

NASCIO Awards 2003
Emergency Medical Services System (EMSS)

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Executive Summary

Wisconsin Emergency Medical Services (EMS) Systems and Licensing Section performs regulatory oversight of 450 ambulance service providers (organizations), 20,000 emergency medical technicians and first responder personnel (people). EMS's primary focus is to ensure compliance with State statute and rule requirements.

In 1999, it became obvious the primary funding source for EMS, General Purpose Revenue (GPR) would be diminishing, we would take longer to get our business accomplished and we would eventually have to do this with fewer staff.

In order to maintain our business unit's responsibility, a proposal was written for a web enabled application that would automate surveillance, issue licenses to people and organizations, maintain training information, and reduce operational costs. At the same time, we increased unit efficiency, reduced costs, assured the citizens of Wisconsin that those licensed meet all requirements and improved customer satisfaction.

The proposal, termed EMSS (Emergency Medical Services System), was submitted to a newly formed group called Tech Force Academy. This group was formed by then Governor Tommy Thompson as part of the new Department of Electronic Government. Tech Force Academy's primary goals were to: 1) train and mentor IT staff from various units of state government with an eye toward the proliferation and transfer of knowledge gained; 2) standardize state applications and establish a central repository of reusable code; and 3) educate various units of government about the value of reuse and the efficiency of this strategy. As the building of this custom application began, EMSS project embraced the goals of the Tech Force Academy and has added documentation regarding project planning strategies as an additional reuse potential.

EMSS is a web-enabled DB2 database written in JAVA and hosted on an IBM OS/390 mainframe and secured with Novell I-Chain through various user roles. EMSS was written to assure that Ambulance Services and Emergency Medical Responder maintain compliance with Wisconsin Statute and Administrative Rule (source of business rules). This is accomplished through surveillance every 24-hours of critical markers and sends an out-of-compliance messages when necessary. EMSS relies on intergovernmental cooperation for further development, but also promote reusable code and project planning concepts. Agencies involved included the Department of Regulation and Licensing (DRL), Department of Administration (DOA), Department of Electronic Government (DEG), Wisconsin Technical College System Board (WTCSB), Department of Transportation (DOT), and the Department of Justice (DOJ). These relationships afforded EMSS a greater ability to monitor and regulate emergency medical technicians, first responders, and ambulance services.

Additionally, these relationships addressed major concerns including duplication of data entry and data storage. EMSS takes advantage of multiple existing databases, therefore not replicating data, resulting in obvious savings of taxpayer dollars, more efficient use of human resources, and more reliable data. A side benefit to these intergovernmental relationships is our external customers' satisfaction with reliable and timely access to data, implementation of "pending out of compliance messaging", and accurate and timely license processing.

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Description of Project including length of time in operation

EMSS was designed from the beginning to be rolled out into production in phases. The initial four months of the project consisted of translating business need into various project scoping documents;

Phase one (six months from initiation of project) was spent performing data cleanup from an existing local server prior to migration;

Second Phase (Training Center) went into production 9 months after initiation of the project. This educational component tracks an organization and individual educational history necessary for initial issuance and renewal of a license. This phase also allows the State of Wisconsin to track all courses offered state-wide and to survey instructor certification;

Third phase went into production 10 months after initiation of the project. This phase provided the ambulance service with the ability of to maintain an operational plan (required by law). This phase consisted of maintaining associates, mutual aid agreements, medical director, vehicle fleet, and service director, roster of personnel, provider demographic information, and liability insurance.;

Fourth phase went into production 11 months after initiation of the project. This phase allowed for the State of Wisconsin to issue an organization or individual a license. Surveillance was initiated on insurance expiration, medical director licensure, mutual aid agreements, and individual abilities for roster assignments surveillance to production. Additionally, printing of a license was done to a mail center, rather than in-house to realize a significant cost savings in postage and work flow.

Fifth phase (currently scoping) will consist of automated renewal of an individual or provider license. This represents a significant part of our business as viewed by our external customers.

Sixth phase will consist of enhancements and minor page flow redesign with input from staff and external customer.

Significance to the improvement of the operation of government

EMSS is an excellent example of intergovernmental cooperation. From its inception, EMSS proved the value of reusable code. Relationships were established across state government to further not only EMSS' development, but also promote reusable code and project planning concepts. Agencies involved included the Department of Regulation and Licensing (DRL), Department of Administration (DOA), Department of Electronic Government (DEG), Wisconsin Technical College System Board (WTCSB), Department of Transportation (DOT), and the Department of Justice (DOJ). These relationships afforded EMSS a greater ability to monitor and regulate emergency medical technicians, first responders, and ambulance services.

In fostering the idea of reusable code, governmental partners were more willing to participate because they could see the direct and potential benefits. These partnerships allow EMSS to share data between databases and take advantage of new technologies such as SOAP-XML.

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customers' satisfaction with reliable and timely access to data, implementation of "pending out of compliance messaging", and accurate and timely license processing.

Final results indicate no need for additional human resources and an operational cost reduction.

This EMSS initiative has broken down barriers and facilitated sharing and reuse. Expanded interaction between agencies resulted in shared and reduced costs.

Benefits realized by service recipients, taxpayers, agency or state

The re-use concept affords the opportunity to reduce development costs through reusable code and project planning. Time from idea to production schedules (system development life cycle) can be condensed because of this process. This reduced time will represent a significant savings to the taxpayers of Wisconsin.

These reductions have only been realized with intergovernmental cooperation, promulgation of reuse concepts and a tighter state operating budget. It is logical to assume both government and business will feel the effects of an economic downturn. Efficiencies and substantial savings are gained through appropriate use of technology and collaboration.

Quantifiable savings are realized through EMSS in

- ❑ Reduced postage costs - through accuracy of deliverable mail (FINALIST - address validation);
- ❑ Reduced printing costs - printing and mailing through the State's Print Center;
- ❑ Improved time to delivery of mail - EMSS prints directly to the State's Print Center which results in delivery of a license in 3-4 days versus 10 days if printed and mailed in-house;
- ❑ Shift in staff workloads - shifting data entry from internal staff to end users (estimated reduction of 1 FTE in 2003 with no anticipated new staff to accomplish an ever increasing volume of licenses and compliance surveillance 11/5/1/2003 10:38 AM); and
- ❑ Improved external customer satisfaction - only antidotally measurable, however feedback has been positive and has resulted in fewer telephone calls to obtain information and fewer external customer complaints.

Again, EMSS is the initial phase of a longer term plan for an Integrated Prehospital Data Surveillance System (IPHDSS). EMSS established a basic infrastructure that will serve as the foundation for the IPHDSS. It emulates a model of efficiency and cost effect methodology for application development.

Return on investment, short-term/long-term payback (include summary calculations) Projects must exhibit measurable operational benefit

No budget was established for maintenance of the legacy system. In the 1998-2000 budget biennium, no dollars were expended in support of the legacy system. The existing legacy system (accessible only to Emergency Medical Services Section staff), along with changes in the business needs, access to the Tech Force Academy, an opportunity to partner with other

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governmental agencies, and a willingness to move the State forward were the key components in advancing the EMSS project.

The current development of EMSS brought about a need for a business plan for funding and operations. Next a strategic plan for enhancements was developed with one, three and five year milestones. An end-users' group will be formed in mid 2003 to advise project leadership of internal and external customers' needs and desires.

As the Integrated Prehospital Data Surveillance System (IPHDSS) project evolves, early savings in the way of reusable code and project planning will be realized. As the system grows, there will be savings due to scalability. Operational costs can better be predicted with a business plan and a Memorandum of Understanding (MOU) for hosting, development and maintenance costs.

In addition to a production platform, EMSS maintains a user acceptance platform. This platform will eventually be reused to build an education platform for new users and code. With the implementation of streaming video to facilitate training new users and refresher training for existing users, EMSS will reduce data entry redundancy and while providing consistent data naming standards toward the goal of improved data integrity and lower maintenance costs.