

## University of Pennsylvania Health System – Philadelphia, PA

### *Principal Services Provided:*

- *Technical Programming Services*
- *Project Leadership*

### **Facility Overview:**

The University of Pennsylvania Health System (UPHS) is one of the world's leading health systems. With a commitment to three equally valued and inter-related missions of patient care, education and research, UPHS integrates its School of Medicine, Health Services and shared destiny with the University of Pennsylvania. UPHS's health delivery services are continuing to expand and include:

- The University of Pennsylvania School of Medicine
- Hospital of the University of Pennsylvania
- Presbyterian Medical Center
- Pennsylvania Hospital
- Penn Medicine at Radnor and Penn Medicine at Cherry Hill
- PENNCare
- Penn Home Care & Hospice Services.

In addition, UPHS has many affiliations, partnerships and manages other healthcare services in order to provide a complete continuum of world-class healthcare services to its patients. This is evidenced by the Hospital of the University of Pennsylvania's recent listing for the eighth consecutive year to the U.S. News and World Report "Honor Roll" for best hospitals in the United States.

### **Challenge:**

The Information Systems requirements associated with such a large and complex organization are enormous. At times, vendor provided solutions are not advanced enough or applicable to meet the distinct requirements of the individual UPHS entities. Without the appropriate systems and data, UPHS's goal of integrating the services and capabilities of its many entities in order to achieve the delivery of world-class patient care could be jeopardized.

**Action:**

The University of Pennsylvania Health System has partnered with MedMatica Consulting Associates to provide technical programming assistance on a variety of projects in order to develop tailored solutions for the representatives of its organization. MedMatica Consulting Associates efforts have spanned across multiple disciplines and have included the following:

- Home Health application enhancement and redesign to allow for improved data entry and reporting by mobile caregivers.
- Hospital based data repository support to facilitate the linkage of external systems to the repository and improved reporting capabilities from the repository.
- Development and support efforts to assist the organization's overall patient and employee education capabilities via the development of Computer Based Training sessions that are accessible via the Internet or the health system's intranet.
- Development of an XML-based wireless application using PocketPC devices to manage Physician/Patient Information and Census Data. A browser based application utilizing XML, XSLT and ASP backend business logic.
- ASP-based application to perform performance evaluation of medical staff in a multi-tiered, hierarchical personnel structure. Scheduled and notified personnel of pending evaluation due, performed on-line evaluation and forwarded scoring to appropriate staff.
- Business Objects reporting system architectural and design enhancements to allow for improved reporting from the Web.
- Data Management through the implementation of processes to collect data gathered from disparate external systems for reporting purposes.
- Customized end user report development and data mining utilizing Crystal Reports in an Sequel Server environment.

The solutions required to meet the specific requirements of each organization has necessitated MedMatica Consulting Associates delivery capabilities to span multiple technologies and platforms. The following represents several of the areas of technical expertise provided by MedMatica Consulting Associates:

- Database Support – Oracle, SQL-Server, Access
- Application Development – Visual Basic, C, C++
- E-Commerce – Java, HTML, ASP, XML, XSLT
- Reporting – Business Objects, Crystal Reports
- Legacy – Cobol, MVS

The delivery of each solution included the documentation and transfer of knowledge to UPHS support staff that allowed the health system to independently support the solutions developed by MedMatica Consulting Associates.

**Results:**

Through the combined efforts of The University of Pennsylvania Health System representatives and MedMatica Consulting Associates, customized application solutions have been developed to meet the specific needs of multiple organizations within UPHS. The benefits associated with these efforts include:

- Improved operational efficiency within each department resulting in the achievement of departmental goals and improved employee satisfaction.
- Enhanced data integration among UPHS entities resulting in sharing of patient information across multiple settings in order to improve overall patient care.
- Leveraging of leading edge technologies in order to facilitate the access to key patient information for physicians and other caregivers.
- Improved reporting and data analysis capabilities.

**Quote:**

“MedMatica Consulting Associates has always provided qualified technical programming resources in critical situations allowing UPHS to be very responsive to the wide variety of information systems requirements at the health system resulting in improved solutions for our end-users and an improved linkage between our end-users and Information Systems”.

Tod Simons  
Entity Chief Information Officer  
University of Pennsylvania Health System