An Interview with Jeffrey L. Bowman, M.D., M.S.
St. Vincent Hospitals / Health Services
Human Resources - Associate Health
Medical Director

Question A:
Partner Demographics/Distinguishing Characteristics: Provide a summary of your organization in terms of affiliation/ ownership, location(s), # of beds, doctors, and nurses etc. Also, list any distinguishing characteristics that separate your institution from your competitors such as the type of services offered and whether it's a teaching facility. Last, list any local /national recognition awards your institution has recently received.

We are a large, non-profit, healthcare ministry that is part of an even larger national healthcare system, known as Ascension Health - which employees over 87,000 Associates and 1400 physicians. There are over 51 local healthcare ministries in the Ascension Health system; each one has their own respective regional presence. Ours, in Indianapolis, St. Vincent Hospitals and Health Systems, is one of the largest - approximately 7500 Associates, 2500 Medical Staff, and a few thousand more allied health and temp workers. We have approximately 750 beds and provide over 150,000 patient services each year. We also have a nearby sister hospital, Carmel St. Vincent. They represent additional beds and additional outpatient services as well as inpatient services - they are an upcoming hospital in a suburban setting. There are several other hospitals in our Indiana region, known as the Central Indiana Healthcare System. Our regional referral center includes general medicine, oncology, maternity, neonatal, perinatal care, sleep disorders, orthopedics, sports medicine, urology, neurosurgery ophthalmology, microsurgery, laser surgery, cardiovascular surgery, occupational health, cardiovascular services, pediatiric care, family care, and more to come. We are a teaching facility, and have one of the highest volumes of invasive cardiovascular services in the world - we just added a cardiology fellowship and have a close relationship with the Indiana Heart Institute. We were recently named one of the top 100 hospitals and top quality hospital award winners, and have been represented as a top hospital in cardiology programs by the US NEWS and World Report.

We have a lot to be proud of. Our medical residency programs and clinics are exceptional. We are training physicians to become the best and brightest - a lot of them stay, or, return after more advanced training.

Our customers, families, and community businesses are the key to our successes. There is an extraordinary match between exceptional caregivers and the communities we serve.

Question B:
Point-of-care Goals and Strategies: Explain how your patient-computing model worked prior to your implementation of Infrared network access system. What were the disadvantages associated with this method of providing patient care in terms of physician satisfaction levels, productivity, and the overall efficiency of your organization?

In general, the scope of infrared use has been limited to our palm devices. Previously when we used the palm devices we ultimately had to use them with cradles at specific desktop locations in the organization. This limited us because only the medical residents had access to them because the were provided with desktop cradles in the Medical Education offices. Also executives and

managers had desktop access with their Palm devices only at their respective offices. Once we put the IR ports in our physician's lounges it opened up several possibilities. It was originally, tentatively used just with the Mobile DocWeb project. But, we found that we could use these infrared ports for general browsing and as an alternative for untethered LAN connectivity.

Question C:
<u>Buying Motivations</u>: What were the three or four biggest buying motivations/benefits you used to justify the IR network access system approach?

We need portable device access that doesn't limit us to one device or cradle. The IR ports provide a connection to the LAN that was consistent with conventional networking infrastructure, which we already have experience with. The peripheral device could be "any device" with infrared and networking support. We could use a Palm device, we could use a CE device, and we could use a Windows device. That was our predominant motivation, not being a single hardware device application - the ability to work with several different types of devices without committing us to any one in particular.

Question D:
<u>Patient Care Alternatives:</u> What alternative Patient Care network access system alternatives did you evaluate prior to selecting the Infrared Technology ie RF, cradles, desktops? What was the criterion used to justify IR over these other network access methods?

In our hospital now, we use various conventional types of networking connections including Radio Frequency, cradles with desktop LAN, dial-up, VPN, etc. It was not really an "either / or" choice in choosing infrared technology, more of a matter of function for access. "IR" did not require a specific interface or software setup specific cradle, hardware or even a PC Card. Most of the devices such as PDA's and laptops include an Infrared port already… it was an easy network setup and configuration that allowed us into our network via the infrared ports. Our network logon is a first line security once connected and the synchronization application is second… from there it was secure web access and intranet application links… the stuff we already had available to us before our project began.

Questions E:
<u>System Components</u>: Please list your primary software vendor (HBOC, Siemens, Meditech, Cerner, Homegrown etc) and what other software vendor(s) were used to complete this PDA project.

In our hospital we use many different types of software applications including MedInformatix for some of our outpatient practices, we are just now rolling out deployment of **Eclipsys** for inpatient electronic care documentation. We use an HBOC PHS product for enterprise patient / procedure scheduling and use SMS for managing financial information; PeopleSoft is used for Payroll and HR (ERP) function and we have a product called CyberView that gives us a view in to the financial and claims data. In addition to that, we have an A2K system to process order (i.e. lab work, radiology, dietary, procedures) and to report lab / radiology results. We use Kinetra as a link to A2K results reporting in the outpatient settings. The project that we are currently working on, right now with our PDA's, is a product we developed called Mobile Doc Web - which is basically a secure mobile web environment were Physicians have a portal into patent information which includes lab results, general census, individual and group census, demographics and transcription results. With our current setup the Mobile DocWeb uses the AvantGo Corporate Server as a interface between the secure web environment and the PDA synchronization. This allow us to put that secure data onto the PDA and even use Java script through the Avantgo corporate client to secure the data and the access to the patient records on the device. After authenticating the user the synchronization process can download information through the secure connection to the device. This can be done at a desktop cradle, an infrared port, and through a dial-up connection. Users that have VPN access can even perform the sync remotely - at their home, office, and on the road.

Question f:
PDA Hardware Platform: Indicate which PDA or combination of PDA(s) your organization uses, how many are in use today, and who was responsible for the purchase of these devices.

By far and away most of our users use palm devices and we recognize that trend. Nationally, about 95 percent of the PDA's used have the Palm OS installed. We do have a few Windows CE users. The nice thing about using the infrared ports along with the AvantGo Corporate Sever is that it allows us to use both kinds of devices. In our organization we have approximately 300 officially supported PDAs or palm devices; but, we have somewhere over 1000 to 1200 actual users in our midst. The project for Mobile DocWeb has over 100 potential users officially sanctioned for pilot project use. We have about 200 user licenses and we are deploying those as we add more features and get more interest from the physicians, as we go along. I anticipate that we will probably purchase another 100 to 300 client licenses that will allow us to deploy the mobile doc web project. Currently in our organization there is a mix of self purchased devices and corporate purchased devices, somewhat dependent upon the manager and the budget - in the instances in where the department was not able to afford the purchase of the PDA for its employees, often the employees purchase their own. Guidelines provided by our IT dept help in the selection. Our IT department then goes out and handles the Palm desktop installation. In addition to that, we install an Intellisync client which allow us to interface Palm and CE Hotsyncs to our Novell GroupWise groupware. This allows us access to our corporate calendar, corporate address book, and our corporate email.

Question G:
Key Applications Describe your key PDA applications (ie patient census, vitals, test results, charge capture etc.) and where are they currently being deployed? How many physicians and other caregivers will be using these applications in the first year?

For general use of Palm devices in our organization, we are basically using the out of the box components - calendar, email, contacts that links to our Novell GroupWise. But, in the case of physicians, we added the Mobile DocWeb product and that gives physicians access to general hospital census, individual physician census, group physician census, transcripts, test results, general news, and secure notes. We deployed it on our main campus (86th street) and we are now getting ready to deploy it at our Carmel site. We are anticipating that this growth from 100 users now will increase to approximately 300 users by the end of the year or the beginning of next year. We anticipate that we are going to add on to other PDA uses for in-house and out-of-house uses. An example is an in-house **Eclypsis** shell system that will use a products that allow a the pharmacy MAR to be put onto a nurses handheld palm device and may also include such things as a pain scale, head-to-toe assessments, and vitals capture.

Question H:
ROI Has your institution realized operational efficiencies since the implementation of your PDA and wireless strategies? Is so, in what areas and can these efficiencies be translated into dollar savings?

Although we get asked this question a lot, I think it's really hard to translate some of the value into actual financial numbers. But, what we can say about our project is that it increased the satisfaction and perception by the physicians that the hospital cares about their needs by providing access to information. It demonstrates that IS making the attempt to connect them to the patient information that is needed to provide caregivers with data that helps improve clinical decision-making. We can translate some of the efficiency, obviously, by decreasing the physician's time in finding the patient, finding the patients results, and finding the nurse to retrieve those results. So, a physician coming into the hospital can stop by one of our IR ports, perform a device hotsync and then get a list of their patients along with vital data. This includes some of basic radiology, lab

reports, transcript information, and demographics. So, I think that translates into a decrease in footsteps (akin to Sears model in quality order fulfillment) and decreasing the time it take for a physician to get access to the needed patient data. A physician has knowledge, skill, and time to offer. By increasing the time available to actually see patients, rather than tracking down the data, we know we are on the right track.

Question I:
<u>Future Growth Opportunities:</u> Where, when and to what extent do you see the future growth of PDA deployments occurring at your institution over the next three years?

Increasingly, there is a need for mobilized front ends to the more extensive applications in the hospital. That is going to ever increase: Physicians, Nurses, Executives, Human Resources personnel, and other specific workgroups are all going to require some untethered connectivity to the applications that help us run our day to day business. As the hospital and the healthcare industry in general become aware of these needs, we are going to realize the need in providing convenient and quick access to information. This helps us improve the point of care decision making process as well as the point of service decision making. The obvious requirement for that will become apparent to people within Information Technology and also to business professionals. Business operations and function will choose the applications that help us to be more efficient, make better quality decisions, and ultimately to improve the satisfaction of our patients and for people performing the care.