Methodology and Work Plan

The California Department of Corrections and Rehabilitation (Corrections) currently operates thirty three (33) adult prisons that are by design positioned throughout the state of California. These locations offer a unique geographic diversity which ranges from convenient urban settings to challenging remote environments. Throughout each of these facilities, Corrections must provide medical, dental, and mental health care to approximately 175,000 adult inmates of varying correctional classifications.[1] The United States Constitution and California Laws require that this care be provided in a timely and adequate manner.

To comply with this directive, Corrections authorizes its Division of Correctional Healthcare Services (Division) to implement the required care in a manner that is deemed consistent of a *custodial* environment. Under these guidelines, the Division has been unable to provide quality services based on the devices and services at its disposal. These devices and services have demonstrated the impetus for the current state of ruination that is now prevalent throughout Corrections patient care continuum.

After years of stalled progress to improve these healthcare services, the Federal Court for the Northern District of California established a Receivership to assume responsibility for the oversight and general management of Corrections adult inmate population and to provide the Division with the structure and expertise that is desperately needed to elevate the level of care to constitutional standards. This vision also desires to establish a new mindset for Corrections along with the forward momentum to expand this progress upon the completion of the Receiver's goals and objectives.

Engagement

In October of 2007, the Receiver's Office, under direction of the former Receiver Robert Sillen, issued a Request for Proposal (RFP) for the California Prison Receivership Corporation (CPRC) titled, "Enterprise Imaging and Radiology Assessment and Planning." The scope of this project was to complete a comprehensive assessment of all medical imaging services within Corrections adult institutions. McKenzie Stephenson, Inc. (MSI) was awarded the bid in December of 2007 and initiated its workplan in early January of 2008 to include the following actions:

- Provide an assessment of imaging and radiological services, including capabilities, staffing, organizational management structure and technical infrastructure.

[1] When an adult inmate arrives at a state prison, he/she is assigned a classification based on his/her committed offense, gang affiliation and special needs. Each prison is designed to house different varieties of inmate offenders, from Level I inmates to Level IV inmates; the higher the level, the higher risk the inmate poses.

- With specific reference to other institutional healthcare settings, including correctional systems, provide a critique of the above findings in light of currently available technology and industry best practices.
- Estimate the return on investment which can be realized from the establishment of a centralized radiology operation, including staffing, capital equipment investments, implementation of information systems, purchasing of supplies, and the interpretation of images by a centralized, internal staff, compared to outsourcing this function.
- In conjunction with CPRC leadership and the Perez and Coleman court representatives, create a vision of the future state of California prison enterprise imaging and radiology services, including:
  - The types of radiology services Corrections should perform in-house, versus outsourcing to contracted vendors
  - A comprehensive, enterprise-wide staffing model encompassing senior management to institution personnel
  - The feasibility of mobile CT scanners and other capital equipment
  - An approach to integrating dental and medical radiology services
  - A strategy for implementing teleradiology which would include remote providers
  - The tactical steps required to centralize all enterprise imaging and radiology operations and to transition from multiple analog film systems to a single, centralized PACS system with both an active clinical archive that feeds to a disaster recovery system to prevent future information loss
- Provide a road map, including estimated costs, resources required and duration of effort, for the Receivership to restructure and modernize Corrections enterprise imaging and radiology program to achieve the stated vision.
- Assess the imaging and radiology clinical workflow; the conditions and placement of imaging suites; dental radiology equipment; facility floor plan constraints; transportation requirements for off-site imaging; timeliness, quality and reliability of contracted radiologist evaluations; and perceived need for imaging services.

To realize this scope of work, it was requested of MSI to conduct multiple interviews with key representatives of Corrections healthcare delivery system; visit at least eight (8) state prisons; and engage in Corrections town-hall conference call for process discovery information.

Methodology

Our discovery phase included on-site, multiple housing visits throughout 18 state prisons as designated in Table 1.

Table 1

CDCR Site Visits and Dates			
#	Dates	Activities	Locations
1	Jan 31st & Feb 1st (Thur & Fri)	Site Visit #1 & 2 - Assessments	FSP & SAC
2	February 4th & 5th (Mon & Tues)	Site Visit #3 & 4 - Assessments	VSPW & CCWF
3	February 11th (Monday)	Site Visit #5 - Assessments	SQ
4	February 18th & 19th (Mon & Tues)	Site Visit #6 & 7 - Assessments	CTF & SVSP
5	February 25th & 26th (Mon & Tues)	Site Visit #8 & 9 - Assessments	ISP & CVSP
6	March 3rd & 4th (Mon & Tues)	Site Visit #10 & 11 - Assessments	CMF & SOL
7	March 10th & 11th (Mon & Tues)	Site Visit #12 & 13 - Assessments	COR & CSATF
8	March 17th & 18th (Mon & Tues)	Site Visit #14,15 & 16 - Assessments	PBSP & HDSP/CCC
9	March 24th & 25th (Mon & Tues)	Site Visit #17 & 18 - Assessments	CIW & CIM

Our approach to assessing the entire scope of imaging services incorporated a multi-tiered methodology. Our team developed questions related to three (3) specific sections that we felt would sufficiently cover all processes and technological elements associated with the medical imaging ancillary support department. These primary sections entail: Operations, Technology and Professional Services.

Each of these primary sections is further supported by sub-sections which contain additional relevant assessments. Many of these sub-sections cross-pollinate and act as either predecessors or dependencies of the other, which ultimately result in a *cause or effect* in the patient care continuum. These central conclusions will provide insight on the inherent delays that currently plague the present structure of Corrections' imaging operations.

This assessment is a comprehensive evaluation of the imaging service line among multiple levels. The Receiver will discover that MSI incorporated a process for evaluation that begins at the initial inmate-patient request for care and continues throughout the entire care continuum, including the critical and complicated elements of custody escort and exchange. As our report progresses, our focus broadens to evaluate the entirety of diagnostic imaging services. However, we felt it necessary to study the hand-off between custody and medical to better understand many of the nuances associated with correctional healthcare.

MSI has assessed the current state of diagnostic imaging services using our deep breadth of practical knowledge assisted by multiple professionally adopted metrics of performance to evaluate the clinical practice. These metrics were established by The Radiology Intersociety Conference.[2] Of the 49 metrics covering the imaging service line, MSI adopted the following for evaluation in this assessment report:

Access & Appropriateness

- Percentage of phone calls answered in *x* minutes
- Percentage of patients scheduled within *x* days from the initiation of the request
- Percentage of patients with whom therapy is initiated within *x* days of consultation
- Frequency with which expensive equipment (CT, MRI, PET etc) is inoperative
- Frequency with which the information technology infrastructure is inoperative

Patient Safety

- All modalities are accredited by a recognized accrediting body
- Percentage of equipment that is included in an annual quality assurance program
- Percentage of technologists who are registered
- Frequency with which patients are screened for pregnancy before x-ray
- Frequency with which patients are screened for risk of idiosyncratic reaction before intravenous iodinated contrast media administration
- Frequency with which patients are screened for ferromagnetic materials before undergoing MRI examinations
- Percentage of examinations in which standardized imaging protocols are written
- Frequency with which standardized imaging protocols are followed
- Percentage of studies performed on equipment that meets American College of Radiology (ACR) Technical Standards
- Frequency with which examinations are performed on the wrong patient
- Frequency with which the wrong side (of the correct patient) is examined or treated
- Frequency with which at least two (2) methods of patient identification are used

[2] The Intersociety Conference was established in 1979 to promote collegiality within radiology, foster communication among national radiology societies, and make recommendations on areas of concern. The topic of each conference is selected by its executive committee approximately 6 months before the meeting. The 53 professional radiology societies that participate in the Intersociety Conference include both diagnostic and interventional radiology, radiation oncology, and radiologic physics. The Intersociety Conference met July 21 to 23, 2006, in Banff, Canada, to discuss quality in radiology and develop metrics to assess and improve the quality of practice. Eighty-seven members and executive directors participated.

- Frequency with which images are mislabeled with regard to patient, side, date or time
- Frequency with which contrast extravasations occur
- Frequency with which a written protocol is available for handling contrast extravasations
- Frequency of adverse contrast reactions (stratified by severity)
- Frequency of adverse safety events related to the MRI magnetic field
- Frequency of examinations repeated because of inadequate or incomplete examinations

Image Interpretation and Reporting

- Percentage of physicians who are board certified
- Frequency of interpretation errors
- Frequency with which the radiology report is changed after transmission to the referring physician
- Percentage of examinations or procedures in which the final reports are completed within 24 hours
- Percentage of cases un-dictated within *x* days
- Percentage of cases in which critical values are communicated to the referring physicians within *x* hours
- Frequency with which the radiologist recommends additional studies

The Medical Imaging Mission

Diagnostic imaging acts as a critical support ancillary service to the primary care giver. The treatment, or "touch point" of patient care is facilitated by physicians and nurses. This factor historically places the physician and nurse at the center of activity with regard to healthcare delivery. Medical imaging services are an integral player in the spectrum of diagnostic toolsets and essentially act as the eyes of the caregiver. The imaging sciences span the entire segment of the patient care continuum from the point of diagnosis, through treatment planning, and ultimately ending at the disposition and release of the patient. Imaging technology has become so comprehensive and physician dependent that the confirmation of a disease process or traumatic pathology often does not begin without some element of a radiological snapshot. It is entrenched as a critical component in the clinical assessment and the corresponding treatment plan for the referring physician. If the imaging service line is not working properly, the inefficiencies send a ripple effect along each point of care.

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