



**Implementation
of Magnum Web
at North Dakota
Dept. of
Corrections &
Rehabilitation**



About North Dakota Department of Corrections and Rehabilitation

The North Dakota Department of Corrections and Rehabilitation (DOCR) is responsible for the direction and general administrative supervision, guidance, and planning of adult and juvenile correctional facilities and programs within the State. The Department of Corrections and Rehabilitation was created in 1989 and consists of the Adult Services Division and the Juvenile Services Division.

The DOCR Medical Department, a division of the DOCR Central Office, provides primary care (Physician and Physician Assistant) services, nursing services, pharmacy services, dental services, psychiatric care, physical therapy, infectious disease clinic, orthopaedic clinic, optometry clinic and dietician services on site. Hospital, ambulance, laboratory services, radiology services and emergency care services are contracted. Auxiliary services include accounts payable and medical records. The Medical Department has a co-pay charge for offender initiated visits. The Medical department day to day operation is managed by the Director of Nursing.

All the facilities currently use the iTAG electronic offender information system for managing the offender records. Offenders can be housed at any of the county and regional correctional facilities and other contract correctional facilities. The current adult prison population is 1500 approximately and the juvenile population is approximately 100 offenders.

The challenge

In 2008, the Client realised that their current information systems could not meet the healthcare information management needs. They decided that there is a need to implement systems that could support the delivery of clinical and support services to the inmates in a timely manner.

The system for the healthcare perspective included an outdated Pharmacy Management System and most of the patient's records were paper based.

This gave rise to huge Data Migration /verification effort to the new system. The system also had to be integrated with the iTAG Offender information system

The Need

The Client noted that there is a need to implement an efficient, comprehensive health care delivery system that is able to integrate various administrative and care related areas. The vision statement of the proposed EMRS would have to create an integrated system that is capable of integrating their offender management system for the inmate demographic details and is able to create a unique and centralized patient medical record that can be accessed from any of the correctional facilities using the unique inmate (iTAG) number. They also expected the medical records to be available instantly internally throughout the system for use by health care and other authorized department staff.

The Client wanted to create an integrated Administrative and healthcare environment that



would enable their continued accreditation effort through the American Correctional Association.

To move towards this goal, in 2008 the DOCR committee developed a new information strategy, that would allow for a cost effective, affordable and an integrated solution to be implemented in a phased manner for four of their correctional facilities medical wing spread across a radius of 300 miles. The first phase would consist of automating **North Dakota State Penitentiary** in Bismarck moving on to **James River Correctional Centre**, **Missouri River Correctional Centre** and finally the **Youth Correctional Centre**.

The Solution

At the very heart of the Client's strategy was the desire to put the inmate at the core of all its information systems.

Client went for an open procurement for the state-of-the-art EHR (Electronic Health Record) in 2008 and chose The AssistMed- HealthFore consortium.

Working in partnership, DOCR and AssistMed-HealthFore have implemented the EHR solution that enables the Client to achieve the stated vision objective of having an integrated administrative and electronic health record system. The solution implemented integrates the iTAG offender management system with the EHR system to obtain the patient demographic information. Once the patient demographic information is available with the Magnum Web (EHR) system, the unique iTAG number is used by the practitioners to identify the patients within the EHR.

The nurse practitioners are now able to schedule inmates for their routine healthcare checkups using the centralised scheduling management system, helping in managing the patient

scheduling and tracking process. The physicians are able to view the list of patient's waiting in the queue and are able to view the electronic health record of each inmate prior to the consultation, from their practitioner's workbench. The Practitioners workbench has allowed the users to now perform the following clinical activities like recording of specialty specific SOAP notes, e-Prescription Writer with drug dosage alerts, drug monographs and drug database integration, electronic service scheduling and ordering system to order for laboratory and radiology services, recording patient allergies, vital charting and electronic forms recording. The Practitioner will be able to electronically track to completion the status of each of the orders he has placed. The system has a completely integrated CPOE and Results Reporting system. The Practitioners workbench has speciality areas for the Dental, Psychiatry and physiotherapy specialties.

While envisioning the strategy for an integrated EHR system, the Client wanted to implement a closed loop medication administration process. In the earlier system, the ordering process was initiated with a paper order that was filled by the pharmacist and administered by the nurse, the ordering process and the administration process was maintained in paper. Now, while prescribing the medications for the patients the system performs the active medications check for the physician alerting the physician for any duplicate therapy. The physician is able to view the monograph details for the drug being prescribed and is alerted regarding any drug-to-drug interactions, drug to allergy interactions, drug dosage alerts. The system allows the practitioner (nurse or physician), to view the patients drug profile while placing the prescription for the patient. Once the medication orders have been raised, these are available at the pharmacist



workbench, electronically. The system allows the pharmacist to review the prescriptions from her system and dispense the medication orders; each medication dispensed from the pharmacy is bar-coded for easy administration identification. The medication orders are sent to the various medlines for the administration. For the administration process, the system conforms to the 5 R's of medication administration. When the patient arrives at the medline to take his medication, the patient is identified by swiping the patient's identification card. The system brings up the patient's drugs to be administered at that time. The nurse then scans the barcodes of each of the medications to be administered for the patient, to identify correctly if the medication belongs to the patient.

The Goal of this process for the client was to reduce and eliminate the medication errors in the entire process and to phase out the laborious processes and time-intensive tasking employed earlier by the client medical department by implementing technology that integrates the Client medical department's medication administration process.

Any care planning and patient care process relies on the speed of the diagnostic test results. The Laboratory Orders and results processing at the Client have now been completely automated, reducing the turn-around-times of results reporting. The system allows the physician to order from the CPOE system the list of laboratory services for a patient. These orders are displayed to the phlebotomist, who is able to collect the patient samples based on the order details being displayed in her screen. On sample collection, the phlebotomist generates the packing list of all the samples in the current pack and sends these off to the contract laboratory. The Client has been linked

with two contract laboratories via an HL7-based interface. The orders from the Client are electronically routed to the contract laboratories. These laboratories receive the packing list containing the patient samples and the packing list details. Once the results are authorized for each of these samples, the results are transmitted by the contract laboratories via the HL7-based interface to DOCR. The physician is alerted in his Alert Messenger whenever new results are available for her patients. The physician is able to indicate in the system that he has reviewed the patient alerts.

The EHR system implemented at the client location will enable the department to have a single view of a patient's record. The system will allow the care providers to view the patient's electronic medical record from any facility. The access to the patient record has been controlled now with the incorporation of a facility and role based access. The confidential portions of the patient record are controlled on the basis of the access rights granted to a particular user. A user with appropriate access rights defined in the system will be able to view a consolidated electronic medical record for the patient.

Visible Benefits

The most important benefits have been the achievement of a single master patient index across all the facilities and the ability to maintain a consolidated patient electronic medical record containing all information about inmates. The system is now able to provide the staff with more reliable and up-to-date information enhancing the ability of the staff to take more informed decisions.



A point by point comparison as to how the systems and processes have changed after the implementation of HealthFore' solution is described below:

Before (In paper)	After (Magnum Web)
Standalone Registration Information	Integrated with ITAG (Offender Information System) via Services (SOA) for Patient Demographic information and unique Master Patient Index Maintenance
Scheduling Registers & Paper Kites	Centralised Scheduling Management System for doctors and clinics. Provides the practitioners with a consolidated view of the scheduled appointments, doctor calls and sick calls
Paper-Based Patient Records (Below is the list of paper forms that made up the patient medical record)	Electronic Medical Records
Paper Forms	Electronic Forms using Forms Designer
Drug Orders Forms	e-Prescription Writer with alerts.
Service Orders Forms	e-Service Orders (CPOE)
Patient Vitals Recording Sheet	Electronic Vital Charting and Graphs
Patient Notes	SOAP Notes allows generation of speciality based templates and easy patient summary (IP or OP) generation
Patient Allergies Forms	Allergy and Diagnosis Alerts
Closed Loop Medication Administration	
Drug Orders forms filled by the doctor	e-Rx writer used by the doctor to raise prescriptions
Dispensing through Pharmacy Mgmt System	Dispensing with workflow and refills through the new Pharmacy and Inventory Management System
Paper based Medication Administration Record (MAR)	eMAR and Quick eMAR for bar-coded medication administration
Paper orders forms for Laboratory and Radiology	Completely online ordering process Orders and Results Integration with state



	partnered Laboratories through HealthFore' xTransEDI (HL7-based Interfacing tool) Service Scheduling to all the external facilities
Paper based Inmate tracking	Electronic Inmate tracking with integration to the iTAG system and inmate movement to external facilities
Infirmary management	Patient admissions and Infirmary management completely online.
Paper based medical Records	Electronic Medical records.

About HealthFore:

Religare Technologies' has a focused healthcare IT division, HealthFore. It is uniquely positioned to offer transformational B2B and B2C IT solutions to both providers and consumers; solutions built on leading edge technology and backed by healthcare expertise.

HealthFore's Magnum suite of products provide feature rich HIS and RIS-PACS solutions which span the entire clinical, administrative and back office functions of clinics, labs and hospitals. Magnum solutions are currently supporting healthcare providers in 11 countries.

HealthFore's mHealth platforms provide consumers in India, round the clock access to healthcare information, counseling and consulting, through telephony and internet. These technology-enabled platforms aim to address the challenging issues of healthcare awareness, accessibility and affordability that plague the country today.

To know more about how HealthFore, please visit www.Healthfore.com

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