

Pittsburgh  
As seen in *Hospital News*

## Cardiovascular Care — Yesterday, Today and Tomorrow

Providers in the cardiovascular medical profession are currently experiencing concerns and fears for the future. Heart disease continues to be the #1 killer in the United States and is responsible for 41% of all deaths with no cure in site. At present, 767,000 Americans are still dying suddenly from acute heart attacks. The cardiovascular patient population can be accountable for approximately 40% of hospital revenues and amounts to approximately \$260 billion per year.

**As a hospital provider, what do these astonishing numbers mean to you and how do you plan to meet future patients needs?**

The American population continues to age and according to the US census, the number of individuals over the age 65 has doubled in the last 20 years. Technological advancements continue to be on the up swing leading to an increased demand for provision of cardiovascular services. In the past, heart disease has been treated in a reactive or episodic manner with little or no preventative management. Hospitals need to strategically plan if they are going to survive in such a demanding and competitive market.

### **A Look at the Past:**

In the early 1900's, only 5% of the population had any form of health insurance and insurance was not readily available until the 1950's. From 1940 until 1964, private health insurers began to reimburse physicians and hospitals for services. By 1965, 60% of the United States population had some form of insurance but no plans were available for individuals over the age of 65. There were few medical specialists in the 1960's and medical treatment was limited. The consumer receiving medical care did not question medical actions and there was little or no focus on preventative care. In 1965, Medicare was introduced which has proved to be instrumental in shaping our current medical system. It was also during this period that the concept of for-profit hospitals became a reality.

In 1941 the first human cardiac cath procedure was performed. A wave of rapid advancements and technology including open-heart surgery occurred in cardiovascular medicine during the 1960's. In 1975 less than 20% of the US Cardiologists were performing heart catheterizations. Percutaneous Transluminal Coronary Angioplasties (PTCA's) were not performed until 1977. In 1983, 33,000 angioplasties were performed and in 1992, this number totaled more than 400,000. Intra-coronary stents were approved in 1993. The use of these devices resulted in a significant reduction in restenosis of 20-30%. In 1997, over 1 million PTCA's were performed. Cardiac Cath labs and non-invasive cardiac testing began to emerge during this period but open heart surgery was still the first line of treatment for Coronary Artery Disease.

The heart lung machine was used on animals as early as 1939 with the first human Open Heart Surgery procedure in the 1960's. Mortality rates during this period ranged as high as 30%. Heart transplants and mechanical circulatory assist devices were being trialed but research methodologies remained limited. The first human heart transplant was performed in 1967 and the first elective artificial heart was done in 1982. In 1970, open heart surgery procedures totaled less than 40,000 annually and in 1989 the number reached over 330,000. During this era of technological advancements, Heart Institutes began to emerge which developed into research centers, which provided cardiac focused cost effective care.

### **Cardiovascular Care today:**

Today cardiac disease is finally recognized as a chronic condition that requires ongoing management with periodic therapeutic interventions. There has been an increased focus on preventative care, detection of the disease at its earliest stages thereby limiting the disease progression to an acute level. According to the American Heart Association and American College of Cardiology, between the years of 1970-1988, the use of technological advances reduced heart disease by at least 30%. Angioplasty procedures increased 1500% between 1980 and 1990, which have contributed to an overall reduction in cardiovascular mortality rates.

Advancements in new testing such as Peripheral Angiography, Magnetic Resonance Imaging and Ultra-fast CT have been instrumental in the diagnosis of cardiovascular disease.

GP Inhibitors, cholesterol reducing agents and other medications for cardiac disease, have shown a significant positive impact with clinical trials ongoing. In the 1990's, minimally invasive heart surgery emerged resulting in decreased hospital LOS and costs. This advanced technique provides better outcomes for the patient resulting in fewer complications, less pain and smaller incisions.

Other procedures on the forefront include Brachytherapy, Intravascular Ultrasound, Transmyocardial Revascularization, and Genetic and Cellular Remodeling. Congestive Heart Failure still accounts for 400,000 – 500,000 diagnosed cases annually. Current therapies have reduced the mortality rate at 1 year by 20-30%, but the disease continues to have a 50% mortality rate at 5 years, leaving room for momentous improvement.

### **Preparing for the future:**

Cardiovascular providers must accept, embrace and prepare for the future to ensure success. There will need to be augmented provisions of rehabilitative care and services with an ongoing focus on "Cardiovascular Centers of Excellence". Minimally invasive cardiac surgery, robotics, transplants, advancements in anesthesia and perfusion, non-invasive tests, cellular, genetic testing and vaccines will all be significant components in cardiovascular care. The educated consumer will want access to these new innovative procedures. Providers are going to have to implement "Best Practice" as the standard of care as consumers will accept NO less. The use of external benchmarking and developing program report cards will be an essential element in the management of cardiovascular services. Providers need to track and document all improvement initiatives and cost management strategies that demonstrate top-notch clinical and financial outcomes.

Most notably, providers need to conscientiously foresee and partake in strategic planning and management initiatives to anticipate volumes and rapidly changing technological advancements to appropriately accommodate for these changes. Physicians and hospitals must work closely together to develop physical and organizational structures that will enable them to respond quickly to market demand, provide "unsurpassed care" and allow them to capture contracts and deliver care in a cost efficient manner.

Over the next decade, cardiovascular providers need to design and manage for continued change and rely on the business basics of customer services, diligent management, and market responsiveness. Organizations need to provide "state of the art" technology advancements, dedicated leadership and a team of clinical and business experts to confidently master the challenges that are certain to bring more excitement to cardiovascular care in the years ahead.

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