Health Care Visions News
Consultants Specializing in Cardiovascular Programs 3rd Quarter 2008

Decreasing Door to Balloon Time

The Pre Hospital ECG

Door to balloon time for the primary PCI patient is a critical cardiac quality indicator; shorter times correlate with better outcomes and higher survival rates for patients. The length of time from symptom onset to balloon inflation has been shown to be significantly correlated with one-year mortality. The ACC/AHA guidelines recommend a door to balloon interval of no more than 90 minutes and JCAHO has also adopted this as a core quality measure. There are several alliances that provide evidence-based strategies to help reduce door to balloon times. There is also numerous literature outlining best practices that work to reduce times. For some facilities, however, achieving the 90 minute timeframe is a challenge.

When reviewing the entire process for achieving the 90 minute door-to-balloon time most institutions look at what takes place from the time the patient enters their door to the time of balloon inflation, however evaluation and treatment in the field (pre-hospital) is a very important part of this process and can help reduce door to balloon times.

The single most important aspect of pre-hospital care is the performance of the 12 lead ECG in the field. The ECG can be readily obtained in the field without any undue delay in transporting the patient and having that ECG available on arrival to the ED to hand to the physician for immediate diagnosis (as opposed to getting the 12 lead in the ED) can save valuable minutes. Some of the fastest door to balloon times have been achieved by hospitals with paramedics who perform 12 lead ECGs in the field. Having the ECG interpreted immediately, however, can save even more time. The ECG can either be transmitted to the emergency department physician or the interventional cardiologist via wireless technology, for immediate diagnosis. Prior notification of a STEMI patient's arrival allows time saving decisions to be made such as early activation of the on-call cath lab team. Studies have shown that paramedics equipped with pre-hospital ECG devices that allow wireless transmission to the emergency department while in the field or in route to the hospital can reduce the time it takes to diagnosis and treat a STEMI patient by more than 30%. There

Continued on Page 6

Confessions of an Atrial Fibrillation Patient

I have Atrial Fibrillation!

Barb Sallo

I was diagnosed with "lone atrial fibrillation (AF)" last spring. This classification is used when there is no evidence of heart disease and no cause can be found. Aside from having a few extra pounds (don't we all), I have none of the risk factors typically associated with atrial fibrillation, no hypertension, diabetes or hypercholesterolemia. I am physically active, a part time ski instructor in the winter, long distance (30 miles/day) bike rider one to two times a week, gym work outs three times a week and Jane Fonda workout five times a week. When in atrial fibrillation, I am able to feel my heart "beating" but am otherwise symptom free.

My History: I had felt "palpations" prior to March 2007 but they were short lived and infrequent. Last year I began to feel short of breath during a conversation. As it turned out I was in rapid AF and was admitted to the hospital for possible cardioversion. Medical therapy with Batapace (a beta-adrenergic blocking agent) was initiated and my heart rhythm was restored to normal.

Following this hospitalization, I wore a rhythm monitor for two weeks and eventually had to discontinue the Batapace because it reduced my heart rate too much. I was then prescribed antiarrhythmics, the first of which was Flecainide (with several dosing adjustments). The AF was not controlled by the Flecainide, so it was replaced with Propafenone. This medication stopped the AF, however, I went into rapid atrial flutter shortly after. The atrial flutter was much harder to tolerate and by November, I was back on Flecainide.

With the continuance of the arrhythmia, I began to explore the option of a catheter ablation. Electrophysiologists have been providing this treatment option for several years. After thoughtful consideration I made the decision to have a linear ablation (catheter maze procedure). In a linear ablation, the physician uses ablation catheters to create a maze-like pattern of scars on the inside of the left atria. These scars interrupt the formation of wavelets and permit (hopefully) normal electrical impulses from the SA node to the AV node to initiate a normal sinus rhythm heart beat.

Success rates have been improving, but as my physician succinctly stated, "having a linear ablation is no walk in the park." I had to express why I wanted to have the procedure as part of the work up. I shared that I am relatively young, active and dislike the thought of taking Warfarin and antiarrhythmic drugs for the rest of my life. Previously, I had been taking a 325mg of Aspirin daily until I saw the electrophysiologist and was started on Warfarin. With my active lifestyle, the long term use of blood thinners is of great concern to me.

With thoughtful consideration I have been accepted for the linear ablation. I had a (required) normal nuclear stress test and look forward to having the procedure next month.

What Happens with Linear Ablation Treatment?

The procedure requires a five day hospital admission. The day prior to the ablation, I will have a transesophageal echocardiogram to ensure I do not have any blood clots inside my heart chambers that could embolize during the ablation. I will also have a chest/cardiac CT to depict my anatomy.

Since I will not have to participate during the procedure, I will receive general anesthesia so I can sleep through it. The ablation can take up to five hours to complete. Heparin will be administered during the procedure and the infusion lines will remain in until the next day.

Days three to five will be for adjustment of the blood thinners. I will go on Warfarin and continue to take the antiarrhythmic medications for a period of time. My physician reported that the left atria will be "really mad" (he actually used a more descriptive word that I don't think I should print) and may work hard to attempt to get me to have AF. The goal of the procedure is to build a "fire wall" of scar tissue and this takes a little time to develop.

This column is my version of a reality show—about a medical condition that I want to eliminate. I chose to have the ablation, so stay tuned for my column in October.

I am just one example of how hospitals must get ready for all the "baby boomers" that are going to need a plethora of cardiovascular diagnostics and treatment in the not so distant future.

The Quality Edge

Choosing a National Registry Data Base

Rose Czarnecki

Quality improvement has been a focus of health care providers and third party payers for some time and has the attention of the patient population as well. Quality improvement programs provide ongoing processes that utilize objective measures to monitor and evaluate the quality of services provided. These programs are aimed at improvement; assessing where you are and identifying ways to get you to where you want to be.

Efforts to assess and improve processes need to be driven by reliable data. Data is the means to allow accurate identification of problems and permit objective assessment of changes. Most health care organizations collect, aggregate and analyze data, then transform it into a presentable format for internal reporting and/or submission to external organizations. This practice may or may not allow the organization the opportunity to do any type of comparative assessment to evaluate their performance against external standards.

Most cardiac catheterization laboratories are involved in some type of quality improvement initiatives, however; unless they participate in a national database they may not be able to benchmark themselves against other labs and best practices. Therefore, cardiac catheterization laboratory administrators may be looking to participate in a national registry such as the National Cardiovascular Data Registry (NCDR™ CathPCI Registry) from the American College of Cardiology or Goodroe Healthcare Solution's CathSource (private vendor). These national registries can provide administrators with comparative benchmark data that can be used to make improvements in their labs. The ACC/AHA/SCAI highly encourages institutions to participate in a state, regional, or national registry and some states require it.

Prior to making a decision regarding which registry to join, health care organizations should complete a due diligence process. This process should begin by assembling a selection team. Membership on this team could include representatives from administration, the medical staff, quality improvement, information systems and the director and/or manager of the cardiac cath lab.

Once the team is assembled the first order of business should be to decide which national data registry to join. Once a list of registries is compiled, each member should be assigned a registry to investigate. Most registries' websites provide enough information to enable the team to determine if they should consider them as a possible choice. Along with determining that a registry can provide you with the data you want, you need to know the program requirements, membership cost and what education and training will be provided for your staff. With this information, the team can decide which registry would match the needs of the institution's quality improvement endeavors.

Once you have identified the registry that meets your requirements you should apply for membership. Most registries' websites provide enrollment information. Some registries provide the actual enrollment forms and instructions for submission, others only provide contact information. This process may take some time and some software vendors may require that you present proof of membership prior to purchasing their applications.

The next step is to determine what data entry software is required for your registry. Some registries' provide their own software and others have several vendors that supply their software. If your

Continued on Page 6

Whose Cath Lab is it Anyway Part VI

The final installment of "WHOSE CATH LAB IS IT ANYWAY?" will look at a couple of selected operational management and outcomes oversight issues in the ever-changing world of interventional cardiology. Operational management means not only dealing with the day to day operations but playing a role in the long term planning for cardiac services as well. Several operational issues have been addressed in previous articles in this series including staff education and training, staffing mix, inventory management and case scheduling. In this article future department planning and staff/room efficiencies will be addressed as well as how to best manage outcomes oversight with registry use.

Marsha Knapik

...periodically consider what role the cardiac catheterization laboratory will play in the hospital's "big picture" ...

One vital aspect of management is planning for the future, not only for the department itself, but for the department's role within the organization. It is critical for the cath lab manager to periodically consider what role the cardiac catheterization laboratory will play in the hospital's "big picture" in the next 1-5 years. The manager must keep abreast of new

technology and equipment not only for the cardiac cath lab, but for areas and services that may, in the near future, compete with the cath lab for patients. In other words, not only what is going on in cardiac catheterization and interventions, but what is going on in cardiac CT, cardiac MRI and other diagnostics that may impact patient volumes (in turn impact staffing, room use, supply budgeting, etc.) in the future. Knowing the potential impact of other services will assist the manager of the cath lab to plan for his/her own department's changing needs. Thus, it goes without saying (but I am saying it anyway) the manager must be well read and constantly conversing with their peers in terms of what is going on in cardiology services overall. This includes in depth conversations with your cardiologists in regards to their future plans for use of the cardiac cath labs or other hospital imaging modalities. In these discussions it is important to determine if they have any plans to pursue these imaging modalities off site (i.e.: use of office based cardiac CT, MRI or other imaging modalities) which could impact volumes of in-hospital procedures. Most hospitals have a long term strategic plan and cardiac services are usually a part of that plan. The cath lab manager must be prepared to contribute detailed information to that plan and be able to defend the information with factual data.

Another aspect of operational management is the cath lab manager's responsibility to improved efficiencies in lab or room use. This can create the need for occasional time and observation studies to review how staff is currently used in the room and determine if it can be done more efficiently. The majority of cath labs staff with three personnel in the room for a case, but there are times during a low risk diagnostic case that two personnel may be sufficient. Is there a way to "float" the third staff member elsewhere or have other duties that person can perform in these instances. Likewise, in some complex cases a fourth person in the room is advantageous. Is there a way to staff so that additional personnel can be moved into and out of rooms on an as-needed basis? There is no easy answer to this but certainly the manager must always be looking at creative staffing options to maximize use of staff in the down times but yet have adequate staff available when the need arises.

The efficiency of room use can also be an issue in regards to case "turnaround time". That is, how quickly can the room be available for use from the time of case completion until the room is cleaned, prepared and ready to accommodate the next patient.

Whose Cath Lab is it Anyway Part VI(con't)

Periodically the manager should review the average case turnaround time to identify issues that can be addressed to allow this process to be expedited. Rose Czarnecki, senior consultant at Health Care Visions, Ltd., has addressed this in detail in the February 2008 issue of Cath Lab Digest (volume 16, issue 2) in an article titled "An Evaluation of Cardiac Cath Lab Turnaround Time." I urge you to review this article for information on how to evaluate your turnaround times.

Outcomes oversight in the cardiovascular laboratory is another management function that is important for several reasons including; the desire to insure that quality care is being provided; minimizing complications or poor outcomes decreases costs, and; consumers are increasingly looking at a facility's quality data and outcomes when they make a physician or facility selection for their health care and the care of their loved ones.

Today it is not enough to just track and report data on cases, but hospitals must use that data to determine if they are meeting the standards set by their professional organizations and regulating bodies (state, JCAHO, ACC, etc.). Data is also being used by hospitals to market their programs in this new age of competitiveness.

One way to insure not only that data is being collected and reviewed but actually benchmarked against like facilities, national standards and best practices is by involvement in a data registry. Several data registries are available for membership and provide varying levels of data aggregation and feedback to the hospital. Registries are available from national organizations such as the American College of Cardiology as well as from private vendors. Another article in this newsletter looks more closely at selecting one of these registries to meet the hospital's information and outcomes management needs.

As you can see, the cath lab manager must not only address day-to-day operations but look at longer term issues such as outcomes benchmarking and forecasting service volume trends and service types as well as continue to strive for improved staffing/room efficiencies. These are the "broader" management issues that contribute to and help set the stage for hospital long term planning strategies for cardiac care.

This concludes the series. I hope you have found the series to be useful.

The Quality Edge (con't)

Continued from Page 3

registry has multiple data entry software vendors, you need to be able to make an informed decision before you purchase. Most vendors provide product information on their website. You can also contact each vendor to discuss the features of their software to determine if it will meet the needs of your institution. Once you have narrowed your search down to two or three vendors request that they do an on-site presentation for the group. Prior to these demonstrations, you should compile a comprehensive list of questions to pose to each vendor.

After the demonstrations, one or two team members should compile an analysis outlining all the institution's required software features and indicating how each vendor provides these features. This will allow all team members to make a side-by-side comparison and provides them with all the necessary information to make a decision as to which software to purchase.

Atrial Fibrillation (AF) Facts

- ♥ 2.2 million Americans have AF
- ♥ About 15% of strokes occur in people with AF
- ♥ The likelihood of developing AF increases with age
- ♥ Three to five percent of people over 65 have AF

Source: AHA

Decreasing Door to Balloon Time (Con't)

Continued from Page 1

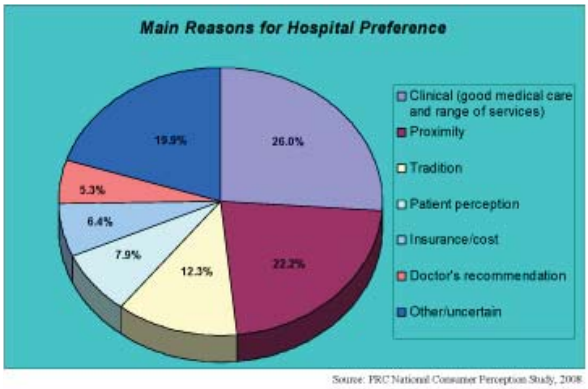
are some progressive hospitals and EMS systems that allow the EMS provider to diagnosis a STEMI in the field and activate the cath lab team immediately without input from the emergency department physician or cardiologist. This practice can further reduce door to balloon times.

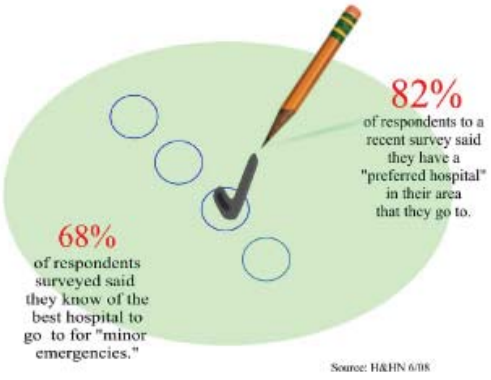
There are some barriers to implementing pre-hospital ECG programs. They include the costs of the device, education and training and on-going competency assessment. Presently new (pre-hospital) ECG equipment costs can range anywhere from 20 to 40 thousand dollars and depending on the number of devices an institution needs, can be a huge financial burden on them. Hopefully, this cost may decrease in the future as pre-hospital ECGs become a standard, just as we saw with AEDs.

Paramedic education for ECG is currently a component of the National Standard Curriculum; however, it is still considered "enhanced" rather than "core" education so some paramedics may not be trained in doing a 12 lead ECG, let alone interpreting it. Developing and implementing an ECG education and hands on training program can also be costly as well as time intensive.

The use of pre-hospital ECG programs will allow a greater number of STEMI patients to receive treatment quickly. Whether the ECG is transmitted to the emergency department for rapid interpretation or EMS diagnoses the STEMI in the field, this advanced notification has the greatest potential for decreasing time to balloon inflation. Early activation of the cath lab team will have care providers ready for the patient's arrival saving precious time.

Interesting information regarding how consumers chose their healthcare facility/providers





Would Your Critical Care and Cardiovascular Education Make the "Dean's List?"

Health Care Visions, Ltd. offers easy to access, affordable, *remote education* sessions without leaving your hospital campus. Education content includes critical care and cardiovascular topics. We provide educational programs that support and enable staff to contribute effectively to the care and recovery of these targeted patient populations.

Approach

Your hospital staff receives a live audio presentation taught by Masters prepared clinical nurse experts while they view PowerPoint slides. Our programs are prepared to meet established standards and provide participants with continuing educational requirements.

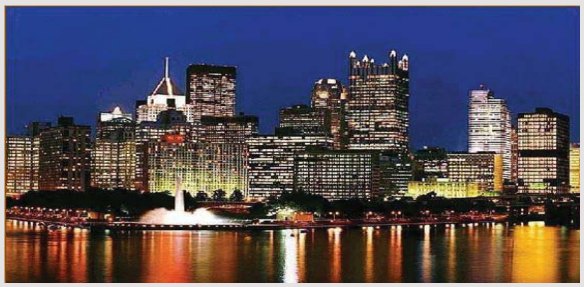
Pre-presentation consultation and discussion with hospital leadership will permit the didactic sessions to be customized to meet your hospital's specific educational needs.

Dates and times of sessions are scheduled to accommodate optimal participation and maximize hospital staff attendance.

Program Benefits

- PowerPoint presentations provided for continued hospital use
- No travel for presenters or hospital personnel
- Unlimited attendees
- Flexible scheduling and repeat sessions available
- CEU application materials provided: course outline, objectives and post test
- Interactive discussion and questions are an integral part of the program
- Cost effective method to enhance professional development
- No minimum number of sessions required

Education topics that are available are listed on our web page: www.hcvconsult.com
(click on the "Education" link at the top).



Health Care Visions, Ltd.
3283 Babcock Blvd.
Pittsburgh, PA 15237

(412) 364-3770

hcv@hcvconsult.com
www.hcvconsult.com