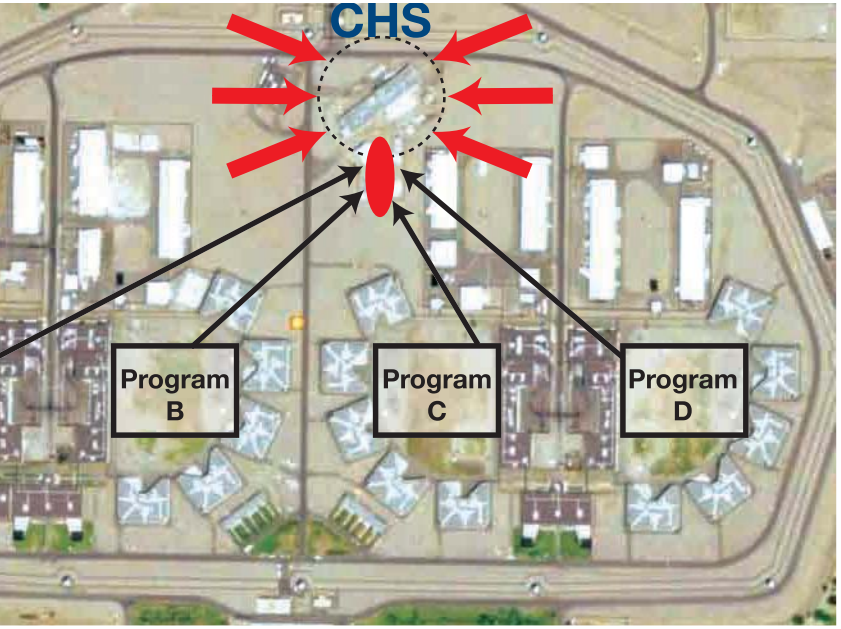
# Enterprise Imaging & Radiology Assessment & Planning

McKENZIE STEPHENSON, INC.

# Prison Modeling

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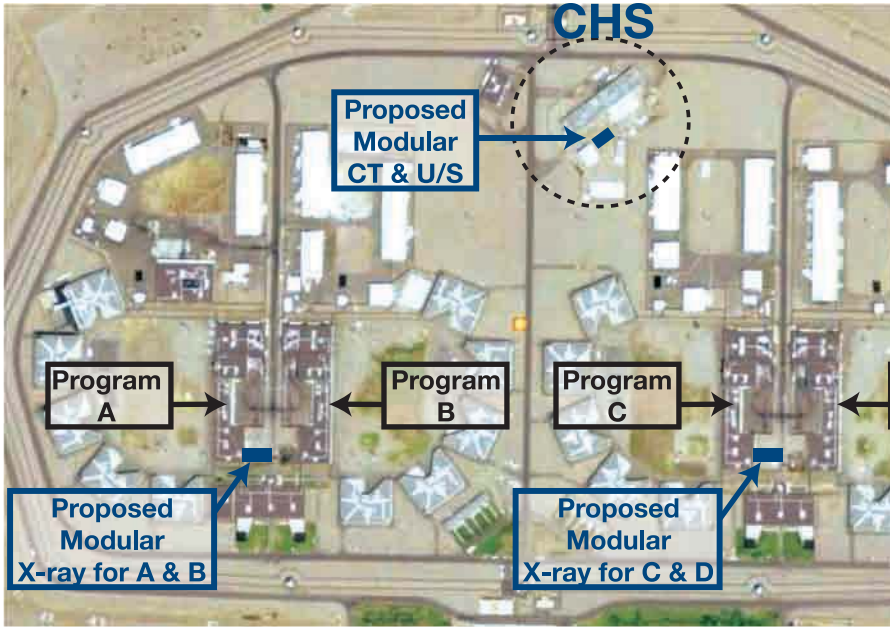


## son (ISP)

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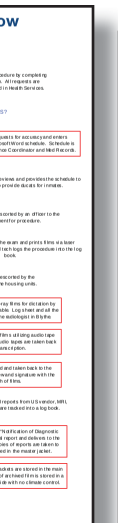
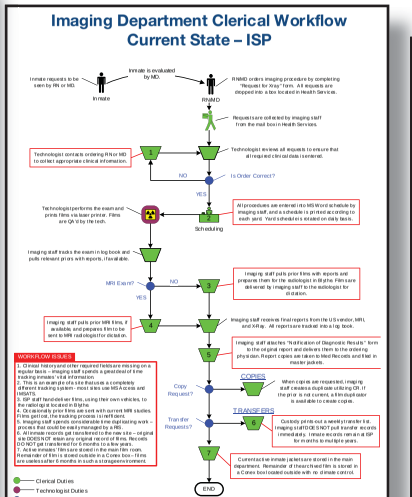
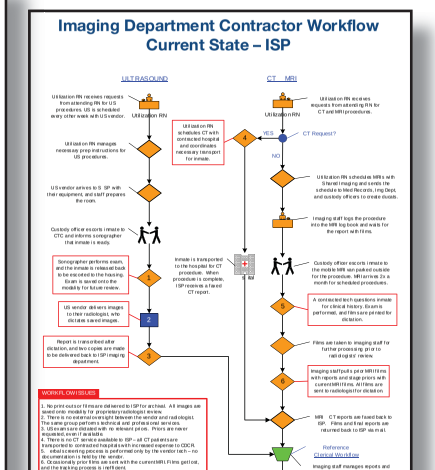
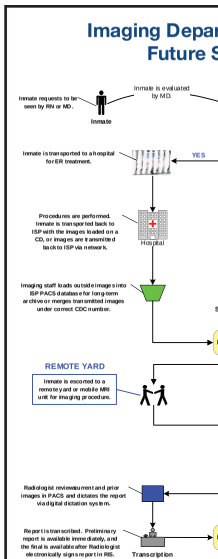





## Ironwood State Prison (ISP)

1. Place X-ray with CR technology at the housing areas to cut down on the custody e bottleneck for non-specialty exams
2. Inmate-patients from different yards can be scheduled at different times during the same remote X-ray building
3. Custody will remain within the housing units when escorting to X-ray in case of e
4. Bring CT and U/S units in house to assist with advanced diagnosis while cutting b security issues and very expensive transportation to off-site locations
5. The CHS is used more for specialty services like CT, Ultra-sound and Mobile MRI. This will cut back on the scheduling issues and mixing of differently classified inmate populations
6. All distributed units are tied together to the CHS with RIS/PACS

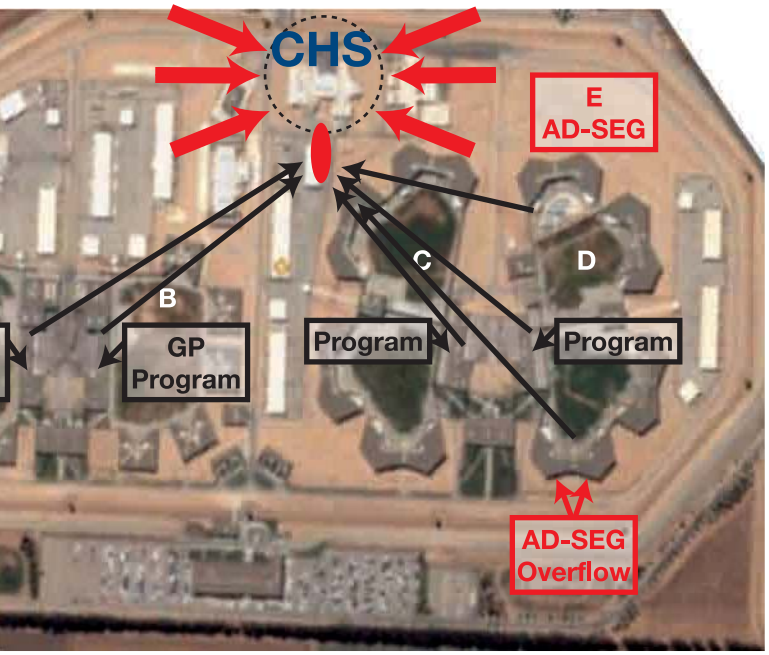


| Scope of Services | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| Single x-ray unit in CHS | Bottleneck for custody scheduling and Transport | X-ray units distributed between yards | Distributed x-ray allows for better coverage and less logistical issues around timely access because of scheduling |
| CT is referred off-site | CT is a standard of care and the off-site option is expensive, creates security concerns and issues related to timely reporting | CT unit permanently housed in modular building near the CHS | Timely access to CT procedures<br>Highly reduced ongoing cost for transport and study<br>Can be shared to support CVSP as well<br>Cost effective ROI<br>*(see proforma) |
| Mobile MRI service just established | The Mobile MRI service is sparse, of marginal quality and non-dedicated to the CDCR. At many site using mobile MRI, a good deal of MRI studies continue to be scheduled off-site | Own and Operate a CDCR Mobile MRI service for statewide scheduling and distribution of services | The CDCR owned and operated Mobile MRI service would be subject to the scheduling requirement of the system. The devices would be standardized for inclusion in the PACS initiative and ultimately would be cost effective considering the expense of off-site and existing Mobile MRI services used presently<br>*(see proforma) |
| Ultrasound services are provided 1 day per week using a mobile services provider | Expensive service with minimal coverage to the facility | Purchase and house Ultrasound equipment in the CT/US modular building near the CHS - Contract for technologists only- | Purchasing Ultrasound equipment will create a standard platform for integration to PACS. The CDCR would only need to contract for technologists to perform studies using their own equipment<br>*(see proforma) |

| Staffing | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| 2 Radiology Technologists are on staff (Non-staggered shifts) | Two technologist on the same shift is overkill for the volume. No coverage into the early evening hours for expanded scheduling | Adhere to recommended standard staffing mix of Two (2) multi-modality Technologists and One (1) OT. Stagger the shifts for expanded coverage hours | Multi-modality coverage for radiology and CT as well as expanded hours for scheduling and emergency coverage |
| Contracted vendors for Mobile MRI & CT | No control over quality and lack knowledge of CDCR standardized protocols and P&P | CDCR employed Mobile MRI techs to go along with CDCR owned and operated Mobile MRI coaches | Better control over standards and performance of MRI technology staff-<br>MRI subject matter expert to assist management with long term MRI strategic objectives and evolution |
| Contracted Ultrasound vendor | No control over quality and lack knowledge of CDCR standardized protocols and P&P | Continued use of contract vendor. Try to standardize on vendor | Better control over vendors technology staff if the CDCR standardizes on a single temp vendor |
| Current State | Issue | Proposed State | Benefit |
| **Equipment** | | | |
| Single x-ray unit in CHS | Bottleneck for custody scheduling and Transport | Purchase and deploy X-ray equipment between yards (see scope of services) | Distributed x-ray allows for better coverage and less logistical issues around timely access because of scheduling |
| No CT Unit | CT is a standard of care and the off-site option is expensive, creates security concerns and issues related to timely reporting | Purchase and house CT unit near CHS (see map) | Timely access to CT procedures-<br>Highly reduced ongoing cost for transport and study-<br>Can be shared to support CVSP as well-<br>Cost effective ROI<br>*(see proforma)- |

| Equipment (continued) | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| No MRI Unit | The Mobile MRI service is sparse, of marginal quality and non-dedicated to the CDCR. At many site using mobile MRI, a good deal of MRI studies continue to be scheduled off-site | Purchase or Lease CDCR Own & Operated Mobile MRI coaches for distributed services throughout the state | The CDCR owned and operated Mobile MRI service would be subject to the scheduling requirement of the system. The devices would be standardized for inclusion in the PACS initiative and ultimately would be cost effective considering the expense of off-site and existing Mobile MRI services used presently *(see proforma) |
| No Ultrasound equipment | Expensive service with minimal coverage to the facility | Purchase or Lease Ultrasound units for distribution to all CT modular units housed near CHS | Purchasing Ultrasound equipment will create a standard platform for integration to PACS. The CDCR would only need to contract for technologists to perform studies using their own equipment<br>*(see proforma) |
| **Policies and Procedures** | | | |
| Non-Standard - Locally developed and incomplete | The Policies and Procedures are ad-hoc and do not reflect the current operations | Standardize all Policy and Procedures across the entire state for the department of Diagnostic Imaging | Standardized P&P assist in commonality of outcomes, staff training and compliance with regulatory agencies |
| **Leadership** | | | |
| Local CHSA & CMO govern the imaging operations | Imaging operations must be governed by a subject matter expert capable of representing the imaging mission and capabilities in a management forum | Develop and utilize a statewide imaging services organizational chart to include Administration and management levels | The CDCR needs to have an imaging management structure in place in order to continue process improvement, standardization and cultural shift for this service line. The benefit will be one of a more cohesive and interdepartmentally friendly service |
| **Regulatory** | | | |
| Non-Compliant | Regulations not followed | Compliance with State and Federal Regulations | Diminished Risk |

| Technology | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| No network infrastructure to support clinical applications | Cannot implement clinical system capable of creating many efficiencies | Full WAN - LAN configuration in progress through Receiver's office | Provides electronic highway for any clinical application. Does not hinder the ability to provide remote services |
| No Dental PMS or centrally configured image management system - RIS or PACS | Creates all manual analog processes for imaging operations at a huge efficiency disadvantage | Implementation of Dental PMS, RIS/PACS state wide with a central server configuration | Complete state-wide interoperability of imaging operations to the benefit of clinicians, inmate-patients and professionally contracted services |
| **Professional Services** | | | |
| Mobile MRI/CT services recently initiated | Service is sparse and marginal | Own and Operate a CDCR Mobile MRI service. Bring CT on-site in modular as permanent modality | Control service line quality, efficiency and schedule |
| Multiple contracted hospital sites | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with as few hospitals that provide a wide-range of services | Easier to manage and monitor for compliance |
| Multiple Radiology groups and independent physicians providing services | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with a couple of radiology providers to provide a wide-range of services until RIS/PACS is implemented. Once RIS/PACS is live, contract with a single radiology group to provide all interpretive and peripheral services | Easier to manage and monitor for compliance, QA and performance expectations. This will be made more simple by the implementation of RIS/PACS so that electronic images and reporting is made available |
| Multiple Temporary Tech Agencies being used to provide staff | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with a couple of Temp staff providers to provide a wide-range of services | Easier to manage and monitor for compliance, QA and performance expectations. |

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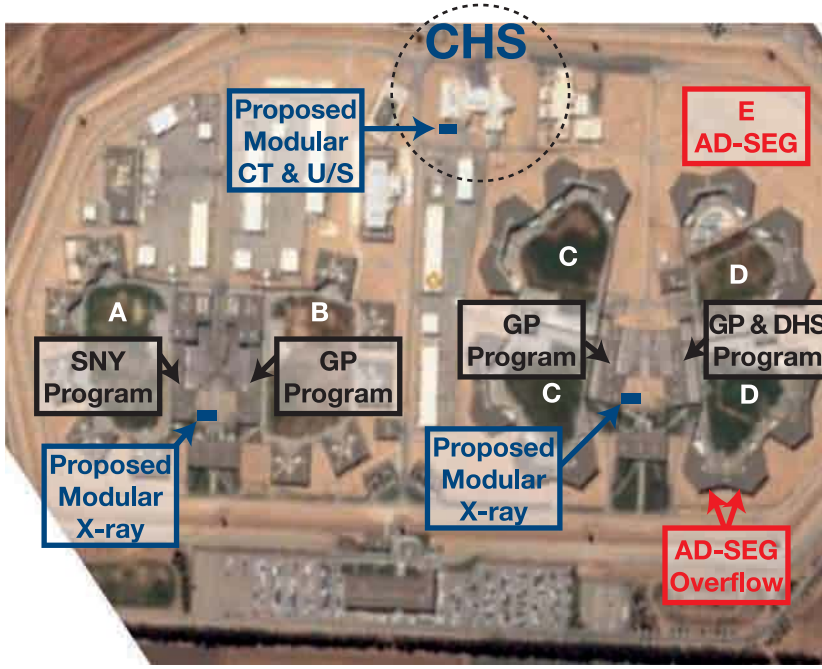


## e Prison (SVSP)

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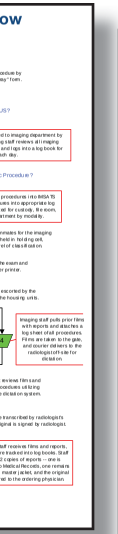
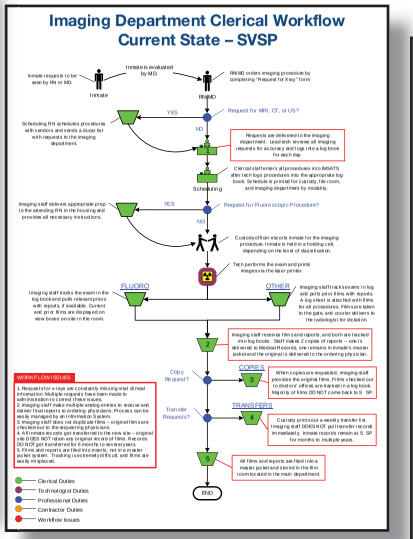
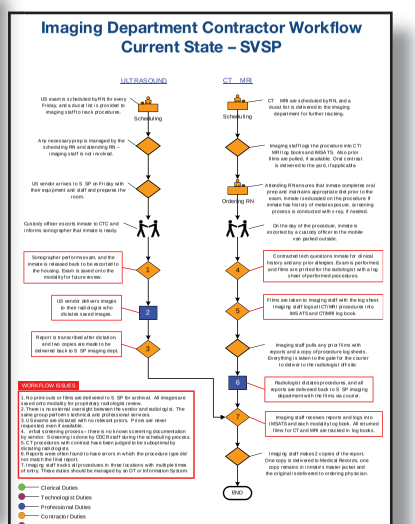
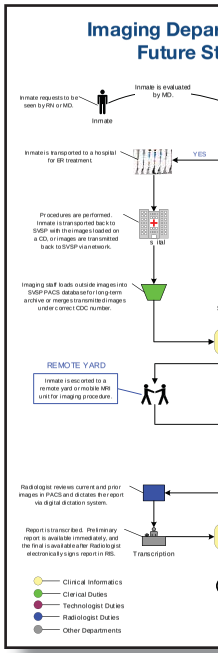





## Salinas Valley State Prison (SVSP)

1. All distributed imaging service are tied together by RIS/PACS
2. Provides much better escort flow for imaging services by removing the bottleneck a

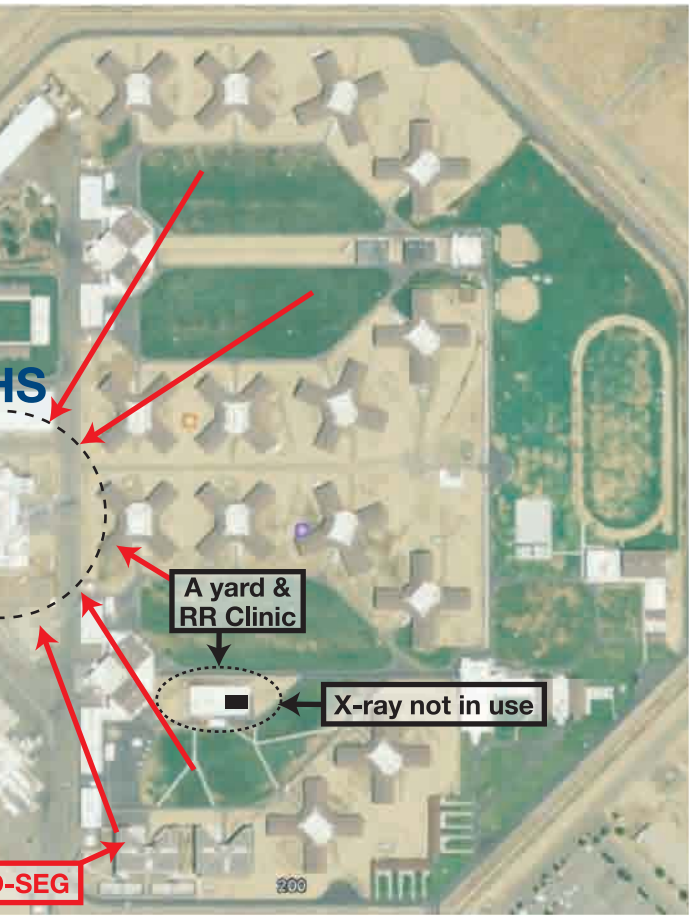


| Scope of Services | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| Single x-ray unit in CHS | Bottleneck for custody scheduling and Transport | X-ray units distributed between yards | Distributed x-ray allows for better coverage and less logistical issues around timely access because of scheduling |
| CT provide by a Mobile Service Vendor | The mobile CT units are old and provide marginal exams on their schedule. The off-site option is expensive and creates security concerns and issues related to timely reporting | CT unit permanently housed in modular building near the CHS | Timely access to CT procedures- Highly reduced ongoing cost for transport and study- Cost effective ROI *(see proforma)- |
| Mobile MRI service provider | The Mobile MRI service is sparse, of marginal quality and non-dedicated to the CDCR. At many site using mobile MRI, a good deal of MRI studies continue to be scheduled off-site | Own and Operate a CDCR Mobile MRI service for statewide scheduling and distribution of services | The CDCR owned and operated Mobile MRI service would be subject to the scheduling requirement of the system. The devices would be standardized for inclusion in the PACS initiative and ultimately would be cost effective considering the expense of off-site and existing Mobile MRI services used presently *(see proforma) |
| Ultrasound services are provided 1 day per week using a mobile services provider | Expensive service with minimal coverage to the facility | Purchase and house Ultrasound equipment in the CT/US modular building near the CHS - Contract for technologists only- | Purchasing Ultrasound equipment will create a standard platform for integration to PACS. The CDCR would only need to contract for technologists to perform studies using their own equipment *(see proforma) |

| Staffing | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| 2 Radiology Technologists are on staff, One (1) OT staff member | Two technologist on the same shift is overkill for the volume. The staff covers into the evening (6PM) | Adhere to recommended standard staffing mix of Two (2) multi-modality Technologists and One (1) OT. Stagger the shifts for expanded coverage hours | Multi-modality coverage for radiology and CT as well as expanded hours for scheduling and emergency coverage |
| Contracted vendors for Mobile MRI & CT | No control over quality and lack knowledge of CDCR standardized protocols and P&P | CDCR employed Mobile MRI techs to go along with CDCR owned and operated Mobile MRI coaches | Better control over standards and performance of MRI technology staff- MRI subject matter expert to assist management with long term MRI strategic objectives and evolution |
| Contracted Ultrasound vendor | No control over quality and lack knowledge of CDCR standardized protocols and P&P | Continued use of contract vendor. Try to standardize on vendor | Better control over vendors technology staff if the CDCR standardizes on a single temp vendor |
| **Equipment** | | | |
| Single x-ray unit in CHS | Bottleneck for custody scheduling and Transport | Purchase and deploy X-ray equipment between yards (see scope of services and proposed map) | Distributed x-ray allows for better coverage and less logistical issues around timely access because of scheduling |
| No CT Unit | CT is a standard of care and the off-site option is expensive, creates security concerns and issues related to timely reporting | Purchase and house CT unit near CHS (see map) | Timely access to CT procedures- Highly reduced ongoing cost for transport and study- Cost effective ROI *(see proforma)- |
| No MRI Unit | The Mobile MRI service is sparse, of marginal quality and non-dedicated to the CDCR. At many site using mobile MRI, a good deal of MRI studies continue to be scheduled off-site | Purchase or Lease CDCR Own & Operated Mobile MRI coaches for distributed services throughout the state | The CDCR owned and operated Mobile MRI service would be subject to the scheduling requirement of the system. The devices would be standardized for inclusion in the PACS initiative and ultimately would be cost effective considering the expense of off-site and existing Mobile MRI services used presently *(see proforma) |

| Equipment (continued) | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| No Ultrasound equipment | Expensive service with minimal coverage to the facility | Purchase or Lease Ultrasound units for distribution to all CT modular units housed near CHS | Purchasing Ultrasound equipment will create a standard platform for integration to PACS. The CDCR would only need to contract for technologists to perform studies using their own equipment<br>*(see proforma) |
| **Policies and Procedures** | | | |
| Non-Standard - Locally developed and incomplete | The Policies and Procedures are ad-hoc and do not reflect the current operations | Standardize all Policy and Procedures across the entire state for the department of Diagnostic Imaging | Standardized P&P assist in commonality of outcomes, staff training and compliance with regulatory agencies |
| **Leadership** | | | |
| Local CHSA & CMO govern the imaging operations | Imaging operations must be governed by a subject matter expert capable of representing the imaging mission and capabilities in a management forum | Develop and utilize a statewide imaging services organizational chart to include Administration and management levels | The CDCR needs to have an imaging management structure in place in order to continue process improvement, standardization and cultural shift for this service line. The benefit will be one of a more cohesive and interdepartmentally friendly service |
| **Regulatory** | | | |
| Non-Compliant | Regulations not followed | Compliance with State and Federal Regulations | Diminished Risk |
| **Technology** | | | |
| No network infrastructure to support clinical applications | Cannot implement clinical system capable of creating many efficiencies | Full WAN - LAN configuration in progress through Receiver's office | Provides electronic highway for any clinical application. Does not hinder the ability to provide remote services |
| No Dental PMS or centrally configured image management system - RIS or PACS | Creates all manual analog processes for imaging operations at a huge efficiency disadvantage | Implementation of Dental PMS, RIS/PACS state wide with a central server configuration | Complete state-wide interoperability of imaging operations to the benefit of clinicians, inmate-patients and professionally contracted services |

| Professional Services | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| Mobile MRI/CT services | Service is sparse and marginal | Own and Operate a CDCR Mobile MRI service. Bring CT on-site in modular as permanent modality | Control service line quality, efficiency and schedule |
| Multiple contracted hospital sites | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with as few hospitals that provide a wide-range of services | Easier to manage and monitor for compliance |
| Multiple Radiology groups and independent physicians providing services. Radiology group provides one day of on-site fluoroscopy studies | Creates confusion and difficulty monitoring compliance with multiple contracts. Radiologist do come out one day per/week to conduct Flouroscopic studies | Work to contract with a couple of radiology providers to provide a wide-range of services until RIS/PACS is implemented. Once RIS/PACS is live, contract with a single radiology group to provide all interpretive and peripheral services | Easier to manage and monitor for compliance, QA and performance expectations. This will be made more simple by the implementation of RIS/PACS so that electronic images and reporting is made available |
| Multiple Temporary Tech Agencies being used to provide staff | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with a couple of Temp staff providers to provide a wide-range of services | Easier to manage and monitor for compliance, QA and performance expectations. |



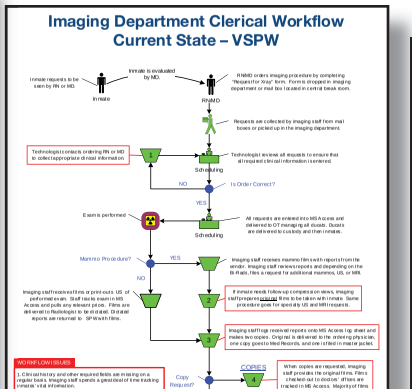

## for Women (VSPW)

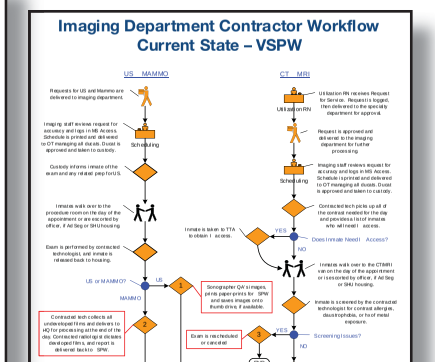
e CHS and is a bottleneck

Clinic is not in use

heduled but marginal service provided

bile and has many issues pertaining to quality assurance

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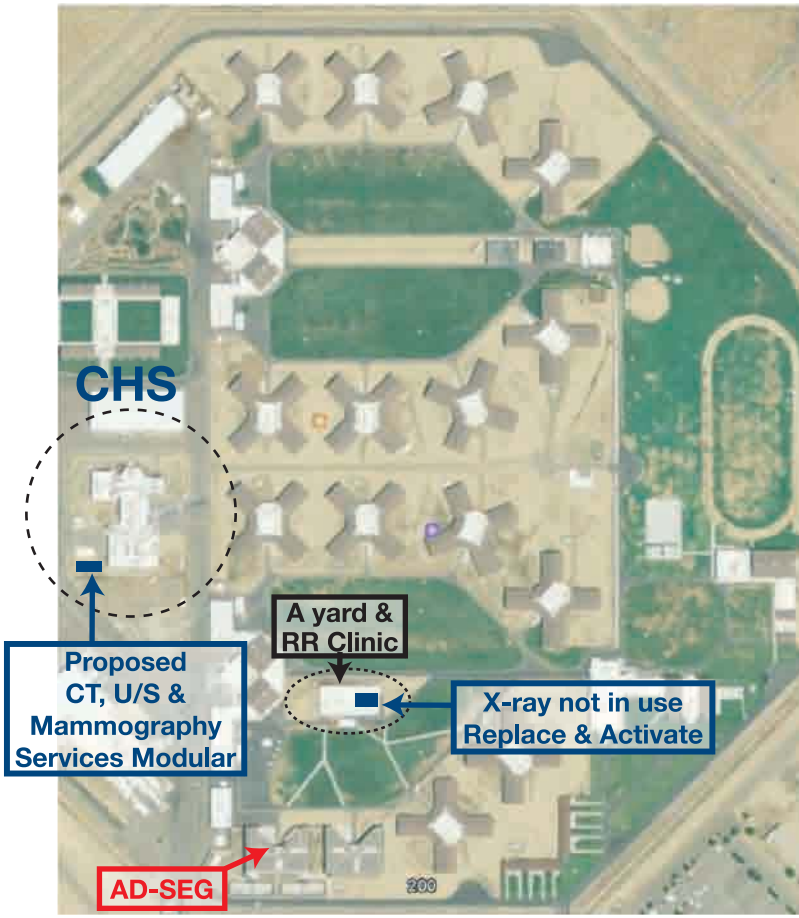
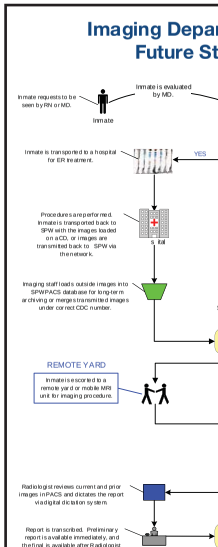



## Valley State Prison for Women (VSPW)

1. Replace and activate the A-Yard X-ray unit to provide distributed service to R&R, AD-SEG
2. Bring CT, US and Mammography in-house by deploying this technology in a modular building next to the CHS
3. CT-MRI Mobile is scheduled but marginal service provided
4. Continue to use a contracted staffing service for Ultrasound



| Scope of Services | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| Single x-ray unit in CHS | Bottleneck for custody scheduling and Transport | X-ray unit in A Yard needs to replaced and utilized for A & B Yard inmate population | Distributed x-ray allows for better coverage and less logistical issues around timely access because of scheduling |
| CT is referred off-site when mobile unit not available | CT is a standard of care and the off-site and mobile options are expensive. Off-site escorts for services creates security concerns and issues related to timely reporting | CT unit permanently housed in modular building near the CHS | Timely access to CT procedures- Highly reduced ongoing cost for transport and study- Cost effective ROI *(see proforma)- |
| Mobile MRI service available. When not available, inmate-patients are scheduled off-site | The Mobile MRI service is sparse, of marginal quality and non-dedicated to the CDCR. At many site using mobile MRI, a good deal of MRI studies continue to be scheduled off-site | Own and Operate a CDCR Mobile MRI service for statewide scheduling and distribution of services | The CDCR owned and operated Mobile MRI service would be subject to the scheduling requirement of the system. The devices would be standardized for inclusion in the PACS initiative and ultimately would be cost effective considering the expense of off-site and existing Mobile MRI services used presently *(see proforma) |
| Ultrasound services are provided 1 day per week using a mobile services provider | Expensive service with minimal coverage to the facility | Purchase and house Ultrasound equipment in the CT/US modular building near the CHS - Contract for technologists only- | Purchasing Ultrasound equipment will create a standard platform for integration to PACS. The CDCR would only need to contract for technologists to perform studies using their own equipment *(see proforma) |
| Mammography is provied using a mobile services provider | This service is expensive and uses process with questionable QA. Delays are inherent in this type of services | CIW & CCWF have fully certified mammography programs - purchase mammo equipment and house it in the new CT/US modular building for on-site services | Highly cost effective to purchase and house a VSPW mammography unit with the CT and US units in a modular building adjacent to the CHS. Better control over quality and timely access to services |

| Staffing | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| 2 Radiology Technologists and a Supervisor Tech are on staff from 7A - 3P<br>(Non-staggered shifts) | Three technologist all on the same shift is overkill for the volume. No coverage into the early evening hours for expanded scheduling | Keep the current staffing ratio and include added on-site services such as Mammography and CT to the VSPW imaging service line. It will be important to ensure that at least one of the staff is Mammography certified | Multi-modality coverage for Radiology, CT and Mammography as well as expanded hours for scheduling and emergency coverage. Provides control over staff QA, performance and training |
| Contracted vendors for Mobile MRI & CT | No control over quality and lack knowledge of CDCR standardized protocols and P&P | CDCR employed Mobile MRI techs to go along with CDCR owned and operated Mobile MRI coaches | Better control over standards and performance of MRI technology staff- MRI subject matter expert to assist management with long term MRI strategic objectives and evolution |
| Contracted Ultrasound vendor | No control over quality and lack knowledge of CDCR standardized protocols and P&P | Purchase and house an ultrasound Machine and only outsource for the technologist | Utilize a single vendor to provide technologist temp coverage. This will make it easier to seek compliance with new CDCR imaging Policies and Procedures |

| Equipment | | | |
|---|---|---|---|
| **Current State** | **Issue** | **Proposed State** | **Benefit** |
| Single x-ray unit in CHS | Bottleneck for custody scheduling and Transport | Purchase and deploy X-ray equipment between yards (see scope of services) | Distributed x-ray allows for better coverage and less logistical issues around timely access because of scheduling |
| No CT Unit | CT is a standard of care and the off-site option is expensive, creates security concerns and issues related to timely reporting | Purchase and house CT unit near CHS (see map) | Timely access to CT procedures-<br>Highly reduced ongoing cost for transport and study-<br>Can be shared to support CVSP as well-<br>Cost effective ROI *(see proforma)- |

| Equipment (continued) | | | |
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| Old "unused" mammo unit in a closet… purchased but never used. | Equipment purchased for Mammography was never properly deployed or put to use in the service line | Assess the old equipment for use - redeploy and certify if possible to the modular unit. If not useable, purchase new mammo unit and bring services in-house | Better control over the technology certification |
| **Policies and Procedures** | | | |
| Non-Standard - Locally developed and incomplete | The Policies and Procedures are ad-hoc and do not reflect the current operations | Standardize all Policy and Procedures across the entire state for the department of Diagnostic Imaging | Standardized P&P assist in commonality of outcomes, staff training and compliance with regulatory agencies |
| **Leadership** | | | |
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| **Professional Services** | | | |
| Mobile MRI/CT services recently initiated | Service is sparse and marginal | Own and Operate a CDCR Mobile MRI service. Bring CT on-site in modular as permanent modality | Control service line quality, efficiency and schedule |
| Multiple contracted hospital sites | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with as few hospitals that provide a wide-range of services | Easier to manage and monitor for compliance |
| Multiple Radiology groups and independent physicians providing services | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with a couple of radiology providers to provide a wide-range of services until RIS/PACS is implemented. Once RIS/PACS is live, contract with a single radiology group to provide all interpretive and peripheral services | Easier to manage and monitor for compliance, QA and performance expectations. This will be made more simple by the implementation of RIS/PACS so that electronic images and reporting is made available |
| Mobile Mammography service in use | Little control over QA - Expensive and subject to scheduling anomalies | Bring all Mammo services in-house at establish an MQSA certified mammo program similar to CCWF and CIW | Better control over quality and improved access to screening mammography |
| Multiple Temporary Tech Agencies being used to provide staff | Creates confusion and difficulty monitoring compliance with multiple contracts. | Work to contract with a couple of Temp staff providers to provide a wide-range of services | Easier to manage and monitor for compliance, QA and performance expectations. |