales plans for the most attractive prospects in each segment are required.

  – Marketing communications materials that demonstrate a leasing company’s healthcare industry expertise and deal activity also need to be developed.

  – Participation in industry and professional association events also can be effective in creating awareness of lessor capabilities that are unique to the healthcare industry.

While lease financing utilization has been stable recently, providers and vendors alike anticipate that penetration could grow as awareness of leasing as a tool for acquiring equipment grows.
Lease financing activity is found in many healthcare equipment categories. The most prominent include:

- X-ray Systems
- Mammograms
- PET Systems
- MRI Systems
- CT Scanners
- Ultrasound Systems
- Nuclear Medicine
- PACS (Picture Archiving and Communications System)
- Laboratory Diagnostic Equipment
- Lasers
- Other Surgical and Therapy Equipment
- Patient Monitoring Systems
- Healthcare Information Systems

The transition from film to digital imaging has impacted lease financing.

Imaging Diagnostic Equipment

Overall demand for imaging diagnostic systems in the U.S. has slowed down, especially for some of the traditional modalities (e.g., MRI, ultrasound).

![Bar chart showing domestic consumption of medical equipment from 2003 to 2004](chart.png)

*Base: U.S. manufacturer shipments + imports - exports*

*Source: Department of Commerce and RSC&Co. estimates*
Healthcare Equipment Leasing Markets (Cont.)

- Imaging diagnostic equipment ticket sizes have remained relatively stable, while productivity has increased.

![Average Ticket Size and Total Procedures Graphs]

Source: GE Medical Systems

- Improvements in imaging diagnostics include expansion of procedures and quicker, more accurate diagnoses.
  - MRI applications today have expanded significantly beyond applications 10 years ago (e.g., body scans, neurology) to new applications (e.g., cardiology, oncology, gastroenterology, endocrinology).
  - Digital mammograms are more accurate than traditional film-based X-rays in diagnosing breast cancer. Digital technology has penetrated only about 8% of this market, largely because the equipment costs as much as $500,000, or five times as much as film-based machines. Also, insurers do not necessarily pay more for digital exams, even though they cost more.

Digital mammography systems appear to represent upside potential for lease financing.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

• Concerns about technological obsolescence drive decisions to lease imaging diagnostic equipment.
  
  – Providers have to consider the areas of medicine where technology seems to change most rapidly.

  “We have a CT scanner that is five years old, and it is incredibly obsolete. It’s been outdated by at least four models. We have a single slice, and they’re up to 32 slices. That’s one that would be a good option to lease.”

• “Upgradeability” of imaging diagnostic equipment has become more important to providers.
  
  – Upgrades protect their investments and keep their radiology departments “state-of-the-art.”
  
  – Upgrades also can allow the expansion of potential markets for new applications.

• Digital imaging equipment is often high cost and thus suitable for leasing.
  
  – MRIs can be very expensive, often a $3 million investment. Physical plant modifications are also frequently required. A hospital may not have a choice: if the imaging equipment is expensive, lease financing may be the only affordable option.

Larger-ticket equipment, with rapidly changing technology, is more likely to be leased.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- PACS continue to develop as an imaging-related ancillary market for lease financing.
  - The medical imaging industry is continuing to move away from film to PACS (Picture Archives and Communications Systems).
  - PACs allows a radiologist to view a patient’s study on a monitor and diagnose from that monitor, through a modality such as MRI.

  “Thanks to PACS, the hospital model is branching out and contracting a lot of radiologist physicians to read studies remotely, so they don’t have to be on the hospital site to do this. For example, you could go into a NY hospital for imaging and then have it digitally transmitted to a specially qualified radiologist in LA.”

  - More than 30% of hospitals have plans to acquire PACS in the foreseeable future.

The growth in technology to store and transmit digital images has been a spur for lease financing.

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Plan to purchase PACS for the first time 32%
PACS system installed 33%
Have signed a contract for PACS but have not yet installed the system 10%
Not automated 25%

Base: 3989 Hospitals
Source: HIMSS
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- Plans to acquire PACS are especially significant among smaller hospitals.

Tests previously conducted in central laboratories are moving to practitioner offices.

Laboratory Diagnostics Equipment

- Leading manufacturers of laboratory diagnostics equipment utilize lease financing to stimulate equipment sales.

  - Laboratory diagnostics equipment lines that are lease financed include immunochemistry testing systems, general chemistry testing, and automated blood analyzers. Leasing transaction sizes usually fall in the “middle-market” category (i.e., $250,000 - $5 million), reflecting group purchases of this equipment.

  - The provider segments acquiring this equipment include hospitals, outpatient centers, and practitioners’ offices. In addition, commercial clinical laboratories, research centers, and private and government institutions represent end-customer markets.

  - Manufacturers of laboratory diagnostics equipment such as Abbott Laboratories, Beckman Coulter and Johnson & Johnson tend to distribute their equipment directly to large hospitals, while using dealers to access smaller providers, including private practitioners.

Base: 3989 Hospitals
Source: HIMSS

Tests previously conducted in central laboratories are moving to practitioner offices.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- Lease financing penetration rates can exceed 50% of manufacturer equipment sales to practitioners, while leasing of equipment to hospitals may fall below 50%.

- Laboratory diagnostics equipment is often purchased outright by larger hospitals.

- Trends affecting the lease financing of laboratory diagnostics equipment include the following:
  
  - Many tests previously conducted in large commercial laboratories are now being conducted in practitioners’ offices.
  
  - Fully automated diagnostic systems with broad test menus are improving laboratory efficiency and the need to acquire more equipment.
  
  - Consolidation of equipment manufacturers has continued as they seek the benefits of becoming larger and offering providers a broader equipment product line.

- **Lease financing structures for laboratory diagnostic equipment include rentals and pay-per-procedure arrangements.**

  “We try to get programs out there to make it easier for our customers. It’s really based on the customers’ financial situations. If they have money, it’s no problem, but sometimes they need some creative financing tools. For example, it may be easier for them to pay per procedure. They may need certain products to go with their equipment, and we’ll do a procedural deal, where they pay for the equipment by ordering our products; there’s an equipment fee factored in. That’s what usually works best for our customers.”

Adoption of pay-per-procedure programs has been triggered by changes in payor reimbursements.
Surgical and Therapy Equipment

- Surgical and therapy equipment and devices representing potential opportunities for lease financing are quite broad. They cover fields ranging from cardiology to ophthalmology to urology.

- Radiation therapy is a significant equipment category in terms of lease financing activity and market potential.
  - IMRT (intensity modulated radiation therapy), which shapes the beam to the contours of the tumor, has been stimulating some lease financing usage.
  - Most radiation therapy systems using linear accelerators are sold to hospitals, but outpatient centers have been growing in importance as a customer base and market for lease financing.

- Medical lasers represent another therapy equipment leasing niche.
  - The segment is comprised of general-purpose lasers, ophthalmic lasers and a number of other specialized devices, many with ticket sizes below $100,000.

- Acute dialysis equipment is frequently leased.
  - Acute hemodialysis equipment may list for $25,000 and is for continuous dialysis, usually for critical care patients in hospital ICU’s.
  - Chronic hemodialysis machines may sell for $13-$14,000 each.

"I would say that 95% of hospital-based chronic dialysis equipment is purchased by hospitals, and the funding for those purchases comes from their own sources."

There are many types of medical devices that seem to represent some potential for lease financing.
Monitoring Equipment

- Patient monitoring equipment demand has grown; however, providers have demonstrated a low propensity to lease.

“Patient monitors provide a measurement of physiology (e.g., heart rate, blood pressure) which is displayed at the patient’s bedside, as well as at nursing stations. A basic vital-sign monitor can have a ticket size in the $5000 range, while an acute care monitor may cost $30,000.

- Since monitors can have a lifespan that approaches 10 years and technology does not change dramatically, they have not been strong candidates for lease financing. Most monitor acquisitions by hospitals tend to be purchased.

“From my thirty years of experience, when it comes to patient monitoring equipment, you’re better off buying it, mostly because it has a very long life span.”
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

Other Equipment

- Specific DME categories where some lease financing is found include hospital beds, infusion pumps, and ventilators.
  - “Durable medical equipment” (DME) is defined as equipment that meets certain conditions for Medicare and Medicaid reimbursement: (1) can withstand repeated use; (2) primarily serves a medical purpose; (3) is not useful in the absence of an illness or injury; and (4) is not worn in or on the body.

- Other categories of leased equipment include laboratory equipment and office furniture.

- Dental equipment that is leased includes X-ray machines, dental units, chairs, lighting equipment, and cabinets.
  - The majority of this equipment is sold through major distributors such as Henry Schein and Patterson.

Used Equipment

- The secondary market for healthcare equipment appears to be active, especially for used imaging diagnostic equipment.
  - This market has benefited from some softness in the primary equipment markets (e.g., hospital acquisition of MRIs).
  - Refurbished imaging equipment is being acquired (and leased in some cases) by outpatient providers in the U.S. and abroad.
  - In the case of laboratory diagnostic equipment, used devices can be more expensive (on a pay-per-procedure basis) to operate than new ones.

Overall, lessors appear to be making reasonable residual value assumptions, but this situation could change if pressure builds to grow healthcare equipment leasing volumes.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

Healthcare IT Systems

- In a hospital environment, IT systems embrace admissions, administration, laboratories, pharmacies and specific departments such as radiology.
  - On a departmental basis, applications where hospitals plan to purchase software for the first time include intensive care and cardiology.
  - The integration of imaging diagnostics with information systems is influencing product development, equipment acquisition and lease financing decisions.

- Healthcare IT systems where lease financing is being utilized include practice management systems (for practitioners, group practices and outpatient centers) that encompass billing, electronic medical records and Internet-based services.

- Enterprise resource planning (ERP) systems are growing in the hospital market, and lease financing is being used more frequently to obtain this software.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- Hospitals planning to acquire ERP systems are mostly multi-hospital, urban facilities.

![Hospital Types for ERP Acquisitions](chart)

Base: 3953 Hospitals
Source: HIMSS

- Residual-based lease structures have become more visible where the susceptibility to technological obsolescence has become more pronounced.

- Installation of electronic medical record (EMR) systems has been lagging expectations.
  - More than 50% of hospitals now have EMR.
  - The slow rate of acceptance has been impacted by interoperability issues with emergency and surgery department applications.

Lease Financing Products

- Lease financing products for acquiring healthcare equipment are generally money-over-money or residuals-based.
  - Leases with dollar buyout and fixed-price purchase options have no relationship to the residual value of the equipment. In this respect, they are “money-over-money” financings along with conditional sales agreements and other traditional forms of intermediate-term installment debt.
  - Operating leases treat the payment as an operating expense. They typically provide the lowest cost of use and can be treated as off-balance sheet from an accounting standpoint. The equipment is returned to the lessor at the end of term.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- Capital leases (finance leases) provide the option of purchasing the equipment at the end of term. The healthcare provider considers this to be a form of debt and can deduct equipment depreciation.

- FMV (fair market value) leases are agreed-upon at the inception of the lease. FMV is the price at which the equipment could be sold at the end of the term on an arms-length basis.

- Equipment can be purchased at the end of the lease term for fair market value or for a fixed-price ($1, 10%) negotiated at the beginning of the lease.

- Upgrades can be worked into a lease contract. As the provider adds features before the end of term, the remaining lease balance can be rolled into the upgrade.

Tax-Exempt Leasing

- **Not-for-profit healthcare providers often seek the benefits of tax-exempt leasing versus traditional financing structures.**
  - Tax-exempt leasing allows a not-for-profit healthcare provider to cost-effectively acquire essential equipment.
  - Because the interest income of the lease payment is exempt from federal and sometimes state income taxes, lessors with de minimus capacity can offer reduced interest rates to the healthcare provider.

- **For healthcare equipment with ticket sizes below $250,000, a tax-exempt lease structure may not offer dramatic cost savings. For larger transactions, the economic advantages are more evident.**
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- Not-for-profit healthcare providers under Section 501 (c) (3) of the Internal Revenue Code are eligible for tax-exempt leasing through sponsoring government authorities.
  - Because of the authority involvement in the transaction, the leasing source does not pay federal, state or local tax on the interest portion of the lease payments, thus lowering the lease interest rate to reflect these savings.

- Competing sources of tax-exempt financing include captive finance companies (e.g., Siemens Financial Services), bank-affiliated lessors (e.g., CitiCapital), commercial finance companies (e.g., GE Healthcare Financial Services), and specialists (e.g., Koch Financial).
  - Banks and their leasing affiliates represent visible tax-exempt leasing competition.

Leasing Dynamics

- Where leasing is utilized, it can originate at the provider level in the form a master lease or at the equipment vendor level in the form of a sponsored program or captive.
  - Healthcare equipment manufacturers usually have a leasing program in-place to support their direct sales.
  - Dealers can form their own relationships with leasing companies, as well as utilize leasing programs (including captive finance) offered by the equipment manufacturers.

Soft costs associated with healthcare equipment installation also may need to be financed.
• Most healthcare equipment leasing involves ticket sizes in the $250,000 to $5 million range.

  “The thing that makes leasing really attractive right now is that the technology changes so rapidly.”

For smaller-ticket transactions, providers often elect to purchase their equipment.

  • Laparoscopy, orthopedic and anesthesiology equipment, for example, is small-ticket (e.g., <$25,000) and usually purchased.

    “It really depends on the specific niche in the healthcare arena. For example, dialysis machines tend to get into a clinic and stay there for 7-10 years, and at the end of the day, there may or may not be a big change. So you may not want to lease.”

• Lease financing is an important option for acquiring equipment because of rapid technology development.

  “When you’re buying an asset that’s based on computer and imaging technology, five years is a long time to keep it.”

  “One thing driving leasing is the rapid turnover in equipment; the useful life is getting shorter and shorter due to the speed of technology development.”
• Providers that lease are often concerned with cash flow (e.g., start-ups, outpatient centers depending on Medicare reimbursements).
  - A new start-up ambulatory surgery center, for example, is usually trying to watch its cash flow.
  - There may be a big delay when start-ups collect from Medicare, so that a lease financing arrangement could be attractive.
  - Well-established providers that have a successful practice often purchase equipment.

• Lease financing penetration varies and is based on the type of equipment, the ticket size of the equipment, how fast the technology changes, and the customer profile.

  “It has varied for us, depending on what financial services we can make available. Right now, it’s probably in the 25%-30% range: closer to 25% of our total transactions. That’s actually disappointingly low for us. We’ve been as high as 40%.”

  “If you combine all of our financed programs, it’s probably close to 30% of our business. We do some leases, where the title does not transfer. If I told you that amounts to 10%, I guess it hasn’t changed. Most of what we do is really financed sales.”

• Leasing has lost some allure in the view of some healthcare industry participants.

  “Some of the dramatic financial benefits the government offered for leasing are coming to an end. Many of the tax deductions, which made leasing very attractive, are either gone or are more restrictive.”

Decisions to lease can depend on the life cycle of the provider.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

- Providers increasingly acquire software through lease financing.
  
  “It runs the gamut from people who want to buy (with capital expenditures) software licenses from us, and we have a variety of different licensing means. We try to be flexible and to adapt our licensing structure around their needs. We also have people who wish to buy packaged turnkey systems from us, and that turnkey would be the hardware, as well as our software. Then there are customers who wish to take either one of those solutions and finance it, either in the form of a straight lease or on a per-use basis.”

- Lease financing transactions generally have 3 to 5 year terms.
  
  “Usually they’re 3 to 5 year agreements. That’s why a lease can make sense. It’s paid over time, and as technology changes, there is the opportunity to upgrade.”

- Provider decisions to lease vs. purchase equipment are affected by ticket size.
  
  “Acquisition cost would be our primary consideration if we were deciding on lease vs. purchase. There are so many different hands that touch this. It’s probably the customer (department) who says, ‘I want to buy it.’ I guess we might look at it and ask, ‘Does this department have enough money to buy the equipment?’ If not, we might lease it for a year or two, until they have enough capital to purchase it.”

- Some shift from sales-type leases to operating leases is observed at the equipment vendor level.
  
  “In response to changing market preferences, we will immediately shift our diagnostic system placements from predominately sales-type leases to predominately operating-type leases. This should further improve competitiveness, sales efficiency, and profit margins. Revenue is recognized immediately with a sales-type lease but is spread over the life of an operating-type lease. As a result of the revenue recognition requirements of operating-type leases, reported sales and earnings will be lower in the near-term. After full implementation of this change, sales and earnings growth rates will be enhanced, and we will improve the predictability of our financial performance.”

The image of lease financing has lost some of its cachet in the healthcare field.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

• Operating leases do not impact hospital capital budgets.

  “Our customers are primarily hospitals. They have a finance person who says
  they’re going to stay tight on capital, but they don’t pay attention to operating
  leases.”

  “We’re leasing more in certain segments of our business than in others, but the
  momentum seems to be geared more toward operating lease programs. Folks are
  much more interested in expensing on their operating budgets than they are trying
  to put it into their capital plans at the moment. They’re looking for operating
  leases; that trend is definitely increasing. Probably 25% of our business is
  operating leases.”

• Rentals are also visible in the healthcare market.

  “Some hospitals don’t want to invest capital dollars for pieces of equipment that they
don’t always need (e.g., bariatric beds for severely obese), so they rent on an as-needed
basis. We have an entire rental business that allows them to rent specialized equipment
as they need it, without investing capital dollars.”

• The importance of reagent rental programs appears to be waning as healthcare
providers move more in the direction of pay-per-procedure arrangements.

  Reagent Rentals

  – The sale of the reagent constitutes the major focus of the transaction. The
  equipment is presented as “cost-free” to the end-customer, but in fact the cost of
  the equipment is built into the cost of the reagents.

  – The customer commits to a minimum reagent volume, which is used to determine
  pricing.

  – The length of rentals varies.

  Revenue recognition
  issues are influencing
  lease financing decisions.
HEALTHCARE EQUIPMENT LEASING MARKETS (Cont.)

Pay-per-Procedure

- The leasing of the equipment is the primary focus of the transaction. The transaction also includes reagents/chemicals and supplies necessary to perform a diagnostic test.

- The provider pays a flat fee for each test.

- Cost-per-procedure allows customers to more easily capture the total cost of a test, as opposed to reagent rentals. This maximizes their potential reimbursement from health insurance carriers and Medicare.

- Typical transactions are 3 to 5 years.

“Medical equipment manufacturers will place a piece of equipment in an institution without asking for any capital expenditures; then, based on calculations for a year’s requirements/usage of the disposables, they will figure the cost. For example, if they are going to use 5,000 pieces, they’ll charge $200 each time one is used, instead of $100, and the extra $100 will be applied to the purchase of the equipment. It’s another way of getting a piece of equipment when they have no money.”

“Disposable consumables are common in our area: put a machine in and pay for it out of consumables. I know that some of our competitors that sell similar testing equipment have deals where the equipment is actually on line with them, so they know how many tests are being done and they automatically replenish the supplies. That’s the way of the future; you have these financing arrangements that are wired in to the vendor, and you don’t do anything but run the tests and pay the bill once a month.”

Pay-per-procedure financing is an administratively intense product.
• Pay-per-procedure programs can be very labor-intensive.

  "I always bring up three options: purchasing (with or without installments), leasing, or cost of treatment. I would rather do installment sales or leasing any day, rather than cost of treatment. Cost of treatment has to be tracked, watched on a monthly basis, and every quarter you have to sit down with the people and balance out what they're paying. It's very labor intensive and paperwork intensive."

• While pay-per-procedure is still popular, a new program ("placing") appears to be gaining acceptance.

  "Pay-per-procedure is still a very popular structure, but another program that has become bigger is 'placing' the machine. In those cases, it's still our machine, but we're 'placing' it there, for them to use. It never goes on their books, and they can return it any time they want. We give them targets, which we want them to meet, and if they don't make the targets, then we can take the machine away. It's very helpful for those customers that don't have the capital available."

New programs are being introduced to place equipment.
Hospital Practices

- Lease financing utilization by hospitals appears to be less robust than in other provider sectors.

  “Probably 25% is leased. They’re going to pay for an item that is less than $100,000 out of the budget; probably out of the operating budget, as opposed to the capital budget. Someone in the hospital can always come up with $50,000.”

  “Among all of our customers, I think hospitals might be less apt to lease than buy. It really fluctuates a lot, and it also depends on what the sales rep thinks is the best option.”

  “The hospitals do purchase a lot with their capital budgets, but sometimes it makes sense for them to do leases with us. They may have a capital budget of $100 million, and they buy the more expensive stuff (e.g., MRIs) and lease the less expensive stuff.”

  “A lot of the hospitals are hurting a little bit more. They have all this need for equipment, but they don’t have the dollars in the budget, so they have to come up with a way to get those funds from different sources such as leasing.”

- Hospital use of lease financing is driven by balance sheets and other factors.
  
  - Balance sheets. Hospital balance sheets are stronger today. This is reflected in the declining number of rating agency downgrades.

  ![Graph](source)

  *Six months ended June 30, 2005
  
  Source: Fitch Rating; 2005 Median Ratios for Nonprofit Hospitals and Healthcare Systems

Hospitals usually pay for equipment from their operating and capital budgets.
PROVIDER LEASING PRACTICES AND NEEDS (Cont.)

- **Revenues.** Baby boomers are increasing consumers of healthcare and are driving hospital revenue growth.

- **Capital expenditures.** Buildings are the growing part of the hospital investment mix. Existing plants are getting older and older. IT hardware and software are badly needed, especially software. Therefore, investment in healthcare equipment may take a back seat.

- **Wellness plans.** Wellness programs pay 100% for colonoscopies and accidents, but everything else is paid out of $3000-$4000 provided to consumers each year. This could affect how much and what type of equipment is purchased.

- **Technology.** A physician shortage is growing in contrast to the oversupply 5 to 6 years ago. As a result, physician investment in equipment could decline, and they will only be able to afford state-of-the-art equipment as part of a larger group.

- **Some hospitals are stretching their capital cycles in order to make larger purchases.**

  “I see healthcare organizations stretching their capital cycles. It was typical for a single fiscal year to be a capital cycle, and now healthcare organizations have stretched them into 24 to 30 month capital cycles. We are actually in a 24-month capital cycle right now, so we can make larger purchases and absorb them into a single budgeting period, without significantly impacting the projects or the proposals that are on the table.”

- **Hospital CFOs are very influential regarding decisions to lease vs. purchase equipment.**

  “Generally, the CFO controls the capital budget. The CFO may relinquish back to the Controller. If the hospital is doing it correctly, there should be a Capital Committee, led by the CFO, the Controller, or the Supply Chain Director, with representatives from across the house, who can make informed, objective decisions about how to allocate and spend money on equipment.”

Chief financial officers are at the center of lease vs. buy decisions.
“The CFO has to analyze all the leases that the departments want to enter into. That’s all done up-front, typically before the procurement piece. We don’t decide whether it’s leased or purchased. That’s somewhere between the department and Finance.”

- Hospital decision-influencers on lease financing can include department heads.

  “I don’t go to the CFOs. I have to convince the head of the department to buy my equipment. They don’t take it up the ladder to the CFO. Most department heads have a certain dollar threshold; they have to go upstairs for approval for anything over.”

  “It starts with the department wanting the equipment. They would go through several vendors that could provide them with what they want, looking at all the specs, etc. After that, it would go to Procurement, which would send out an RFP to different vendors, to get pricing, etc.”

  “The individual departments will decide they need new equipment and will figure out how to incorporate it into their capital budgets. Typically, they will have been discussing it with hospital administration. However, they do this as individual departments: if it’s for the ICU, they’ll make their decision without bringing in the ER for their opinion/input.”

- Heads of nursing departments are also influential.

  “We are often involved with the heads of nursing departments. They have a great deal of influence on things that are therapeutic in nature. They’re constantly in the juggling game of maximizing their dollars. Which is more important, a new IT system, new beds, etc? We still sell into other departments, like purchasing, materials management, etc., it’s just that we’ve always found nursing to be strong advocates for us.”

Group purchasing organizations account for a large percentage of equipment acquisitions.
• Premier and Novation may be involved in the equipment acquisition process.

  “We usually have the departments decide what equipment technology would best suit their needs, and then we put out the bids and follow our Premier tracking to get the best cost with a Premier company. Premier and Novation are the same thing. We use Premier to help us get better discounts within that organization. It depends on who is on Premier and who has the best bid.”

  Novation and Premier are examples of major supply services companies that serve hospitals and other providers. They help providers optimize their supplier relationships through group purchasing and advisory services.

  Novation and Premier also assist as a clearinghouse between providers and equipment vendors on new healthcare technology.

• Some hospitals do not lease any equipment.

  “We don’t lease anything and that includes MRIs or CTs. We might do a pro forma through our finance people, but they indicate that it’s not a good move. We have one MRI that is leased, but it will be gone by the end of the year, and we will own a new one in that facility.”

  “We have a couple of rural hospitals that can’t support the need for a full-time, five days a week MR machine, so they purchase a service from a portable MR company. Other than that, we own all the high-end modalities.”

• Hospital policy may be to purchase everything.

  “We buy everything. That’s our policy. Our CFO is hard-headed. In his mind, leasing offers no economic benefits. Leasing is just never an option; if someone offers me a lease, I have to turn it down and that’s the last time it’s mentioned.”
Leasing can be a viable option for smaller hospitals.

“Leasing is certainly a good option for a smaller hospital, or one with more constrained capital budgets so that they can stay on the cutting edge. I would say there are times when leasing would have to be a necessity. At times, I would actually prefer that we lease some of the equipment that we purchase, just because it does offer some advantages (e.g., more protection against technology obsolescence).”

Some hospitals still seem unsophisticated regarding the advantages of lease financing.

“I really don’t think the financial decision-makers in hospitals are as sophisticated about leasing and financing as they are in other industries. They’re just not as business savvy.”

Lease financing may have an image issue at some hospitals.

“I think leasing holds a negative connotation to many hospital executives.”

In selecting healthcare equipment lessors, hospitals consider the following attributes to be most important:

- Healthcare industry knowledge
- Equipment leasing product capabilities
- Flexibility in structuring leasing transactions
- Ability to quickly respond to provider requests
- Competitiveness on rates, terms and conditions
Many hospitals are not-for-profit 501(c)(3) institutions, which has important implications in terms of their lease financing product needs.

Outpatient Centers

- The outpatient center market consists of: (1) diagnostic imaging – MRI, CT, PET/CT as well as other imaging modalities; (2) surgery – single specialty and multi-specialty centers; and (3) treatment – radiation therapy, dialysis and physical therapy.

- Ownership of outpatient centers continues to be varied – physicians, management companies and/or hospitals, but many centers have physicians behind them.
  - The most attractive financing opportunities for lenders are outpatient centers that have joint physician and hospital ownership.

Government hospitals may have full cancellation rights on equipment leases.

Base: 4895 U.S. community hospitals
Source: American Hospital Association
• The outpatient center market is showing growth.
  – The number of ambulatory surgery centers, for example, now exceeds 4,000.
  – Ambulatory surgery centers have existed since the 1970s and are performing more
    than 8 million surgical procedures per annum.

  “The surgery center market is growing like you wouldn’t believe; it’s huge right now. A
  lot of the doctors are leaving the hospitals and starting up their own surgery centers so
  they can control their own destiny. A lot of things have changed in the healthcare
  industry. The doctors are seeing that they can refer patients to their own surgery centers
  and win both ways.”

• Outpatient center growth has been driven in part by the pace of technological
  development of healthcare equipment.
  – Some procedures that required major surgery and extensive convalescence in the past
    now can be performed on an outpatient basis in ambulatory surgery centers.

• The number of outpatient centers has also grown in step with the number of procedures
  approved for reimbursement.
  – As more procedures are reimbursed (almost 2500 ASC procedures have been granted
    approval), more outpatient centers are developed.

• Legislation could restrict physician referrals to their own centers.

  “There is some legislation that’s trying to prevent the doctors from doing referrals
  because it’s seen as a conflict of interest if the doctors are referring their patients to a
  surgery center which they have an interest in.”

Outpatient centers represent an important market segment for lease financing.
- **Outpatient surgical and imaging centers are strong candidates for lease financing.**

  “Surgical doctors’ groups are absolutely a growing market for equipment leasing. Since they can’t afford the large pieces of capital equipment, they’re joining large groups, imaging centers, surgery centers, etc. Doctors are banding together to acquire the overall technology.”

- **Outpatient center financing may involve the financing of land, building, equipment and working capital (to cover initial negative cash flows).**
  
  - A new outpatient center might require equipment valued at $1 million or more, while an existing center might need less than $500,000.
  
  - For new centers, the preference often is to have a financing source with linked products for land, buildings, equipment and working capital lines of credit. Dealing with multiple lenders can be complex.

- **The level of equipment leasing required by outpatient centers is often a function of the center’s specialties (e.g., orthopedic surgery, ophthalmological surgery).**
  
  - The majority of surgical procedures performed in ambulatory surgical centers have been in ophthalmology and gastroenterology.
  
  - The proportion of ASCs specializing in one area versus multiple specialties is now 50/50.
Private Practitioners

- Physicians represent by far the largest group of practitioners.

Lease financing is often used by practitioners for the acquisition of both healthcare and office equipment.

Sole practitioners have been steadily joining group practices.

- Leasing tends to be used by practitioners as a technology hedge and to conserve working capital.

- Healthcare (and office) equipment is more likely to be leased by practitioners if the transaction size exceeds $25,000.

- Specializing practitioners (e.g., ophthalmologists) tend to be more equipment-intensive and thus may be more likely to lease equipment than general practitioners.

“We are so fortunate that our customer base is solid, so we experience very little bad debt. Let’s face it, ophthalmologists can count on the fact that everybody gets old, and many of them get cataracts. It’s a fairly lucrative and safe business. There are a lot of wealthy ophthalmologists, with multi-million dollar practices. It’s certainly within their means to spend $50,000 on a new piece of equipment.”
The principal decision-makers at the practitioner level regarding equipment acquisition and use of leasing are the physicians themselves because of their ownership interest in the practice.

- Accountants and other third-party “trusted advisors” have some influence over practitioner decisions to acquire equipment and the methods of financing (including leasing) that are used.

- A number of practitioners also seem to make equipment and leasing decisions based on recommendations from medical colleagues, since referrals are common in the healthcare profession.

- Office managers will research equipment and lease financing sources for practitioners, but approval usually rests with the physicians themselves.

- Some practitioners will utilize brokers to identify potential leasing providers and to recommend the most suitable source.

While practitioners may be price-sensitive in their selection of lease financing sources, the ease of obtaining financing (e.g., limited paperwork, limited financial disclosure) also has some bearing.

- Practitioners are very reluctant to provide personal guarantees.

Practitioners frequently have a preference for lease financing sources associated with equipment vendors.

- On lease transactions over $50,000, vendor-sourced financing may be more desirable to ensure ongoing technical support.

- Practitioners also cite less financial disclosure as another reason for choosing vendor-sponsored lease financing.

Start-up and newer physician practices are under more capital constraints than established practices and hence have a greater interest in leasing their equipment.
Practitioner preference for communication on lease financing is through personal visits to their offices by leasing representatives.
- Leasing company solicitation of practitioner offices by telephone is resisted owing to the high volume of telephone inquiries that physicians receive from patients, colleagues and others.

Practitioners also seem to value endorsement of leasing providers by the professional associations (e.g., AMA) that they belong to.

Dentists

- The aging of baby-boomers, the evolution of dental technology, and the growing acceptance of cosmetic dentistry are among the factors that contribute to the attractiveness of this market to equipment leasing companies.
  - The level of fee-for-service continues to be relatively high in the dental market.

- Equipment leased by dentists includes imaging equipment and furnishings.
  - Equipment needs can vary by dental specialty (e.g., orthodontics, periodontics, endodontics).
  - Dental laboratory equipment is a specialized sub-segment of this market.

- Dental specialists (e.g., orthodontists) can command more extensive lease lines of credit than general practitioners.

Complete turnkey solutions for start-ups, practice acquisitions and expansions are often sought by dentists.
Most dental equipment is acquired through specializing distributors such as Patterson and Henry Schein. These distributors usually will offer lease financing programs to aid dentist acquisition of equipment.

HPSC (now part of GE Healthcare Financial Services) and Matsco are among the leading lease financing specialists in the dental market.

Dentists frequently require financial services beyond equipment leasing, such as practice acquisition financing and working capital financing. Over 1000 dental practices appear to be acquired each year. The four main factors driving dental practice acquisitions are: (1) buying a first practice; (2) making a slow practice busier; (3) upgrading or changing the type of practice; and (4) forestalling competition.

For start-up dental practices, working capital is often needed to offset initial negative cash flows. Lines of credit can be structured either as term loans or as revolving lines of credit.

Leading dental equipment lessors such as HPSC and Matsco also offer practice acquisition financing and working capital financing.

Veterinarians also represent a specialized lease financing market.

A large percentage of veterinarians in the U.S. are solo practitioners, and their income significantly lags that of other healthcare professions. This affects their capacity for leasing and other forms of financing.

There also appears to be an oversupply of veterinarians, which is a cause of downward fee pressure resulting in stabilizing incomes.
- However, an estimated 90% of veterinarian revenues are fee-for-service.

- **Veterinarians are expected to increasingly pool their resources, largely because of the need for costly state-of-the-art equipment.**
  - Equipment leased by veterinarians includes diagnostic, monitoring, laboratory and surgical equipment.
  - Many manufacturers of veterinary equipment are also producers of human equipment.

- **A number of lease financing competitors in the dental market are also players in the veterinarian market.**
  - Matsco has been an active leasing player in this market for a number of years. It also provides practice acquisition financing and working capital lines of credit.

- **Veterinarians also represent a sizable market for turnkey financing, such as practice acquisition financing.**
  - In contrast to other healthcare professions, real estate is a significant part of veterinary practice acquisitions.
  - From a lender’s standpoint, multi-vet practices are usually more attractive than single-vet practices
VENDOR LEASING PRACTICES AND NEEDS

- The dominant full-line healthcare equipment manufacturers are Siemens, GE and Philips.
  - Acquisitions have fueled the growth of GE Medical Systems, Philips Medical Systems and Siemens Medical Solutions.
  - GE is the largest provider in the U.S., but Siemens may be bigger globally.

“There are less and less hospital equipment companies out there. The biggest manufacturers of hospital electronic equipment are Siemens, GE, and Philips. They have pretty much taken over the market.”

- Beyond the “Big 3,” there are a number of other manufacturers whose equipment is lease financed to varying extents.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Equipment Leased</th>
</tr>
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<tbody>
<tr>
<td>Abbott Laboratories</td>
<td>Diagnostic equipment including immunoassay testing systems, clinical chemistry</td>
</tr>
<tr>
<td></td>
<td>instruments, automated blood analyzers</td>
</tr>
<tr>
<td>Agfa Corporation</td>
<td>Equipment for digital radiography and other medical applications</td>
</tr>
<tr>
<td>Alcon Surgical</td>
<td>Products for ophthalmic surgeons, concentrating primarily on cataract and</td>
</tr>
<tr>
<td></td>
<td>vitreoretinal procedures</td>
</tr>
<tr>
<td>Bausch &amp; Lomb Surgical</td>
<td>Cataract and vitreoretinal surgery equipment and refractive surgery equipment</td>
</tr>
<tr>
<td>Baxter International</td>
<td>Intravenous pumps, dialysis and blood collection equipment</td>
</tr>
<tr>
<td>Beckman Coulter</td>
<td>Diagnostic testing equipment</td>
</tr>
<tr>
<td>Becton, Dickinson</td>
<td>Diagnostic testing equipment</td>
</tr>
<tr>
<td>Boston Scientific</td>
<td>Lithotripsy devices</td>
</tr>
<tr>
<td>C.R. Bard</td>
<td>Surgical devices for laparoscopic and orthopedic procedures.</td>
</tr>
<tr>
<td>Canon Medical</td>
<td>Digital imaging products, including Digital Radiology (DR)</td>
</tr>
<tr>
<td>Cardinal Health</td>
<td>Products for patient care</td>
</tr>
<tr>
<td>CooperSurgical</td>
<td>Bone density measurement equipment and fetal monitors</td>
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</tbody>
</table>

Consolidation has continued to characterize the healthcare equipment vendor landscape.
## VENDOR LEASING PRACTICES AND NEEDS (Cont.)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Equipment Leased</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTI Molecular Imaging</td>
<td>• Positron emission tomography (PET) equipment</td>
</tr>
<tr>
<td>Dade Behring</td>
<td>• Diagnostic testing equipment</td>
</tr>
<tr>
<td>Datascopc</td>
<td>• Patient monitoring systems, blood pressure equipment, and cardiac monitoring equipment</td>
</tr>
<tr>
<td>Dentsply International</td>
<td>• Dental X-ray systems and other dental equipment</td>
</tr>
<tr>
<td>FujiFilm Medical Systems</td>
<td>• Film processing equipment, computed radiography (CR), and image/information management systems (PACS)</td>
</tr>
<tr>
<td>Gambro Healthcare</td>
<td>• Equipment used for dialysis</td>
</tr>
<tr>
<td>Guidant Corporation</td>
<td>• Cardiovascular therapeutic devices</td>
</tr>
<tr>
<td>Hitachi</td>
<td>• Imaging diagnostic equipment</td>
</tr>
<tr>
<td>Hologic</td>
<td>• Bone densitometers and digital radiography systems</td>
</tr>
<tr>
<td>Hyperion</td>
<td>• Eye surgery lasers</td>
</tr>
<tr>
<td>Invacare</td>
<td>• Equipment for home-health market</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>• Diagnostic equipment (e.g., blood chemistry) and imaging equipment</td>
</tr>
<tr>
<td>Kodak</td>
<td>• Mammography</td>
</tr>
<tr>
<td>Medtronic</td>
<td>• Infusion pumps</td>
</tr>
<tr>
<td>Olympus America</td>
<td>• Diagnostic and imaging systems</td>
</tr>
<tr>
<td>Roche Diagnostics</td>
<td>• In-vitro diagnostics equipment for hospitals and physicians</td>
</tr>
<tr>
<td>Smith &amp; Nephew</td>
<td>• Surgical equipment (e.g. endoscopy)</td>
</tr>
<tr>
<td>St. Jude Medical</td>
<td>• Defibrillators</td>
</tr>
<tr>
<td>Stryker</td>
<td>• Endoscopy equipment and facial surgery instruments</td>
</tr>
<tr>
<td>Toshiba</td>
<td>• Medical imaging</td>
</tr>
<tr>
<td>Tyco Health Group</td>
<td>• Surgical and medical instruments</td>
</tr>
<tr>
<td>Varian Medical Systems</td>
<td>• X-ray and oncology equipment</td>
</tr>
</tbody>
</table>

**Leading manufacturers have largely recognized the value of lease financing as a sales-aid.**
• These manufacturers and their distributors seek lease financing programs for their customers as an equipment sales-aid.
  - They want programs that reflect the unique characteristics of their industry and that are competitive in terms of pricing and credit acceptance.
  - They also want to deal with leasing company personnel that are experienced and knowledgeable.

• Leasing programs help manufacturer sales forces counteract customer concerns with pricing, since affordable monthly payments are being offered.
  - In addition to affordability, leasing can provide customers with tax advantages and with a hedge against technological obsolescence.

• Some manufacturers also distribute through resellers who then package the ultimate system and source lease financing for the end-customer.
  “An integrator might buy our piece and integrate it into the overall solution. If we’re selling it to a reseller who is integrating it into a larger, digital, big-dollar solution, those companies will then package it for the leasing company.”

• Lease financing products are proven sales-aids for vendors.
  “Lease finance is certainly helpful in terms of attracting the attention of the CFO of the hospital. Even if the customer doesn’t wish to pursue lease financing, it’s a good opportunity to have a discussion about it, and how they might end up procuring their system; it’s obviously one step towards closing.”
  “We allow customers to obtain equipment in a way that is best for them. Some hospitals have a greater strain on their capital budgets, so they need to look at operating or capital leases. We offer a variety of financial services that help our customers.”
• **Leasing is not always used by vendors as a sales tool.**

  “As a general rule, we do not utilize leasing as a proactive sales tool. On occasion, we will work with one of our third-party lease partners and put together a promotional leasing package. As a rule, we don’t lead with leasing, and we don’t promote it. We typically leave it up to our customers to find their own lease providers.”

• **Some vendors have a strong preference for cash sales.**

  “Our preference is to sell for cash, which is honestly the majority of our business. However, there are a number of customers, who for a variety of financial reasons, want to look into other financing arrangements.”

• **Equipment vendor sales reps often have latitude in selecting lease financing companies.**

  “We have about 18 reps that specialize in the capital equipment, with a larger number who sell the smaller, disposable items. Most of those 18 sales reps have years of experience in the field and are familiar with various finance companies.”

  “We let our field-based people work out their own leasing, rather than handle it from a corporate standpoint. They each have their own leasing companies and connections that they work through. That’s for our direct sales as well as our distributors. We don’t have anything centralized.”

  “We have a few third-parties that we work with, and we will go to them first. Our sales people are not mandated to use any particular lease company.”

• **Third-party leasing partners are frequently utilized.**

  “We have several leasing partners that we deal with, who put the packages together for us. They buy the equipment from us and then cut the deals directly with the smaller imaging centers and hospitals.”

Some vendors see opportunities to grow sales and defend customers through leasing programs.
VENDOR LEASING PRACTICES AND NEEDS (Cont.)

- Leasing company rates, flexibility and responsiveness are important to vendors.
  
  “From my perspective, I’m looking for a leasing company that will take on anybody. Of course, prompt turnaround and responsiveness are very important, as are competitive rates and a single point of contact.”

- Supporting equipment sales reps in proactively selling leasing is important.
  
  “Our reps have so much to remember. They have to know about our consumables and our hardware, as well as those of our competitors. They have to know their customers and their individual needs and issues. They have to understand how to install this equipment, train people as to its use, etc. To expect them to also understand all the nuances of the leasing and the financing is pushing the limits. Very few can end up understanding and executing all these things flawlessly.”

- Some vendors prefer to self-finance.
  
  “We do it ourselves for a couple of reasons. One is to be able to have a tie-in with our disposable products that we sell.”
  
  “There are advantages to doing it internally vs. using a private label provider. If you do it yourself, you have a lot more control. With a private label, they’re not you. They attempt to give one face to the customer, but they really aren’t, and you have problems with them not treating your customers as you would like them to be treated.”
  
  “For us, it works very well not to use a third-party. I think it comes down to looking at your own internal metrics: what’s the margin on your transactions? How labor-intensive are they? How difficult are the contracts to negotiate? How many contracts can a full-time equivalent process?”

In selecting leasing company partners, equipment vendors place value on training support for their sales force.
LEASING COMPETITIVE ENVIRONMENT

- Major lessors (i.e., those with total leasing volume exceeding $1 billion per annum) predominate in the healthcare equipment leasing market.

  ![Pie chart showing distribution of leasing volume by size category.]

  **Base:** $6.5 billion, 2004
  **Source:** Equipment Leasing Association

- Bank-affiliated lessors appear to be gaining some market share.

  ![Bar chart showing market share trends for different types of lessors.]

  **Base:** $6.5 billion, 2004; $6.3 billion, 2003
  **Source:** Equipment Leasing Association

Top-tier equipment leasing companies, especially GE, enjoy significant shares of the healthcare market.
The major healthcare equipment manufacturers and several others have captive finance companies.

- *Agfa Finance Group*’s captive lease financing volume for healthcare equipment is under $100 million per annum.

- *GE Healthcare Financial Services* includes a core captive finance activity in addition to non-captive vendor leasing business, asset based lending and real estate lending.

- *Johnson & Johnson Finance* is a relatively small captive finance company, with annual lease volume below $100 million.

- *Olympus Financial Services* reports lease financing volume just over $100 million per annum. This includes cost-per-procedure financing programs supporting equipment made by its parent Olympus America.

- *Philips Medical Capital* is actually a joint venture between Philips Medical Systems and De Lage Landen Financial Services.

- *Siemens Medical Finance* captive financing volume may be at the upper end of the $100-$500 million per annum range.

“It’s Philips, GE and Siemens. All of them always include a lease option in their proposals. They all have their own captives.”

“In the past, GE Healthcare Financial Services was dominant, but more recently, it has been Philips Medical Capital. They are certainly gaining more presence in the marketplace.”

GE Healthcare Financial Services has both a captive and non-captive stake in the market.
Independent leasing companies (i.e., those not captive to equipment manufacturers or affiliated with banks) enjoy 50% of the healthcare equipment leasing market.

Lease financing competition beyond the captives is diversified.

“There are quite a number of financial competitors. IFC FirstCorp is in this arena now, as is CIT. E-Plus is also out there, with their own dedicated healthcare segment. We’ve also seen Winthrop Resources on the West Coast. There’s a number of very small players, who want those small-ticket products (i.e. <$250,000). I get phone calls at least weekly from somebody new on that front.”

“There are several leasing companies that specialize in hospitals. Leasing Associates of Barrington (LAB) does a lot of hospital stuff, also De Lage Landen. I know DLL has private label deals with hospital equipment companies who chose (for whatever reason) not to do their own in-house financing. I think Wells Fargo has a medical equipment finance branch, and so does CIT. I know this, because over the past five years we have purchased other companies who have used these third-parties to do their financing, either because they didn’t have the capital or just didn’t want to mess with it.”
“I see some of the financial services companies segmenting their healthcare leasing from other parts of their business, and they’re hiring people who have healthcare experience, so that they can deal with our industry’s special needs.”

- **GE Healthcare Financial Services** is the clear-cut industry leader and targets hospitals, outpatient centers, and other providers.
  
  - GE also now addresses physician and dental practitioners as the result of its acquisition last year of HPSC. HPSC was founded 30 years ago and has gained a reputation as one of the leading specialists in equipment lease financing for dentists and physicians.
  
  - HFS annual volume exceeds $5 billion (perhaps $2+ billion in equipment financing) and managed assets exceed $10 billion. A significant percentage of this volume is through vendor leasing programs.

- **Key competitors to GE include Bank of America, CIT, CitiCapital and De Lage Landen.**
  
  - **Bank of America Leasing** has a Healthcare Finance unit that provides lease financing to hospitals, outpatient surgery/imaging centers, physicians and other healthcare facilities. This platform was acquired in the 1990s by a legacy bank. MBNA, a more recent Bank of America acquisition, became a player in the healthcare equipment leasing field by virtue of its acquisition of Sky Financial Solutions. This business focuses on physicians and dental practitioners and includes not only equipment leasing, but also practice acquisition financing.
  
  - **CIT Healthcare** is a rapidly growing player in healthcare finance. Its position has been recently enhanced by the acquisition of Healthcare Business Credit which specializes in asset based financing for healthcare providers.
LEASING COMPETITIVE ENVIRONMENT (Cont.)

- *CitiCapital’s Medical Financing* covers both the provider (hospital, outpatient center, physician) and vendor markets. CitiCapital also has unique product capabilities (e.g., tax-exempt financing, reagent rental programs) that provide an advantage over competitors.

- *De Lage Landen Financial Services* is another major leasing competitor with a strong standing in the imaging diagnostics field (MRI, CT, PET, Ultrasound), as well as in home healthcare equipment, PACS and patient monitoring systems. De Lage Landen also benefits from a joint venture (Philips Medical Capital) with one of the top 3 manufacturers of healthcare equipment.

• **Other prominent competitors in the healthcare equipment vendor leasing segment** include leasing affiliates of Key Bank, National City, US Bank and Wells Fargo, as well as a number of specialists.

- *Key Equipment Finance* enhanced its position in the healthcare field with the acquisition of American Express Business Finance. This provided Key with a platform in smaller-ticket dental, surgical and healthcare diagnostic equipment leasing to complement its vendor programs with manufacturers.

- *National City Healthcare Finance* is a unit of National City Commercial Capital that addresses the market at both the provider and vendor levels. Direct-to-provider originations cover the hospital, outpatient center and physician markets.

- *US Bancorp Healthcare Finance Services* offers vendor leasing programs and other products (e.g., practice acquisition financing) to the healthcare market.

- *Wells Fargo Financial Leasing* has a healthcare unit that is also vendor-oriented. It accesses hospitals, outpatient centers and practitioners via leasing programs designed as a sales-aid for healthcare equipment manufacturers and dealers.

De Lage Landen is considered one of the most dynamic competitors in healthcare leasing.
MarCap Corporation is a specialist in healthcare equipment leasing. Its lease financing partnerships with vendors cover the hospital, outpatient center and physicians market.

Matsco Companies is a well-established healthcare equipment financing specialist that was acquired by Greater Bay Bancorp several years ago. It focuses on the dental and veterinarian markets and offers a full suite of financial service products to these markets. In addition to equipment financing, it provides practice acquisition and working capital financing.

Americorp Financial is an established leasing competitor in the healthcare field. It enjoys leasing partnerships with equipment manufacturers and has benefited from relationships with affinity groups and professional associations as well. It also addresses the healthcare market at the provider level.

Leasing Associates of Barrington (LAB) has specialized in the healthcare equipment leasing market for more than 25 years. Its vendor programs cover a number of asset categories.

Partners Equity Capital is a relatively new equipment leasing company that has established a position in the healthcare equipment market through relationships with equipment vendors. Hospitals are among the providers that are offered lease financing.

Popular Leasing is another vendor-oriented leasing competitor that has developed a specialty in the healthcare equipment field. It benefits from an affiliation with Banco Popular, one of the top 50 banking institutions in the U.S.

Many leasing competitors focus on vendor origination.
LEASING COMPETITIVE ENVIRONMENT (Cont.)

- Other competitors include diversified commercial finance and equipment leasing companies.
  
  - *CapitalSource* finances healthcare equipment for hospitals, outpatient centers and other providers. It is also active in the provision of mortgage loans and working capital lines of credit, as well as acquisition financing facilities.
  
  - *ePlus Healthcare Group* has positioned itself as a one-stop lease financing source for healthcare providers. In addition to equipment leasing, its total solution financing can include soft costs, peripherals and working capital. ePlus customers include healthcare providers ranging from hospitals to physician offices.
  
  - *IBM Global Financing*, through its Medical Technology Financing unit, has become a player in the healthcare financing field. IBM focuses on financing healthcare systems that are related to an IBM IT solution. This covers a range of imaging diagnostic equipment, as well as associated peripherals and software.
  
  - *Merrill Lynch Capital* has a Healthcare Finance Group that focuses on asset-based, cash flow-based and real estate-based lending. This group also can draw on the capabilities of other Merrill Lynch Capital units, including the Equipment Finance Group.

- GreatAmerica Leasing, Highland Capital, IFC FirstCorp and Leaf Financial are also competitors in the healthcare field.
  
  - *GreatAmerica Leasing* established a Healthcare Group to address the market through vendor (manufacturer and dealer) partnerships. GreatAmerica also targets the practitioner market.

The healthcare equipment leasing market has attracted both major institutions and entrepreneurial finance companies.
LEASING COMPETITIVE ENVIRONMENT (Cont.)

- *Highland Capital* is a bank-owned leasing company that has a specialty in the healthcare field. It covers all of the major provider segments (hospitals, outpatient centers, practitioners) and offers a broad line of services that extends beyond equipment lease financing.

- *IFC Credit* is an independent equipment leasing company that enhanced its position in the healthcare field through the acquisition of FirstCorp. IFC FirstCorp is most visible at the equipment vendor level and enjoys relationships with healthcare manufacturers and dealers alike.

- *LEAF Financial* has developed a specialty in healthcare equipment leasing and also focuses on partnerships with equipment manufacturers and dealers.

- **Other bank-affiliated competitors include BB&T Leasing, Comerica Leasing, Commerce Commercial Leasing, First Citizens Bank Leasing, Sovereign Bank, Sterling Bank Leasing and TCF Equipment Finance (Winthrop Resources).**
  
  - *BB&T Leasing* is an emerging healthcare equipment leasing competitor in the Southeast.

  - *TCF Equipment Finance* through its *Winthrop Resources* subsidiary is an established player in the healthcare equipment leasing market. Winthrop is also a recognized specialist in residuals-based leasing for other technology equipment.
ABOUT R.S. CARMICHAEL & CO., INC.

- R.S. Carmichael & Co. is uniquely qualified to conduct this new study of the U.S. healthcare equipment leasing market in partnership with the Equipment Leasing Association. Established in 1976, the firm is recognized as the leading marketing research and consulting firm for the equipment leasing and commercial finance industries. This includes many prior market research engagements in the healthcare equipment leasing field that have assessed opportunities and strategies for leading healthcare leasing specialists, captive finance companies, bank-affiliated leasing companies, and others in the U.S. and overseas. This experience has resulted in in-depth knowledge and wide-ranging contacts in the healthcare equipment leasing marketplace.

- R.S. Carmichael & Co. has been selected by the Equipment Leasing Association to conduct periodic studies of other equipment leasing markets (e.g., information technology, office copiers, construction equipment) in order to enhance data collected by the ELA for its annual Survey of Industry Activity. The Equipment Leasing Association also has selected R.S. Carmichael & Co. to conduct research of industry-wide importance, such as a landmark Vendor Finance Study.

- R.S. Carmichael & Co. is based in White Plains, New York, and can be contacted at 914-761-8200 or rsc@rscarmichael.com. The website is www.rscarmichael.com.
Long-Term Trends in Healthcare: 
Their Implications for the Leasing Industry
About The Equipment Leasing and Finance Foundation

The Equipment Leasing and Finance Foundation is a 501c3 non-profit organization that provides vision for the equipment leasing and finance industry through future-focused information and research. Primarily funded through donations, the Foundation is the only organization dedicated to future-oriented, in-depth, independent research for the leasing industry. Foundation products include the Industry Future Council Report, the State of the Industry Report, and the Journal of Equipment Lease Financing and numerous research reports. Established in 1989, Founders include leasing industry member Paul S. Gass, the Equipment Leasing Association of America, and others. Visit the Foundation online at http://www.LeaseFoundation.org.

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For partnering to provide future focused research and reports, the Equipment Leasing & Finance Foundation wishes to express appreciation to PayNet. PayNet provided the statistical data used to execute in this study.

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The long-term projection for Healthcare in the United States is for continued growth including growth in capital spending and growth in leasing as a means of financing the capital spending. However, it is important for lenders to note significant risks associated with providing credit to Healthcare providers. The analysis of data provided in Annex A of this report addresses specific characteristics of lessees and significant credit risks found in a sample of Healthcare leases. Additional risks include the fact that the government, at various levels, pays for services, regulates, and establishes a legal framework for the Healthcare industry. The government can change the rules at any time, which complicates forecasting cash flows for Healthcare companies. Labor risks include shortages of trained medical professionals including physicians, nurses, and other specialized medical personnel, as well as difficulty in expanding training programs due to lack of resources. Rapid changes in technology and equipment required pose additional risks. The significant reduction in inpatient hospital care and dramatic increase in outpatient services, as well as the increased use of pharmacological and biomedical treatment for medical problems must also be considered.

Healthcare in the 25-year period from 2005 to 2030 will be shaped by the interaction from a growing demand for healthcare from an aging population and the limit on the resources of society. This interaction will put a premium on productivity. Productivity gains will be driven by a wide variety of technology applications in the Healthcare sector many of which will be financed by leasing.

The U.S. healthcare industry in 2004 was massive, representing a $1.8 trillion annual market that accounted for a very large share of the U.S. economy (15.4% of total Gross Domestic Product, i.e. GDP). Though many large private companies operate in the Healthcare sector, small, professional firms are the most significant business form in the Healthcare sector, followed by not-for profit organizations. Companies participating in the Healthcare sector included facilities companies, medical equipment companies, pharmaceutical companies, and health insurance companies including managed care companies and long-term care insurance companies.

In 2005, in addition to being very large, Healthcare is growing rapidly. Healthcare expenditures increased 9.3% in 2002, 7.8% in 2003, and 7.2% in 2004. Its percentage share of GDP has increased steadily in the 45 years since 1960 with its share of GDP growing from 5.0% in 1960 to 8.9% in 1980 to 15.4% in 2004. This growth reflects a long-term historical trend to rising Healthcare expenditures. In the future, Healthcare's share of GDP is expected to continue to increase every year to 2014 as Healthcare expenditures growth are expected to outpace GDP growth. Over the longer-term future, Healthcare is projected to grow to an even larger share of the national economy. Projected growths in spending for Medicare and Medicaid alone would drive total national healthcare spending to 22.9% of GDP by 2030 and 32.4% of GDP by 2050.

In addition to being very large and growing rapidly, the U.S. Healthcare industry has a high degree of inefficiency. The U.S. Healthcare system consumes a 50-100% greater share of U.S. GNP than countries in the European Union with no significant differences in the health qualities of the population by any standard measure such as life expectancies. There are six major forces impacting the future growth of the Healthcare industry. These are:

- An aging U.S. population
- Growing labor shortages
- New medical treatments
- Technology
- Globalization
- Government policy

The first three forces listed tend to increase
Healthcare costs while the next two tend to decrease Healthcare costs. Government policy is a wild card that can have a widely varying impact depending on the policy implemented.

Macro-trends in the Healthcare industry indicate a growth of the Healthcare industry in real terms as more people are treated by the system and a growing emphasis on productivity to contain both real growth cost pressures and inflationary pressures from labor shortages. An aging population with the percentage of the population over 65 growing dramatically over the next 25 years will substantially increase the demand for Healthcare. Current labor shortages of Healthcare professionals will get worse as training of new professionals does not offset growing demand and departure from the labor force of current health professionals. Technology, particularly information technology, should play a critical role in improving the productivity of the Healthcare labor force increasing the overall supply of Healthcare services.

The critical element in improving the productivity of the Healthcare industry and reducing its cost growth is capital investment in productivity improving technology that will substitute capital for labor. Providing the information technology to upgrade the Healthcare industry will require a massive capital investment and will present a major opportunity for the leasing industry. Huge information technology expenditures by the Healthcare industry are to be expected if the Healthcare industry moves to a technology intensive, capital intensive approach to providing service.

Currently, the Healthcare industry spends approximately 2.5% of its revenues on information technology. If the Healthcare industry increases its spending over the next 10 years to 10% of its revenues (a percentage consistent with other information intensive industries like financial services), then annual information technology expenditures in 2014 in the Healthcare industry would amount to approximately $360 billion, an enormous market. If 30% of this new investment utilized lease financing (consistent with the overall historic penetration of lease financing), it would represent a market of $120 billion in annual leasing volume in 2014. That $120 billion in an annual leasing volume is an amount 15 times the size of the estimated overall annual leasing volume in the Healthcare industry projected for 2005.

A number of factors are converging to make the healthcare sector more receptive to lease financing. Included in these factors are the deteriorating financial situation of hospitals making them more receptive to leasing as an off-balance sheet capital source, the not-for-profit status of 85% of hospitals which closes public equity markets to them as a source of financing, and the large percentage of the Healthcare industry made up of physicians practices which are the classic small business with limited access to capital sources. This trend is already evident in the growth of leasing in its share of capital sources in the Healthcare industry in the period from 1997 to 2002. The growth of equipment leasing from $3.7 billion in new leases in 1997 to $5.8 billion in 2002 was not only an increase in the absolute volume of new leases but also in its share of all new funds with leasing accounting for 7% of new funds in 1997 compared to 16% in 2002. For the future, leasing should show even faster growth in the Healthcare sector than it has in the past if leasing companies utilize traditional best practices to provide high quality, knowledgeable service to the Healthcare industry. The demand for leasing will be there.

However, there are three major risks to the leasing industry in trying to fill the potential demand for leasing. The first is the weak credit quality of the Healthcare industry that will probably get worse in coming years. The second is the rapid evolution of Healthcare technology that could increase the rate of obsolescence of existing equipment and its value as collateral. And the third is changing government policy. Government policy and regulation, along with technology, will play the central role in determining the future of Healthcare. Government is the largest source of direct payment for Healthcare. How government reacts to the combination of an aging population, new Healthcare treatments, health worker shortages, and rising medical costs will be a central force in shaping the environment of the Healthcare area. If government chooses to try to control its Healthcare costs by squeezing reimbursement rates it could further aggravate the weak credit condition of the Healthcare industry and increase risks to leasing companies.
The long-term projection for Healthcare in the United States is for continued growth in real terms and absolute terms including growth in capital spending and growth in leasing as a means of financing the capital spending.

Healthcare in the 25-year period from 2005 to 2030 will be shaped by the interaction from a growing demand for healthcare from an aging population coupled with continued explosive growth of medical knowledge with new treatments for a wide variety of medical diseases and problems and the limit on the resources of society with a continuing struggle to pay for medical care. This interaction will put a premium on productivity in healthcare with increasing emphasis on 1) better, more personalized, less expensive treatments that will keep the population healthier and 2) higher output per individual health worker. Productivity gains will be driven by a wide variety of technology applications in the Healthcare sector many of which will be financed by leasing.

The key question for financial services companies participating in the financing of Healthcare is how these trends will affect them and their long-term outlook. There will be a dramatic growth in potential financing opportunities, but many types of risks will be involved with trying to increase healthcare financing portfolios. For lenders to the healthcare industry, they will face a variety of credit, legal, regulatory, labor, governmental, reimbursement, asset, and other risks.

The U.S. Healthcare Industry

Industry Overview

The U.S. healthcare industry in 2004 was massive, representing a $1.8 trillion annual market that accounted for a very large share of the U.S. economy (15.4% of total Gross Domestic Product, i.e. GDP). These expenditures can be broken into six major categories: hospitals, physicians and clinical services, dental services, nursing home and home health expenditures, prescription drugs, and other medical expenditures. Hospital expenditures and drug expenditures were the first and second largest category of expenditures. Exhibit 1 shows a
breakdown by percent of major categories of healthcare expenditures in 2004 and Exhibit 2 shows a more detailed breakdown in 2000 and the share picked up by Medicare. Healthcare expenditures are growing more rapidly than the overall economy, increasing 9.3% in 2002, 7.8% in 2003, and 7.2% in 2004. Because healthcare expenditures are growing more rapidly than the overall economy, its percentage share of GDP is increasing as it has steadily in the 45 years since 1960 with its share of GDP growing from 5.0% in 1960 to 8.9% in 1980 to 15.4% in 2004.

Though many large private companies operate in the Healthcare sector, small, professional firms are the most significant business form in the Healthcare sector, followed by not-for-profit organizations. Companies participating in the Healthcare sector included facilities companies, medical equipment companies, pharmaceutical companies, and health insurance companies including managed care companies and long-term care insurance companies. As is true in other large industry sectors, some large companies participate in only one industry segment while others participate in more than one segment. In the Healthcare industry many large companies are in both the medical equipment and pharmaceutical segments and other large companies are in both the facilities and managed care segments. Johnson and Johnson and Wyeth are both examples of companies that compete in both the medical supplies and pharmaceutical segments.

**Medical Facilities and Practices**

The biggest organizational employers of physicians are not private, for profit facilities corporations, but the not-for-profit hospitals that account for 85% of the nation's approximately 5,000 acute care hospitals. For-profit and not-for-profit facilities companies provide the buildings and much of the staff of the Healthcare sector. Facilities companies include hospital chains, rehabilitation organizations, assisted living facilities and nursing home chains. Hospital
The Corporation of America (HCA) with 182 hospitals nationwide is a leading example of a for-profit facilities company. Not-for-profit facilities continue to dominate acute care hospitals because of large “missteps” by publicly traded hospital chains that have prevented them from dominating the industry as was anticipated 15 years ago.

The largest concentration of physicians is not in acute care hospitals, but in small medical practices. Independent physicians operating in solo or group practices provide much of the human capital of Healthcare. Of the nation’s 670,000 physicians, 473,000 (70%) were office-based in solo or group practices with 40% of patient office visits to physicians practicing alone. The average size of a group practice is 7 physicians and the median size was 3.

Outpatient facilities represent a hybrid between the traditional small doctor's office and the large integrated hospital. They allow many procedures that traditionally were performed in large hospitals on an in-patient status to be performed on an out-patient basis at lower cost and with more convenience to the patient. These types of facilities are growing in importance and will be a major driver to the delivery system of the future as the healthcare industry is under increasing pressure to improve efficiency and cut costs.

**Medical Equipment and Supplies**

Medical equipment and supplies companies provide all of the equipment and disposable supplies used in Healthcare with the exception of drugs. Medical equipment companies provide everything from bandages to x-ray machines. Commodity-type items supplied by the industry include kits, trays, gloves, gowns, syringes, and other disposable medical supplies. High value-added products supplied by the industry include infusion supplies and equipment, diagnostic and laboratory products and equipment, wound-management supplies, surgical devices, spinal devices, and cardiac products. Worldwide medical device and product global sales were estimated at $220 billion in 2003, $190 billion in 2002, and $172 billion in 2001. Johnson and Johnson is an example of a leading company in this area.

**Pharmaceuticals**

Pharmaceutical companies develop, manufacture and market the prescription and non-prescription drugs that are increasingly central to modern medical care. Pharmaceutical companies are a major growth industry as more prescription drugs are used for both prevention and treatment of disease. Pharmaceutical firms are generally quite large with well-developed manufacturing and marketing operations, often worldwide in scale. The world's pharmaceutical industry is centered in the United States and led by major corporations like Merck and Bristol-Myers-Squibb. Global pharmaceutical sales are projected to reach $570 billion in 2005, up 7.5% from $530 billion in 2004 and up 7.7% from $492 billion in 2003. North America accounted for 53% of global pharmaceutical sales, followed by Europe with 25% of global pharmaceutical sales, Japan with 17%, and the rest of the world with 5%.

Though biotechnology companies are often treated as a separate industry, they are effectively a subset of the pharmaceutical area. The primary activity of biotechnology companies is the development of new drugs that are usually licensed to or distributed through the pharmaceutical industry. Biotechnology promises to usher in a new era of personalized medicine as the 21st Century progresses with DNA testing allowing doctors to identify individuals predisposed to certain types of diseases because of their genetic makeup and to prescribe preventive treatment in advance of the disease onset.

**Managed Care and Long-term Care Insurance**

Managed care companies finance Healthcare through a variety of prepaid or discounted fee for service managed care plans. The managed care segment and the companies that comprise it are generally the primary payment source for Healthcare providers including facilities, independent physicians,
medical equipment and supply companies, and pharmaceutical companies. Aetna is an example of a leading managed care company. Managed care organizations (MCOs) offer two principal types of plans: health maintenance organizations (HMOs) plans and preferred provider organizations (PPOs) plans. Health maintenance organizations are more restrictive on the patient’s choice of physicians and generally try to direct all of a patient’s care through a single primary care doctor “gate keeper” who makes referrals to specialists. Preferred provider organization plans provide the patient with a broader choice of physicians and allow the patient to schedule directly with their physician of choice whether primary care provider or specialists.

Managed care normally does not include financing for long-term care. Long-term care includes a variety of services for individuals with different medical problems. Included in this area are the following services: therapeutic care, rehabilitative care, personal care, respite care, and adult day care which might be delivered at home, in an assisted living facility or in a nursing home. Long term care insurance provides insurance benefits so that individuals needing long-term care have the financial resources to pay for medical, skilled or personal services for an extended time and do not have to deplete their financial assets in order to receive the care they need. Long-term care insurance provides financial protection against a variety of long-term care needs ranging from rehabilitation from an automobile accident to long-term care for Alzheimer’s disease. A long-term care insurance policy is generally purchased separately from the purchase of health insurance by an employer or an individual. Consequently individuals who are covered by medical insurance are not necessarily covered for long-term care.

Growth Projections for Healthcare Industry through 2030

In 2005, in addition to being very large, Healthcare is growing rapidly. This growth reflects a long-term historical trend to rising Healthcare expenditures. Exhibits 3 and 4 provide detail of the historical growth of Healthcare expenditures both on a per capita basis and as a share of GDP and their forecasted growth to 2010.

Exhibit 3 - Historical and Forecasted U.S. Health Expenditures as Share of GDP

National Health Expenditures as a Share of Gross Domestic Product (GDP)

Between 2001 and 2011, health spending is projected to grow 2.5 percent per year faster than GDP, so that by 2011 it will constitute 17 percent of GDP.

In the future, Healthcare's share of GDP is expected to continue to increase every year to 2014 as Healthcare expenditures growth are expected to outpace GDP growth. In February, 2005, Stephen Heffler, director of the National Health Statistics Group in the Office of the Actuary of the Centers for Medicare and Medicaid Services along with several of his associates published their 10 year forecast for health expenditures in the U.S. According to their analysis, Healthcare expenditures in the U.S. will grow from 15.4% of GDP in 2004 to 18.7% of GDP by 2014 with total Healthcare expenditures doubling in that period from $1.8 trillion in 2004 to $3.6 trillion in 2014.

Over the longer-term future, Healthcare is projected to grow to an even larger share of the national economy. According to a December, 2003 study by the Congressional Budget Office titled The Long-Term Budget Outlook, Federal spending on Medicare and Medicaid (which accounted for 2.2% of GDP in 1983 and 3.9% of GDP in 2003) could increase to 11.5% of GDP in 2030 and 21% of GDP in 2050. Even if a assumption is made that there is no change in the share of GDP accounted for by non-Medicare/Medicaid healthcare spending (such as that funded by managed care and long-term care insurance), these projected growths in spending for Medicare and Medicaid would drive total national healthcare spending to 22.9% of GDP by 2030 and 32.4% of GDP by 2050.

In addition to being very large and growing rapidly, the U.S. Healthcare industry has a high degree of inefficiency. The U.S. Healthcare system consumes a 50-100% greater share of U.S. GNP than countries in the European Union with no significant differences in the health qualities of the population by any standard measure such as life expectancies. Healthcare consumed 14.6% of U.S. GDP in 2002 compared to 11.2% of GDP in Switzerland, 10.9% in Germany, 9.7% in France, 9.6% in Canada, and 7.7% in the United Kingdom for the same year. Exhibits 5 and 6 provide comparisons of healthcare expenditures in different countries. However, despite the high level of U.S. healthcare expenditures compared to other countries, the U.S. only ranked 16th out of 22 industrial countries in terms of Healthcare outcomes. The dramatic impact Healthcare costs currently have on the national economy and their even greater impact in the future guarantees massive efforts to improve the efficiency and effectiveness of the Healthcare system with most of this effort being concentrated in capital investment in technology to improve productivity.


The U.S. has had a higher share of GDP spent on health than the OECD median for the past four decades.

*For some years, no data was available.
**1997 data was used because 1999 was not available.

Note: The data is arrayed by spending growth from 1990 to 1999. The medians include all OECD countries.
Source: OCED Health Data 2002


Healthcare Spending Per Capita by OECD Country, 1960-1999

U.S. spending is significantly higher than other OECD countries.

*Expenditures in U.S. dollars using purchasing power parity rates.
**For some years, no data was available.
***1998 data was used because 1999 was not available.

Note: The data is arrayed by expenditure levels for 1999. The medians include all OECD countries.
Source: OCED Health Data 2002
Major Forces Impacting the Future Growth of the Healthcare Industry

There are six major forces impacting the future growth of the Healthcare industry. These are:
- An aging U.S. population
- Growing labor shortages
- New medical treatments
- Technology
- Globalization
- Government policy

The impact of these forces are summarized below and then discussed in greater detail later in the report. The first three forces listed tend to increase Healthcare costs while the next two tend to decrease Healthcare costs. Government policy is a wild card that can have a widely varying impact depending on the policy implemented.

The most significant major force impacting Healthcare expenditures is demographics, a force over which policy makers have little control. An older population requires more Healthcare and the aging of the U.S.’s population is driving up U.S. Healthcare costs. At the same time, a growing shortage of trained labor in the Healthcare industry, particularly for nurses and technically skilled people, is generating significant inflation in Healthcare expenditures. New treatments may make medicine more expensive or they may reduce costs depending on the nature of the treatment. Generally new treatments tend to increase costs by increasing the total amount of care provided.

Technology provides the Healthcare sector with a wide variety of tools to deliver improved care. At the same time technology provides a wide variety of tools to manage the Healthcare sector more efficiently and effectively. Technology is the key to increased productivity in the Healthcare sector that will increase the supply of Healthcare in the face of growing demand and lower its cost. Globalization is also emerging as a major factor in the supply of Healthcare in the U.S. Because globalization brings lower cost labor to the U.S. Healthcare sector it is a force to reduce costs.

Government is the central player in the Healthcare sector. Government at various levels finances healthcare, regulates it, and establishes the legal framework that the industry operates in. Government decisions will be central in determining the nature of, how much and how fast the Healthcare sector grows in the future.

Exhibit 7 - Projections on U.S. Population Over 65

Number of Medicare Beneficiaries

The number of people Medicare serves will nearly double by 2030.

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Disabled &amp; ESRD+</th>
<th>Elderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>56.4</td>
<td>74.5</td>
</tr>
<tr>
<td>1980</td>
<td>77.2</td>
<td>123.0</td>
</tr>
<tr>
<td>1990</td>
<td>22.5</td>
<td>31.3</td>
</tr>
<tr>
<td>2000</td>
<td>94.8</td>
<td>24.5</td>
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<tr>
<td>2010</td>
<td>7.2</td>
<td>20.6</td>
</tr>
<tr>
<td>2020</td>
<td>67.7</td>
<td>32.0</td>
</tr>
<tr>
<td>2030</td>
<td>95.5</td>
<td>68.1</td>
</tr>
</tbody>
</table>

* Numbers may not sum due to rounding. Source: CMS, Office of the Actuary.
Demographics and the Healthcare Industry

A steadily rising median age for the U.S. population means that the average citizen is getting older and is in greater need of Healthcare. The median age of the U.S. population rose from 29 in 1980 to 34 in 2000 and is projected to rise to 41 in 2020. The percentage of the U.S. population over 65 is expected to grow from 13% of the population in 2000 to 20% of the population in 2030 while the absolute size of the age group over 65 doubles. This growth will dramatically increase the number of Medicare beneficiaries. Exhibit 7 shows the trend in the growth of Medicare beneficiaries and their share of the total population. Exhibit 8 shows the changing share of the total population in major age categories between 1950 and 2050. Even more significantly, the age group over 85 is the fastest growing segment of the population. In 2005, this group amounted to 4.5 million and is expected to grow to 6.5 million by 2020. This is the group with the most intense use of the Healthcare system.

An older population means a greater use of the Healthcare system. For example, Americans between the ages of 65 and 74 average 1.3 inpatient days annually compared to less than one-half day for those under 65. The impact of an aging population on the demand for and finances of the Healthcare system can also be seen in the market for long-term care. 70% of the population 65 and older will require long-term care at some time in their lives. The age group over 85 represents the primary users of long-term care services and Alzheimer’s care in particular represents a major source of demand for long-term care services for this age group. Half of those over 85 develop the disease.

Labor Markets and the Healthcare Industry

As the demand for Healthcare services has grown, the demand for Healthcare workers has also grown. Growing demand for Healthcare in the future is expected to create a strong demand for additional Healthcare workers. The Bureau of Labor Statistics estimates that the U.S. will need 5.3 million additional healthcare workers by 2010, 2.2 million to replace departing workers and 3.1 million for additional positions. This demand for additional healthcare workers could add to inflationary pressures in the healthcare sector. Exhibit 9 shows the growth of employment in healthcare between 1985 and 2001 and Exhibit 10 shows projections in the growth of employment until 2010.
Exhibit 9 - Number of People Employed in Healthcare, 1985-2001

Number of People Employed in Healthcare, 1985-2001

Number of people employed in health is growing.

Note: Not seasonally adjusted.

Trends and Indicators in the Changing Healthcare Marketplace, 2002 - Chartbook.

Exhibit 10 - Healthcare Employment Growth Projections, 2000-2010

Healthcare Employment Growth Projections, 2000-2010

Over the next decade, Healthcare employment is expected to grow at a rapid rate.

*Note: Five of the nation’s top 10 fastest growing occupations are in Healthcare.

Already, a major factor in rising medical costs is wage inflation resulting from shortages of trained medical professionals. Growing shortages of trained nurses and medical technicians are feeding wage competition between employers like hospitals with resulting rising wages and high inflation in the health sector that are not being experienced in other parts of the economy. National statistics show that 13% of nursing positions are vacant and that similar levels of vacancies existed for various categories of medical technicians. Between 2001 and 2003, payroll costs at hospitals had annual increases ranging between 7.4% and 9.6% compared to annual average hourly wage increases for all industries ranging between 2.7% and 3.8% during the same 3-year period. The Department of Health and Human Services estimates that the nation's current nursing shortage could get a great deal worse in coming years with almost one million nursing positions vacant in 2020.

In 2004, trends began to appear that indicated a doctor shortage was also beginning to occur compounding the labor shortage in the healthcare sector. The developing shortage of doctors will make it increasingly difficult to restrain Healthcare costs by limiting physicians' incomes. Such efforts will discourage medical school applicants and encourage early retirement by physicians already being buffeted by rising malpractice insurance costs, results that would compound the doctor shortage. Some researchers predict that the U.S. will have a shortage of almost 200,000 doctors by 2020.

Despite the strong demand for trained medical labor, the supply is not growing rapidly because of the difficulty of expanding existing training facilities. Nursing schools are having difficulties expanding to accommodate record numbers of nursing school applicants because of faculty shortages. Medical schools cannot be easily expanded because of the high cost of training physicians due to the growing technology associated with medicine. The current and projected shortages of Healthcare workers will not be reduced by the rapid training of additional workers because of the difficulty of expanding training facilities.

New Treatments and the Healthcare Industry

The history of Healthcare in the 20th century is the history of innovation in the technology of diagnosis and treatment of a wide range of diseases and medical conditions. From polio vaccines to CTscans and MRI’s to penicillin and antibiotics, new medical technology has prevented previously incurable diseases, diagnosed diseases that were before incapable of being detected and treated, and cured diseases that previously could not be cured. The result has been the saving of millions of lives and a substantial extension of life expectancy. However, all of these innovations in the technology of diagnosis and treatment have added to the cost of Healthcare.

This reality can be seen in the cost associated with the growing use of prescription drugs for both preventive care and treatment of disease. Since the mid-1990s, sales of drugs have increased an average of 10% annually in the U.S. reaching total sales of $250 billion in 2004 (approximately half of global sales). Pharmaceutical sales in the U.S. are approximately the same as gasoline sales with pharmaceutical sales the equivalent of an annual $850 fill-up for every American. Between 1990 and 2002, national prescription spending more than tripled and drug utilization increased much faster than population. The average number of prescriptions per person was 7.3 in 1992 and 11.6 in 2002. Exhibit 11 charts the growth of prescription drugs.

Stimulating the efforts of the pharmaceutical industry to increase sales has been its profitability. While development of a new drug might take 15 years and cost $300 million, the rewards of successful drug development with its long-term franchise as a result of 20-year patent protection are potentially enormous. A successful new drug might generate in excess of a $1 billion in revenues annually for the patent holder. During the 1990s, pharmaceutical company profits grew even faster than the industry revenues, increasing at average annual rates of 15%.
Biotechnology with its promise of personalized medicine will add to the use of drugs in the future. Biotechnology is the application of biological knowledge and techniques pertaining to molecular, cellular, and genetic processes to develop products and services. Biotechnology is widely viewed as the next frontier of scientific advancement. The largest category of biotechnology applications is in health and medicine: diagnosing, treating, and preventing disease. In 2000, the National Institute of Health (NIH) funded about 25,000 biotech research projects annually. The goal of biotechnological medical research is better diagnosis and treatment for the approximately 4,000 human diseases caused by defective genes. Biotechnology is predicted to lead to a new era of medicine in which scientists will develop treatments and vaccines that targeted the molecular underpinnings of disease.

Only three decades old, the biotechnology industry consists of firms established to develop biotechnology knowledge and exploit it commercially. In terms of employment, less than 200,000 people worked in the industry. However, the revenues of the industry had more than tripled between 1992 and 2000 from $8 billion in 1992 to $27 billion in 2000. Consequently, the biotech industry is considered one of the premier growth industries in the U.S. economy. Historically, biotech firms, even extraordinarily successful ones, had not grown into large pharmaceutical firms as had been expected in the early days of the industry. Instead, biotech research firms generally sell or license their technology to larger pharmaceutical firms, form joint ventures with them, or sell their entire companies to them with the larger pharmaceutical firms manufacturing and distributing the products resulting from the biotech firms’ research.

The rising cost of Healthcare is generating a healthcare consumerism movement. As medical technology provides more information on patients’ situations and patients are becoming more educated in medical terms, there is a growing trend for patients to play a bigger role in their own care. This is particularly evident in a wellness movement with patients making a greater effort to restore and maintain their health. The Natural Marketing Institute estimates that approximately 50 million Americans, a sixth of the population, is living “lifestyles of health and sustainability” spending $225 billion annually on products and services like organic produce and acupuncture.
This consumerism movement is the market directly targeted by Steve Case (founder of AOL) in his new company Revolution Health Group in which he has invested $500 million of his own money and brought in high profile partners like former Secretary of State Colin Powell, former CEO of Netscape Jim Barksdale, and former CEO of Fannie Mae Franklin Raines. Revolution Health Group is a private company that Case, Powell and the other investors plan to use as a holding company to buy up promising companies that offered consumer focused health services. Two companies already purchased by Revolution are Miraval - Life in the Balance (an Arizona resort and spa company) and Wisdom Media Group, Inc. (a radio and television company focused on health and wellness with 6.5 million cable subscribers and a 24 hour channel on Sirius Satellite Radio). Case has stated that Revolution will help reduce Healthcare costs by offering lower cost services or streamlining the purchase of health insurance.

Technology and the Healthcare Industry

Technology is central to the future of Healthcare. Technology provides the Healthcare sector with a wide variety of tools to deliver improved care. At the same time technology provides a wide variety of tools to manage the Healthcare sector more efficiently and effectively. Technology for diagnosis and treatment is a major source of cost increases in the Healthcare area. At the same time technology for productivity improvement is the major source of cost reduction in the Healthcare industry.

Technology for Diagnosis and Treatment

Advanced technology is central to the quality of Healthcare in the U.S. Medical technology for diagnosis and treatment includes a wide variety of medical devices such as diagnostic instruments, surgical tools, and physical prostheses. Standard technologies like (MRI/CT) and “emerging” technologies like (PET/Optical laser) and (PACS/Digital CR) will have a major impact on both the future delivery of medicine and on medical costs as each generation of medical technology is more expensive than the last. A CT scan replaced an x-ray and the CT scan was replaced or supplemented by a PET scan. The x-ray machine costs $175,000, the MRI/CT machine costs $1 million, and the PET imaging machine costs more than $2 million.

Biotechnology in medicine is a subset of the general category of medical technology. While biotechnology promises better diagnosis and treatment for a wide variety of diseases, its high level of research costs promises to add to Healthcare expenditures in the next few decades. In addition, in fulfilling its promise of personalized medicine, biotechnology will require a whole new array of expensive technology for diagnostic and treatment purposes. So the area of greatest promise for improving diagnosis and treatment will also compound the financial problems of the Healthcare system. It is a classic example of how new medical technology for treatment and diagnosis can lead to higher medical costs.

Technology for Productivity Improvement

Just as advanced technology is central to the quality of care, it is also central to productivity and cost savings in the Healthcare industry. The biggest area of technology procurement for the Healthcare productivity improvement in the future will be information technology. Currently, the Healthcare industry has one of the lowest levels of information technology utilization of any major industry group. In the U.S. according to Gartner Dataquest, healthcare spent 2.5% of net revenues on information technology in 2002 compared to an overall average for all industries of 3.9%.

Information technology has the potential to promote massive efficiency and effectiveness in the Healthcare system. Of 11 major economic sectors including manufacturing, utilities, communication, transportation, financial services, retailing, government, Healthcare, education, construction, and mining, healthcare spending per employee ranked 8th behind all sectors except education, construction and mining on a global basis. The leading sector in spending per employee, finance, spent approximately 25 times per employee the amount spent by the
healthcare sector per employee. Experts in information technology estimate that the Healthcare sector is about 10 years behind other service sectors such as financial services, retailing and government in its application of information technology.

Healthcare information technology applications include electronic health records, computerized physician order entry systems, electronic imaging files systems, computerized medication alert systems, bar coding, electronic prescription drug fulfillment, and electronic billing and claims submission. Healthcare information technology applications also include the special area of telemedicine.

One example of the potential of technology to promote efficiency and effectiveness in the Healthcare system is the area of medical records. A major component of the cost of Healthcare is record keeping of all types. About half of the normal day of a nurse is spent in record keeping and not in direct patient care reflecting the vast quantities of information of all types required by the Healthcare system. Much of this record keeping is done on paper records or on antiquated legacy computer systems. The advent of the Internet along with advanced computer technology promises to cut costs while improving the quality of medical care by getting more information to the right place at the right time at lower cost.

In late April of 2004, President George Bush recognized the significance of electronic medical records when he set a goal for all Americans to have electronic health records within ten years and established the position of National Health Information Technology Coordinator within the Department of Health and Human Services to oversee the achievement of that goal. Dr. David Brailer, a physician and economist, appointed by President Bush to fill the position of National Health Information Technology Coordinator has emphasized the need for more IT in Healthcare stating “If we want a better Healthcare industry, we have to put in IT….. Every other industry that has done that has done it is seeing results”. Dr. Brailer supported his position with the results of a December, 2004 study by the Federal Reserve Bank of New York which showed annual productivity increases of 4.0% in telecommunications, 2.8% in financial services, and 1.5% in retailing from investments in information technology.

The announcement of Dr. Brailer’s appointment highlighted the role of government in stimulating the use of information technology in the Healthcare industry. The significance of the Federal government in affecting the adoption of health information technology cannot be overstated. According to the American Journal of Medicine, in April 2003, most advanced countries had between 50% and 90% of their medical records in electronic form compared to 5% for the U.S. This difference in 2003 was generally due to historic government policy. For example, in Britain, the government (which dominates Healthcare through the National Health Service) has made the implementation of electronic medical records a major priority. The result has been far more extensive implementation of computerization in general and electronic medical records in Britain than in the United States. In Britain, 60% of general practitioners employ electronic medical records, and 30% claim to be paperless whereas in the United States more than 85% of doctors use only pen and paper for medical records according to Forrester Research, a leading IT consulting and research firm.

In June of 2005, the key role of the Federal Government in stimulating the adoption of information technology by the Healthcare sector was recognized by Congress when two of its key leaders, Senate Majority Leader Bill Frist and Senator Hillary Clinton, in a bipartisan effort co-sponsored new legislation titled “Health Technology to Enhance Quality Act of 2005”. The strong bipartisan support for the bill and its wide range of supporters including managed care organizations like Blue Cross Blue Shield, corporate giants like G.M. and IBM, business associations like the U.S. Chamber of Commerce and the National Federation of Independent Business, and labor organizations like the AFL-CIO assure its passage.

The bill implements health information standards that would support the establishment of interoperable health information systems and electronic exchange
of health information. In addition, it codified and made permanent the position of National Health Information Technology Coordinator established by President Bush. And extremely importantly, it authorizes $125 million annually in grants to local and regional consortiums to implement health information technology infrastructure providing funding for the necessary IT investment. It also provides exemptions from Stark and Anti-kickback laws to allow hospitals, health plans, and others to offer health information technology equipment to physicians as long as the purpose is to reduce medical errors, improve quality, reduce costs, improve care coordination and streamline administration thereby reducing a hidden barrier to the adoption of information technology by physicians.

The promise of information technology to streamline and reduce costs while improving service in the Healthcare area goes far beyond the automation of medical records. Telemedicine is a subset of the area of medical information technology. With telemedicine, doctors can monitor patients from afar via voice, data and video hookup and verbally direct medical procedures. Various aspects of telemedicine will allow doctors to treat patients at dispersed locations and eliminate the need for many facilities.

The Department of Defense has invested over $100 million in telemedicine since 1994. In Afghanistan, a video camera suspended over an operating table has been used to transmit images back to Walter Reed Army Medical Center where neurosurgeons help guide operations. In Iraq, telemedicine has been used routinely to diagnose leishmaniasis, a parasitic skin disease carried by sand flies. Digital pictures of infected skin are transmitted to dermatologists based in the U.S. who complete the diagnosis and recommend a treatment via email.

The application of telemedicine is not limited to the U.S military. In Rochester, New York, a “virtual doctor” has been visiting seven child-care centers since 2001 in a federally funded test. Using telemedicine tools wielded by a day care center employee, a pediatrician at the University of Rochester does the diagnosis and prescription through the Internet. The test was so successful that in the spring of 2005, it was expanded to five more day care centers and 10 public schools. At the end of 2005, nine private practices will be hooked up to the test allowing children to be treated by their own doctors without leaving school. Overseas in Finland, the Finnish Government is using telemedicine to bring Healthcare to remote towns and villages without available doctors. As the homeland of Nokia, the Finns are leading the way in bringing telemedicine to Europe.

The potential of information technology to transform the Healthcare industry is clear from the experience of the nation’s first e-ICU developed in the intensive care units of the hospital system of Sentara Healthcare of Norfolk, Virginia. Currently being used in five of Sentara's hospitals in Virginia and North Carolina with technology from Baltimore-based VISICU, the e-ICU system allows doctors and nurses to monitor critical care patients from remote locations via cameras, two-way communications links and computer screens that display patients’ vital signs, diagnosis, progress, and doctors’ notes.

Initially installed in 2000, the system has had an enormous impact on the quality and cost of intensive care in the hospitals using it. By the end of 2004, four years after the initial implementation of the system, it had reduced intensive care mortality by 17%, saving an estimated 300 lives over the four-year period since installation. At the same time, the system had generated significant cost savings for Sentara, reducing overall hospital costs for ICU patients by 26% because of shorter hospital stays and reducing the daily cost of ICU care by 15%. It had also increased gross revenue for Sentara because of additional ICU patients resulting from quicker care and increased referrals. Overall, the system generated a 155% return on the investment in installing the system within 18 months of the initial investment according to Sentara’s CEO.

In addition to information technology to lower the cost of developing and transmitting medical information, another major area of capital investment for productivity gains in the health industry is the area of medical automation. This area should be a huge area of investment for the Healthcare industry in
the future as it tries to deal with rising costs and skilled labor shortages. A wide variety of technologies are being developed to reduce the labor content in nursing services and in laboratory services. The types of technology already developed include: beds for nursing homes and assisted living facilities equipped with sensors to monitor residents 24 hours a day, advanced laboratory equipment that dramatically reduces the amount of labor required to perform routine tests, and bedside robots that assist in the physical therapy of patients recovering from strokes or knee replacement surgery. In Japan, the world's leader in automation and a country with very significant national problems with an aging population, the government estimates that the Japanese domestic market for robotic helpers could reach $10 billion by 2015.

Globalization and the Healthcare Industry

Historically, services such as Healthcare were considered immune from foreign competition because of the local nature of their delivery. Only Healthcare providers close to the customer could service them. This is changing for the U.S. healthcare industry and it could have major impact for its future. Foreign competition is beginning to be felt in the U.S. Healthcare industry in a variety of ways including foreign Healthcare professionals immigrating to the U.S. to take vacant U.S. Healthcare jobs, cheap generic drugs being shipped into the U.S. from abroad, and the travel of U.S. residents abroad to obtain lower cost professional care, particularly for treatments not covered by insurance.

For the future, the biggest area of increased competition through globalization will be in a wide variety of medical support functions ranging from radiologists reading x-rays to secretarial pools transcribing medical dictation as the international development of the Internet makes it possible for many support functions to be provided remotely from low cost labor markets like India. This transfer of jobs overseas for medical support functions has already begun to happen and it can be expected to dramatically accelerate as government and insurance company pressure to restrain high medical costs encourages medical providers to seek the labor savings of globalization.

Overseas outsourcing of radiology services is already a reality for approximately 10% of U.S. hospitals with radiologists from India, Brazil, Australia, Switzerland and Israel routinely receiving and reading electronically transmitted pictures from urgent CT scans, MRIs and ultrasounds taken late at night at U.S. hospitals without radiologists in residence. Nighthawk Radiology Services based in Idaho has 40 radiologists in Zurich, Switzerland and Sydney, Australia serving 600 U.S. hospitals. The development of telemedicine promises to offer direct treatment of patients in the U.S. from doctors located abroad.

Government and the Healthcare Industry

Government policy and regulation, along with technology, will play the central role in determining the future of Healthcare because government directly and indirectly bears the majority of the nation's health costs. Government is the largest source of direct payment for Healthcare. The Federal government currently pays directly 46% of the nation's medical bills. Significant additional governmental payment comes from state government payments. And there is significant indirect cost to the government at both the Federal and state level from tax rules providing for the deductibility of health insurance premiums and various health-related expenses.

In 2004, Medicare and Medicaid accounted for over a one-third share of the nation's Healthcare payments. The doubling of the absolute size of the population over 65 will mean that the population covered by Medicare will double as shown in Exhibit 7 earlier. Already, Medicare payments are a growing demand on government finances. Reflecting increased Medicare benefits, as a result of legislation passed in 2003 that provided a prescription drug benefit, the 2004 Annual Report of the Social Security Trust Fund Trustees showed that the Medicare Trust Fund will be bankrupt in 2019. This failure would occur just as the full weight of retiring baby boomers hit the Medicare system.
Because the Medicare system will be redeeming Treasury bonds for much of the period before its projected bankruptcy, it will be put growing pressure on Federal government finances starting in 2008. With the aging baby boom generation promising the largest group of seniors ever, the growing financial strains Medicare conjure up future political explosions. This issue promises to be at the forefront of many election campaigns as the Congress struggles to keep the system solvent through increased Medicare taxes and premiums and reduced benefits.

Similarly, many state governments are experiencing growing financial pressure from rising Medicaid payments. Started in 1965 at the same time as Medicare, Medicaid provides Health care for low income Americans and individuals with specific medical conditions like kidney disease requiring dialysis. Medicaid is a combined Federal and State program jointly funded by federal and state governments, but administered by states with Federal guidelines. Since welfare reform was enacted in 1997 making many more families eligible for Medicaid, the growth of Medicaid has accelerated. Between 1999 and 2005, the average number of persons covered by Medicaid has grown from 34 million in 1999 to 47 million in 2005 surpassing the number covered by Medicare (41.8 million) to make Medicaid the largest government health insurance program in terms of beneficiaries. Between 1997 to 2004, fueled by this increased enrollment, Medicaid costs increased 85%, growing from $159 billion in 1997 to $295 billion in 2004.

Under the cost sharing of Medicaid between the Federal government and the states, the Federal government pays $.59 of every Medicaid dollar and the states provide $.41. Even before the spurt in Medicaid growth over the last 5 years, Medicaid was a major share of state budgets and accounted for their biggest share of Federal transfer payments. Exhibit 12 shows Medicaid share of state budgets and their share of Federal transfer payments in 2000. Because Medicaid is growing rapidly in terms of its outlays, many states are finding that their share of Medicaid expenses is a very large and growing budgetary item over which they have little control. This growth in Medicaid is becoming a crisis for a number of states because it is forcing them to cut back on other

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**Exhibit 12 - Total State Spending and Federal Funds Provided to States, 2000**

Over nineteen percent of state total spending and over forty-two percent of federal funds provided to states were spent on Medicaid.

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*Note: When only general funds are examined, the proportions change somewhat. Medicaid is the second largest state program in either total or general funds. Source: National Association of State Budget Officers, 2000 State Expenditure Report.*
vital services in order to meet their mandated Medicaid expenses.

An increasing number of states like Florida where Medicaid payments account for more of the state's budget than Florida spends on higher education, police and fire protection combined. Some states are beginning to make efforts to reduce the pressure from Federally-mandated Medicaid payments. The most far reaching of these efforts is in South Carolina where Governor Mark Sanford is pushing the concept of individual Medicaid accounts proposing that Medicaid beneficiaries receive a fixed amount of money annually from which they could buy private health insurance and pay out-of-pocket costs rather than receive the unlimited almost free medical care currently available from Medicaid.

In addition to being direct payers for Healthcare through the Medicaid program, the states are also direct payers for their own labor force and pensioners. When Healthcare costs for their own labor force and pensioners (who generally have generous health benefits compared to the private sector) are added to their Medicaid payments, many states have total medical costs in excess of 25% of their budgets and that percentage is growing rapidly.

Government also provides the legal framework within which Healthcare operates with government shaping the system in a variety of ways from licensing Healthcare providers and facilities to setting the rules governing malpractice suits. A major factor driving Healthcare expenditures is continued growth in medical malpractice suits. Rising malpractice costs hit Healthcare costs in two ways. First they directly increase costs as the costs of higher malpractice insurance premiums are directly passed on to patients. These premium increases are not small. In March 2003, the American Hospital Association reported that 49% of 574 community hospitals in 18 states had experienced a doubling of their malpractice insurance in the two-year period of 2001 and 2002. In addition to the direct cost impact of rising malpractice insurance, there is an indirect cost of malpractice litigation as doctors increasingly practiced defensive medicine ordering marginal tests and undertaking additional procedures to protect themselves against malpractice claims or alternatively leave the practice of medicine altogether, reinforcing labor shortages in the Healthcare area. Legislation to restrict malpractice claims could radically change the cost associated with this area.

How government reacts to the combination of an aging population, new Healthcare treatments, health worker shortages, and rising medical costs will be a central force in shaping the environment of the Healthcare area. Because government payments are primarily in the form of reimbursement of Healthcare charges, changes in the rules governing what charges the government will reimburse can drastically change the revenues and finances of Healthcare providers. This can happen with the stroke of a pen as happened with the Balanced Budget Act of 1997 when reimbursements were adjusted downward by Congressional mandate with significant negative impact on the cash flow and financial situation of many healthcare providers.

**Capital Investment and Productivity in the Healthcare Industry**

Macro-trends in the Healthcare industry indicate a growth of the Healthcare industry in real terms as more people are treated by the system and a growing emphasis on productivity to contain both real growth cost pressures and inflationary pressures from labor shortages. The critical element in improving the productivity of the Healthcare industry and restraining its cost growth is capital investment in productivity improving technology that will substitute capital for labor. Both macro-trends indicate a substantial increase in capital expenditures by Healthcare organizations.

Providing the information technology to upgrade the Healthcare industry will require a massive capital investment and will present a major opportunity for the leasing industry. Huge information technology expenditures by the Healthcare industry are to be expected if the Healthcare industry moves to the type of technology intensive, capital intensive approach represented by Sentara's eICU. Labor shortages of skilled Healthcare workers and rising labor costs will
force the substitution of capital and technology for labor as illustrated in the Sentara eICU model.

Electronic medical records are one of a variety of major productivity IT investments possible in the Healthcare arena that could generate substantial investment. Forecasts of the costs, for the implementation of electronic medical records only (that has already been accomplished in much of advanced world), range from a minimum estimate of $50 billion by the Lewin Group, to an estimated $200 billion in a study completed in early August, 2005 by a group of information technology experts and published in the *Annals of Internal Medicine*. The August study projected a need for $156 billion in capital expenditure between 2005 and 2010 and then an additional $48 billion annually to maintain the system. The study saw hospitals having to invest $53 billion and small medical practices having to invest $50 billion. The higher estimate of capital expenditures for implementing electronic medical records alone will require Healthcare IT expenditures at twice the current rate.

### The General Financial Environment of the Healthcare Industry

The long-term outlook for the general financial environment of the Healthcare industry is not good. The costs associated with increased demand for medical care from an aging population and the growth of new treatments to fill that demand are on a collision course with the human and financial resources available to supply that care. It is likely that this collision will lead to growing financial turbulence in the Healthcare industry. This turbulence will probably first show up in the private payer sector of Healthcare as corporations seek to shed the burden of growing medical expenses and then spread to the Medicare/Medicaid sector of Healthcare as government finds it increasingly difficult to raise revenues to meet growing costs.

Managed care is a relatively new sector of the Healthcare industry and reflects efforts to control Healthcare costs in the private sector. Historically, consumers paid their doctors directly. If they had medical insurance it was not for routine medical expenses, but for catastrophic medical costs resulting from an accident or serious illness. In the 1980s, managed care plans became widespread as more employers offered health insurance benefits and utilized managed care plans as a way to control costs. However, in the early 1990s, a significant share of the population still followed the traditional model. In 1993, managed care plans covered 52% of employees. The remaining 48% were in traditional fee for service or indemnity plans in which the insurance just covered catastrophic medical costs on a reimbursement basis.

In the 1990s, reflecting rapidly growing medical costs and the growth of employer funded health insurance, the traditional model almost disappeared as insurers through health maintenance organizations increasingly funded routine medical costs as part of an effort to contain catastrophic medical costs from serious illnesses. By 2002, managed care plans accounted for 93% of health plan memberships of all covered employees with the remaining 7% enrolled in traditional fee for service or indemnity plans. Because managed care organizations helped control costs through economies of scale, the industry was relatively concentrated with the top 10 MCO companies accounting for over half of the total HMO enrollment in the United States.

However, despite the rise of managed care, Healthcare expenditures and Healthcare insurance premiums are rising. From the spring of 2002 to the spring of 2003, annual premiums for employers’ health insurance plans increased an average of 13.9% that reflected a long-term trend of steadily increasing premiums. This pass-through of rising medical costs to employers in the forms of higher premiums is going to encounter greater resistance from employers who will increasingly try to increase co-pays for employees or drop medical coverage altogether. The growing financial difficulties of General Motors and Ford, that are partially attributable to high Healthcare costs for their workers, will provide a lesson for all American corporations about high Healthcare costs and generate more resistance by employers to increasing premiums.
Similarly, there will be increasing difficulty at both the Federal and state level to increase revenues to cover the demand for increased medical care. Both the Federal government and state governments will be under increasing budgetary pressure in coming decades. The fiscal pressures on the Federal government have already been outlined, but the pressures on the states is just as great making it very difficult for the Federal government to shift any more of the cost burden to the states as it has increasingly tried to do with the Medicaid program. Financial pressures at both levels of government will put increasing pressures on reimbursement rates and the ultimate revenue to the Healthcare system. Squeezed revenues from restricted government reimbursement coupled with the growing capital needs of the healthcare industry will put pressure on industry margins and exacerbate the weakening financial situation of the industry.

**Financing the Healthcare Industry**

*Financing Hospitals*

A report titled *Financing the Future* prepared by the Healthcare Financial Management Association (HFMA) and released in a series of six individual reports in 2003 and 2004 that makes up the total report lays out the financing situation for the hospital segment of the healthcare industry. In the report, HFMA looks at access to capital in the Healthcare industry today, capital spending in Healthcare today, the future of capital spending in the Healthcare industry today, the future of capital access, core competencies in capital planning, and where the industry will go in the future. The key findings of the study in regards to the different topics were as follows.

The HFMA study concluded that hospitals have not been keeping up in their capital spending. The 1990s were a time of under-investment in hospital plants as hospitals adjusted to managed care by cutting patient stays and shifting treatment to outpatient facilities. In the period between 1997 and 2001, capital spending that resulted in fixed - assets grew only 1% annually compared to a 7.7% growth in admissions and a 19.6% growth in outpatient visits.

For the future, hospitals' capital spending is expected to increase substantially. Hospitals will have to invest in hospital plants, technology and equipment. The potential payoff of the information technology is also clear to the CFOs of the nation's hospitals. A survey of hospital CFOs in March, 2004 by The Healthcare Financial Management Association (HFMA) of their planned capital expenditures over the following five years found that 75% of the CFOs surveyed indicated that capital spending in their hospitals would increase an average of 14% annually over the next five year period. This compares to a 1% increase in the period 1997-2001, a period in which capital spending for 41% of hospitals was less than their depreciation allowance. Hospitals in the decade ahead will be increasing capital spending both to make up for inadequate capital spending in the past and to expand capacity to serve a growing demand and to bring in new technology to improve quality of care and efficiency.

Information technology in particular will be a major area of investment. The CFO survey showed various applications for information technology dominating their plans. The top three investments planned by the CFOs was the purchase of digital radiology systems which store, retrieve, distribute and display medical images in digital format (71.7%), the purchase of computerized physician's order entry systems (64.1%), and the purchase of other major IT/information systems (61.3%). The median IT investment by hospitals as a percentage of budget was 2.5% in 2001 and 2.1% in 2002. However, in some hospitals this percentage can be much higher when undertaking development and implementation of major new information technology systems.

The HFMA study also concluded that access to capital in the Healthcare industry today has significant constraints. These constraints included a drop in the amount of capital accessed from traditional sources, a change in the mix of capital sources and a reliance on new sources, and a widening gap between hospitals identified as having broad access to capital and those identified as having limited access. Driving the trends above has been the hospitals' pressing need for capital coupled with hospitals’ diminishing financial condition.
The deteriorating financial condition of hospitals was highlighted in the spring of 2005 by Moody’s and Fitch downgrades of the public debt of healthcare companies and bankruptcy filings by a couple of hospitals. The deteriorating cash flows of hospitals will make financing their capital needs increasingly difficult.

Internal sources of capital for hospitals include operating and non-operating cash flow, investment reserves, and divesting or monetizing assets. Internal sources have been hit by hospitals falling profit margins and falling interest rates that have reduced returns on investment portfolios. To make up for the shortfall in internally generated capital, hospitals have increasingly turned to the sale of owned real estate either in sale-leaseback transactions or complete divestiture of low-utilization properties.

External sources of capital include bond offerings, equity offerings, sales of real estate and other illiquid assets, and charitable gifts. In the period 2001-2002, despite their financial needs, the total amount of external financing raised by hospitals dropped 29% from $51.4 billion in 2001 to $36.5 billion in 2002. This drop in external financing was led by a decrease in bank loans that declined from $19.7 billion in 1997 to $2.7 billion in 2002. Filling the gap from the decline in bank loans was increases in tax-exempt bond issues, increases in equipment leasing and increases in charitable gifts.

Because 85% of hospitals nationwide are not-for-profit entities, most hospitals’ historically have funded major capital projects by tax-exempt bonds. By 2002, tax-exempt bonds had become an even more important part of hospitals' financial mix accounting for 54% of all new funds. Equipment leasing was the second most important source of new funds representing 16% of all new funds (compared to 7% of new funds coming from bank loans). Leasing more than doubled its share of new funds increasing from 7% of new funds in 1997 to 16% in 2002.

Physicians in private practice have been slow in adopting information technology for productivity improvement. In 2005, less than 15% of physicians have switched to electronic records despite the potential gains in productivity and profits. An eight doctor practice with three offices, providing family practice medicine in Atlanta that switched to electronic medical records in 1998 discovered that the $150,000 investment in hardware and software was recovered in less than a year from the $225,000 in annual savings the practice experienced from the elimination of the cost of transcribing notes after patient examinations. However, despite the high payback on switching to electronic medical records on the part of physicians, the majority of physicians have not made the switch.

A key reason is that physicians are not adopting electronic records is the magnitude of the capital investment required, uncertainty with the new technology, and significant change required in clinical and administrative processes. These factors are overwhelming for a small medical practice. Lack of capital and lack of access to capital on the part of many physicians in private practice is one constraint on the growth in capital investment in information technology. Additional healthcare information technology challenges include factors such as many different competing technologies, current software that does not follow a consistent standard, and privacy concerns and regulation. Therefore, the solutions to these issues require more than financial resources.

The National Health Information Technology Coordinator, Dr. Brailer, talks about “the market failure” that makes it difficult for small physician groups and small hospitals to pay for the new information systems they need to improve productivity because of the limited capital in these organizations and their limited access to external capital. Dr. Brailer sees a major role for government in infusing capital into the Healthcare industry in order to improve productivity and reduce the cost demands on the government. The $125 million annual grant program in the proposed bill by
Senators Frist and Clinton is probably the first step in a much larger program of Federal financial support for IT investment in Healthcare.

The Long-Term Future of Leasing in the Healthcare Industry

Estimating the future of leasing in the Healthcare industry requires looking at: 1) where capital expenditure dollars are currently being spent and by whom and how this capital is provided including leasing 2) the future growth of capital expenditures in the Healthcare industry and 3) how leasing might change its share of those capital expenditures. The study titled Healthcare Equipment Leasing, 2003: U.S. Market Dynamics and Outlook commissioned by the Equipment Leasing Association (ELA) and authored by R.S. Carmichael, Inc. provides insight into the current capital expenditures by the Healthcare industry. According to the study, the U.S. healthcare leasing market was $3.7 billion in 1997 and in 2002 totaled an estimated $5.8 billion in terms of annual new lease volume including soft cost financing and peripherals financing. The market was forecasted to grow 8.5% through 2005 reaching an annual level of new leases of $7.4 billion in 2005.

According to the ELA Healthcare study, 65% of the annual leasing volume was for diagnostic equipment (imaging and laboratory), 15% was for surgical and therapy equipment, and 20% was for healthcare information systems and other types of equipment such as patient monitoring and mobile ground transport. The imaging diagnostic market had the highest percentage of lease penetration with 30-50% of imaging diagnostic equipment being leased. Laboratory diagnosis and therapy (lasers) equipment had the next highest penetration with 10-30% of this equipment being leased. Information systems and other types of Healthcare equipment had lease penetration rates of 20% and below.

As indicated earlier, leasing as a share of all Healthcare external financing has been increasing with the leasing share of overall external financing by the hospital industry (the most active segment of healthcare leasing) growing from 7% in 1997 to 16% in 2002. By way of comparison, the Equipment Leasing & Finance Foundation’s State of the Industry Report: 2004 estimated that approximately 30% of all new equipment investment in the U.S. is lease financed.

Though both equipment for diagnostic and treatment purposes and equipment for productivity purposes such as information technology should show growth, the larger growth should be in equipment for productivity purposes like information technology where leasing has its lowest penetration. Cost issues will restrain the growth of equipment for diagnostic and treatment purposes and place greater emphasis on the utilization rates and productivity of existing equipment. The future size of the healthcare leasing market is difficult to estimate because so many variables are at work, but this market has huge potential.

This emphasis on IT investment should result in ever-larger healthcare IT budgets. Between 2001 and 2006, healthcare IT expenditures are projected to grow from $34 billion in 2001 to $48 billion in 2006 and get larger from there. Generally, industry analysts predict that healthcare information technology will experience steady growth in the period 2005-2008 with Forrester predicting 9% growth and McKinsey & Co. predicting 7% growth.

This expenditure on IT could get even larger in the more distant future. Healthcare is estimated to generate revenues of $3.6 trillion in 2014. Currently, the Healthcare industry spends approximately 2.5% of its revenues on information technology. If the Healthcare industry increases its spending over the next 10 years to 10% of its revenues (a percentage consistent with other information intensive industries like financial services), then annual information technology expenditures in 2014 in the Healthcare industry would amount to approximately $360 billion, an enormous market. If 30% of this new investment used lease financing (consistent with the overall historic penetration of lease financing), this percentage would represent a market of $120 billion in annual leasing volume in 2014. That $120 billion in an annual leasing volume is an amount 15 times the size of the estimated overall annual leasing

Leasing may not be able to achieve in the healthcare market its overall historic 30% penetration rate, particularly since that penetration rate is not currently being generally achieved in the healthcare market and is not currently being specifically achieved in the major growth area of information technology. However, a number of factors are converging to make the healthcare sector more receptive to lease financing, a trend that is already evident in the growth of leasing in its share of capital sources in the Healthcare industry in the period.

Rising medical costs will put pressure on reimbursement rates by Medicare/Medicaid and 3rd party private insurers cutting into the cash flow to Healthcare organizations. These cash flow issues should encourage the use of leasing to finance capital investment because of the cash flow benefits of leasing. At the same time, the expected increase in leasing will be reinforced by the small business and/or non-profit status of the majority of Healthcare delivery organizations. This status will make it difficult for these organizations to access the major capital markets for either debt or equity.

Small medical practices will suffer from all the traditional discrimination in capital markets against small, private businesses a sector of the economy that traditionally has major difficulties accessing capital and have been a major source of customers for leasing. Similarly, large not-for-profit hospitals will find public equity markets completely closed to them unlike their for-profit competitors and will find bond markets less responsive than to for-profit competitors because of the lack of equity cushions and equity takeouts for bondholders. Leasing will become increasingly attractive to this sector particularly if leasing companies actively position themselves to be the intermediaries between public capital markets and the financing needs of not-for-profit hospitals using techniques like securitization to diversify risk for sources of capital and lower costs for the not-for-profit hospitals users of capital.

As fewer traditional financial services products like commercial bank loans are available to healthcare services companies, the associated risk that a leasing company will be required to take will require an appropriate return, thus causing higher return requirement and higher interest cost to the lessee, again putting stress on the provider's margins and cash flow. The risks to lending to the healthcare industry are significant, as can be seen in the experience of one of the sectors high-growth areas, biotechnology, where a number of biotechnology firms have failed.

Keys to Success in Healthcare Leasing

The required combination of expertise for success in leasing industry will include an understanding of the general financial benefits of leasing coupled with an understanding of the productivity requirements of the healthcare system and an ability to package and explain leasing services that provide financial benefits and productivity benefits to the medical community. Because of the limited time and capacity of many healthcare providers to focus on the details of their needed capital investment, the most successful leasing companies will be those that compete on service and not on price. This service will be directed to making it easy for customers to lease and showing them how leasing can improve both their cash flow while giving them the benefit of productivity enhancing capital investments by deferring the payment for those expenditures over time.

Because the focus will have to be on service rather than on price, leasing to the healthcare industry will not only provide an opportunity for rapid growth of leasing portfolios, but also an opportunity for high profit margins to well managed leasing companies. However, industry expertise is an essential key to success. General knowledge of leasing will not adequate. A number of lessors have failed over the years entering healthcare with a traditional underwriting or asset risk tolerance and been destroyed when the market takes a negative turn. Healthcare leases are already characterized by a high degree of credit risk (see Annex A) and this situation will probably get worse in the future.
The demand for leasing services should be strong both from the provider segment of the Healthcare industry including private physician practices and the hospitals, as well as the product segment of the Healthcare system, including Healthcare products and services, such as pharmaceuticals and biotechnology, as well as Healthcare technology and medical devices and supplies. The private physician practices will be particularly interested in IT leases that bundle hardware, software and services into a single package making it administratively easy to install electronic medical records systems and other administrative support systems into busy private physicians’ practices. Similarly, because of limited management resources in large Healthcare providers like hospitals, there will be strong demand for turnkey solutions and for broad IT asset management services in large Healthcare providers. Equipment will be required by all sectors to meet growing demands.

However, it is important for lenders to note significant risks associated with providing credit to Healthcare providers. Risks include the fact that the government, at various levels, pays for services, regulates, and establishes a legal framework for the Healthcare industry. The government can change the rules at any time, which complicates forecasting cash flows for Healthcare companies. Labor risks include shortages of trained medical professionals including physicians, nurses, and other specialized medical personnel, as well as difficulty in expanding training programs due to lack of resources. Rapid changes in technology and equipment required pose additional risks. The significant reduction in inpatient hospital care and dramatic increase in outpatient services, as well as the increased use of pharmacological and biomedical treatment for medical problems must also be considered.

Conclusions

Long-term trends in the Healthcare industry show huge potential for expansion of leasing activity driven by the 1) large projected growth in real demand for healthcare services because of an aging population 2) heavy capital investment by the healthcare industry to substitute capital and technology for labor in order to improve productivity and 3) existing low penetration rates by the leasing industry in the Healthcare industry and the potential to significantly increase those penetration rates. Recent growth of leasing to the healthcare industry both in terms of the absolute size of lease portfolios and its percentage of overall healthcare industry financing reinforce the potential outlook for substantial growth in leasing to the healthcare industry.

Despite the potential for expansion for leasing in the healthcare industry, significant credit and industry risks discussed above must be considered (also see Annex A). Current leases to the healthcare industry include a high percentage of small leases to small organizations presenting the leasing industry with all the credit risks associated with small business leasing. Lenders to the healthcare industry will face a variety of credit, legal, regulatory, labor, governmental, reimbursement, asset, and other risks. These risks are borne out by the actual failure rate of leases to the healthcare industry, which are both very high and much higher than both the general rate of failure of leases and lease failure rate of all other industry segments. If the leasing industry is to successfully achieve the potential for growth in the Healthcare industry, it will have to have very careful credit controls and monitoring of those leases.
Credit Risks Associated with Healthcare Leases
ANNEX A

Introduction

The purpose of this annex is to provide an analysis of data that reflect the nature of leasing in the Healthcare sector and the credit risks associated with Healthcare leases, particularly in comparison to the leasing experience of other industry groups. To accomplish this purpose, this annex reviewed healthcare leases contained in the PayNet database with particular focus on their credit quality and then compared and contrasted the results of that review with the results of an earlier study of leasing credit quality, Credit Risk: Contract Characteristics for Success, in a broad range of industries conducted in 2004 by Dr. James Murtagh under the sponsorship of the Equipment Leasing & Finance Foundation.

The PayNet Database

Founded in 1999, PayNet is a members-only data repository that collects and aggregates small business term payment information and delinquency history from the accounts receivable systems of its member companies. The primary focus of the data repository is term payment history information (more than one year) for the commercial equipment finance industry and the primary function of the data repository is to provide information to assist in credit decisions. PayNet has more than 90 members contributing data to the repository including 8 of the top 10 commercial finance lenders. The Foundation and PayNet have established a strategic partnership to allow Foundation researchers access to details of the database for industry research.

Included in the PayNet database are 5.4 million lease/loan contracts from some 1.8 million small businesses with an aggregate value for these contracts of $328.7 billion. PayNet's lease data is concentrated in the truck/trailer, construction, office equipment, manufacturing, and agricultural equipment groups though many other groups are included ranging from medical to aircraft. The database contains over 50 standardized fields including creditor business and financial background, a detailed credit check, current and historical debt levels, creditor payment habits, legal judgments and transaction-level loss information. The database is segmented by geographical region, industry, and equipment groupings to facilitate investigation of specific aspects of the industry.

Credit Risk: Contract Characteristics for Success Report

This annex builds on and is an extension of the Equipment Leasing & Finance Foundation Report titled Credit Risk: Contract Characteristics for Success by James P. Murtagh, Ph.D., January, 2005. Dr. Murtagh looked at the full range of leases in the Paynet dataset. The database that Dr. Murtagh reported dealt with 107,000 leases with 48 fields and reviewed their experience over 12 quarters in order to gain insights into the overall credit quality of leases in the PayNet database.

The report did not look at healthcare as a separate industry group within one of its 10 industry groups, but instead includes healthcare in the industry group called services. In the Credit Risk lease data was divided into 10 industry groups including: 1) agriculture 2) mining 3) construction 4) manufacturing 5) transportation and public utilities 6) wholesale trade 7) retail trade 8) finance 9) services 10) public sector. The groupings follow the broad industry groupings used by the SIC Code system. Of the 10 industry groups defined, services is the largest industry group in terms of number of leases, accounting for 27% of all leases in the PayNet database. However, because services represents a wide variety of industries including financial services and business services with substantially different characteristics from healthcare services, the Credit Risk data on this sector does not provide much insight into the characteristics of healthcare leasing. Consequently, to understand the credit quality of leases in the healthcare sector, it is necessary to go beyond the Credit Risk Study effort and into more detail on the healthcare leases. The following analysis attempted to do this.
Analysis of Healthcare Leases

The approach of the authors’ analysis is similar to that used in the Credit Risk study in that it uses the database of PayNet to develop statistical insights into the credit quality of leases in the Healthcare sector and specific segments within the Healthcare sector such as hospitals and physicians offices, small medical organizations vs. large medical organizations, etc. This analysis used the same definition of credit quality as the Credit Risk report. If a lease has ever been more than 60 days past due, it is defined by PayNet as failed. The same definition of failure was used in the Credit Risk report.

The biggest difference between the two reports is the scope of the study. The healthcare statistical study started with the receipt of a database of 5582 leases from PayNet that represents all leases in their database with healthcare SIC codes or that were healthcare-related according to PayNet that closed between October, 2003 and April, 2005, a period of 18 months. The data provided by PayNet on each lease included the original amount of the lease, the equipment type leased, the nature of the lessee defined by SIC Code and SIC code description, the size of the lessee defined in number of employees, and the credit experience with the lease defined in terms of whether the lease had ever been more than 60 days past due.

The General Analysis of the Healthcare Lease Portfolio

The first step of the analysis of the PayNet database was to determined the general characteristics of the portfolio of leases by developing a breakdown of the leases by the leases by SIC code (Chart 1), a breakdown of the leases by lessee organization size (Chart 2), a breakdown of the leases by contract amount (Chart 3), a breakdown of the leases by equipment type (Chart 4), and a breakdown of the leases by good vs. failed (Chart 5). This analysis showed that the leases were spread across a wide variety of healthcare SIC codes, that the vast majority of these leases were to relatively small organizations for small amounts, and that the leases covered a wide variety of equipment types including many not specifically associated with the healthcare industry like computers, office equipment and trucks. Most importantly, the analysis showed a high failure rate with healthcare leases with an overall lease healthcare failure rate of 26.0% meaning that over 1 in 4 leases had been more than 60 days past due during their term.

Chart 1 - Healthcare Lease Contracts by Industry Classification (SIC Code)
Chart 4 - Healthcare Lease Contracts by Equipment Type

Chart 5 - Healthcare Leases - Good and Failed
The Analysis of the Pattern of Healthcare Lease Failure

Because the failure rate of healthcare leases was so high, in the second step the researchers tried to look in the detail of the healthcare lease failures. Tables 1, 2, and 3 show an analysis of healthcare lease failures by SIC code, organization size and contract size. These tables show that there are some discernable patterns in the failure rate of healthcare leases. The smaller the lessee organization and the smaller the lease contract amount, the higher the failure rate. In addition, high failure rates seem characteristic of leases in SIC codes that are characterized by small professional practices, such as optometrists and dental labs.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Total Number</th>
<th>Failed</th>
<th>Percentage</th>
</tr>
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<tr>
<td>8099</td>
<td>Health &amp; Allied Svs.</td>
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<td>85</td>
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<td>8093</td>
<td>Specialty Outpatient</td>
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<td>24</td>
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<tr>
<td>8092</td>
<td>Kidney Dialysis</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>8082</td>
<td>Home Healthcare</td>
<td>268</td>
<td>60</td>
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</tr>
<tr>
<td>8080</td>
<td>Outpatient Care Fac.</td>
<td>52</td>
<td>7</td>
<td>13.5</td>
</tr>
<tr>
<td>8072</td>
<td>Dental Labs</td>
<td>9</td>
<td>4</td>
<td>44.4</td>
</tr>
<tr>
<td>8071</td>
<td>Medical Laboratories</td>
<td>61</td>
<td>11</td>
<td>18.0</td>
</tr>
<tr>
<td>8069</td>
<td>Specialty Hospitals</td>
<td>32</td>
<td>2</td>
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<tr>
<td>8063</td>
<td>Psychiatric Hospitals</td>
<td>7</td>
<td>1</td>
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<tr>
<td>8060</td>
<td>Hospitals</td>
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<td>Nursing Care Fac.</td>
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<td>15</td>
<td>17.2</td>
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<tr>
<td>8052</td>
<td>Intermediate Care Fac.</td>
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<td>8</td>
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<tr>
<td>8051</td>
<td>Skilled Nursing Care Fac.</td>
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<td>14</td>
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</tr>
<tr>
<td>8050</td>
<td>Nursing Fac</td>
<td>3</td>
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<tr>
<td>8049</td>
<td>Health Practioners Off.</td>
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<td>29</td>
<td>26.6</td>
</tr>
<tr>
<td>8043</td>
<td>Podiatrists</td>
<td>9</td>
<td>2</td>
<td>22.2</td>
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<tr>
<td>8042</td>
<td>Optometrists</td>
<td>50</td>
<td>21</td>
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<tr>
<td>8041</td>
<td>Chiropractors</td>
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<td>8031</td>
<td>Osteopaths</td>
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<td>8021</td>
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<td>8000</td>
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<tr>
<td>No Healthcare SIC code</td>
<td>1281</td>
<td>507</td>
<td>39.5</td>
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</tr>
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</table>

Total Leases 5582 1454 26.0
Table Two
Breakdown of Healthcare Leases by $ Size

<table>
<thead>
<tr>
<th>$ Size</th>
<th>Total Number</th>
<th>Failed</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 million and over</td>
<td>29</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$500,000 - 999,000</td>
<td>42</td>
<td>4</td>
<td>9.5</td>
</tr>
<tr>
<td>$100,000 - 499,999</td>
<td>251</td>
<td>48</td>
<td>19.1</td>
</tr>
<tr>
<td>$50,000 - 99,999</td>
<td>409</td>
<td>98</td>
<td>24.0</td>
</tr>
<tr>
<td>$25,000 - 49,999</td>
<td>713</td>
<td>190</td>
<td>26.6</td>
</tr>
<tr>
<td>$0 - 24,999</td>
<td>4138</td>
<td>1114</td>
<td>26.9</td>
</tr>
<tr>
<td><strong>Total Leases</strong></td>
<td><strong>5582</strong></td>
<td><strong>1454</strong></td>
<td><strong>26.0</strong></td>
</tr>
</tbody>
</table>

Table Three
Breakdown of Healthcare Leases by Organization Size

<table>
<thead>
<tr>
<th>Organization Size</th>
<th>Total Number</th>
<th>Failed</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 or more</td>
<td>109</td>
<td>17</td>
<td>15.6%</td>
</tr>
<tr>
<td>1,000 - 9,999</td>
<td>178</td>
<td>37</td>
<td>20.8</td>
</tr>
<tr>
<td>500 - 999</td>
<td>135</td>
<td>15</td>
<td>11.1</td>
</tr>
<tr>
<td>100 - 499</td>
<td>255</td>
<td>54</td>
<td>21.2</td>
</tr>
<tr>
<td>50 - 99</td>
<td>194</td>
<td>56</td>
<td>28.9</td>
</tr>
<tr>
<td>25 - 49</td>
<td>272</td>
<td>69</td>
<td>25.4</td>
</tr>
<tr>
<td>10 - 24</td>
<td>598</td>
<td>158</td>
<td>26.4</td>
</tr>
<tr>
<td>Under 10</td>
<td>1895</td>
<td>508</td>
<td>26.8</td>
</tr>
<tr>
<td>No data on size</td>
<td>1946</td>
<td>540</td>
<td>27.8</td>
</tr>
<tr>
<td><strong>Total Leases</strong></td>
<td><strong>5582</strong></td>
<td><strong>1454</strong></td>
<td><strong>26.0</strong></td>
</tr>
</tbody>
</table>

The healthcare industry is dominated by a combination of not-for-profit corporations and small professional practices with 85% of hospitals being not-for-profit organizations and the overwhelming majority of doctors and healthcare professionals operating in small office-based professional practices. Both not-for-profits and small businesses are generally known for being weaker financially and poorer credit risks than large for-profit corporations. The credit experience of healthcare leases is consistent with what might be expected in an industry with the organizational makeup of the healthcare industry.
Healthcare Leasing Compared to Other Industries

In its third step, the researchers' analysis compared and contrasted the results of their review of healthcare leases with the results of an earlier study, Credit Risks, conducted in 2004 by the Equipment Leasing & Finance Foundation. The purpose was to understand the credit risks associated with Healthcare leases, particularly in comparison to the leasing experience of other industry groups.

In the Credit Risk study, the researcher calculated an overall industry failure rate of 12.2%. The study went on to determined that as of the first quarter of 2004, leases broken down by industry segment in relationship to all leases and that the failed leases experience within specific segments was as follows:

<table>
<thead>
<tr>
<th>Industry Segment</th>
<th>Percentage of All Leases</th>
<th>Failed Leases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, Fishing</td>
<td>5%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Mining</td>
<td>1%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Construction</td>
<td>12%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>17%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Transportation, Public Utilities</td>
<td>13%</td>
<td>17.6%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>7%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>5%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Finance, Insurance, Real Estate</td>
<td>8%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Services</td>
<td>27%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>5%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

The three largest sectors in terms of percentage of all leases, Services, Manufacturing, and Transportation/Public Utilities, also were the highest in terms of failed leases with all having failure rates above the overall industry average of 12.2%. In the Credit Risk Study, healthcare leases were included in the Services category and included 28,971 leases in the first quarter of 2004 with 13.4% failure rate. Based on the dataset provided by SIC code for this study, it would appear that less than 20% of the leases included in the Services category had healthcare SIC codes.

It should be noted that healthcare leases overall failure rate of 26.0% (as determined by the effort of this study's researchers) was above all industry averages. It was substantially higher than the overall failure rate of 13% for the services sector that healthcare is included in. And it is substantially higher than the all the sectors analyzed by the Credit Risk Study. The highest failure rate by major sector is in the Transportation, Public Utilities sector that had an overall 17.6% failure rate, substantially below the 26.0% rate experienced by the leases in the healthcare sector. Clearly, healthcare is a much riskier sector for leasing than the sectors that represent the traditional business of leasing.

About the Authors

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Cindy Eddins Collier, MHA, MSA, CPA, ABV, CVA, CMPE, is the Chief Executive Officer and Founder of Valuation Solutions located in Columbus, Ohio. With over 25 years of experience in the health care field, and over 15 years of full-time professional valuation experience, Cindy provides valuation and strategic financial management consulting services to health care providers throughout the United States. In a variety of litigation cases throughout the United States, Cindy has served as an expert, or as a consultant, or as a valuation arbitrator in cases involving health care and valuation issues; performed financial and technical analyses; prepared interview, deposition and pre-trial materials; critiqued damage models and theories; supported the drafting of various briefs and filings; and provided technical research. Cindy speaks nationally on a variety of topics related to business valuation and strategic management in the health care industry. In 2004, Cindy was appointed to the National Business Valuation Committee of the American Institute of Certified Public Accountants (AICPA). In addition, she has served as a technical reviewer and national faculty member for the AICPA and the National Association of Certified Valuation Analysts (NACVA). In a national election, she was elected by NACVA members to serve 3 year term (2001-2004) as a member of the National Litigation Forensics Board.

Cindy has served an adjunct professor at the Duke University Fuqua School of Business and a Visiting Scholar at the Ohio State University Fisher College of Business, Department of Finance. Cindy serves as a Center Scholar in the Center for Health Outcomes, Policy, and Evaluation Studies (HOPES) at the Ohio State University School of Medicine. In addition, Cindy is a guest lecturer in the Duke University Medical School in Durham, North Carolina, and in the Darden Graduate School of Business at the University of Virginia in Charlottesville, Virginia. In 2002, Cindy was awarded the Batten Institute Fellowship at the Darden Graduate School of Business, University of Virginia, Charlottesville, Virginia, a lifetime fellowship. She teaches MBA courses and advises students at Darden in the area of health care finance. In addition, Cindy has served as an Adjunct Professor, Life Care Planner Program Faculty, Capital University Law School, Columbus, Ohio, since 2003. The Capital University Law School Life Care Planner program has been approved by the Commission on Health Care Certification (CHCC) as well as the American Bar Association (ABA). Cindy served as a member of the 2004 Board of Examiners for the Malcolm Baldrige National Quality Award, administered by the United States Department of Commerce, National Institute of Standards and Technology. Cindy's education includes: University of Virginia, Master of Science in Accounting Duke University, Master of Health Care Administration, and University of Virginia, B.A. in Psychology with Distinction.

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