Imaging (Radiology) Service

Process

Members:

- Caroline Taylor MD – Acting VISN 1 Imaging Service Line Director
- Keith Thibault RT(R,CT) – VISN 1 Imaging Program Manager
- Edward DeAngelo MD – Manchester Radiology Service Chief
- Holly Conroy RT (R) – Manchester Radiology Administrative Officer
- Doreen Mitchell ARDMS – Manchester Radiology Chief Technologist

Data sources considered :

- OPES Physician workload Report
- NVCC Cost reports
- Current and projected workload reports (DSS Radiology Data Cube)

Other resources used:

- VA site planning guides
- AHRA staffing report
- Manchester 2025 service line presentations from Surgery and Medicine
- Stakeholder focus group reports

Site visits:

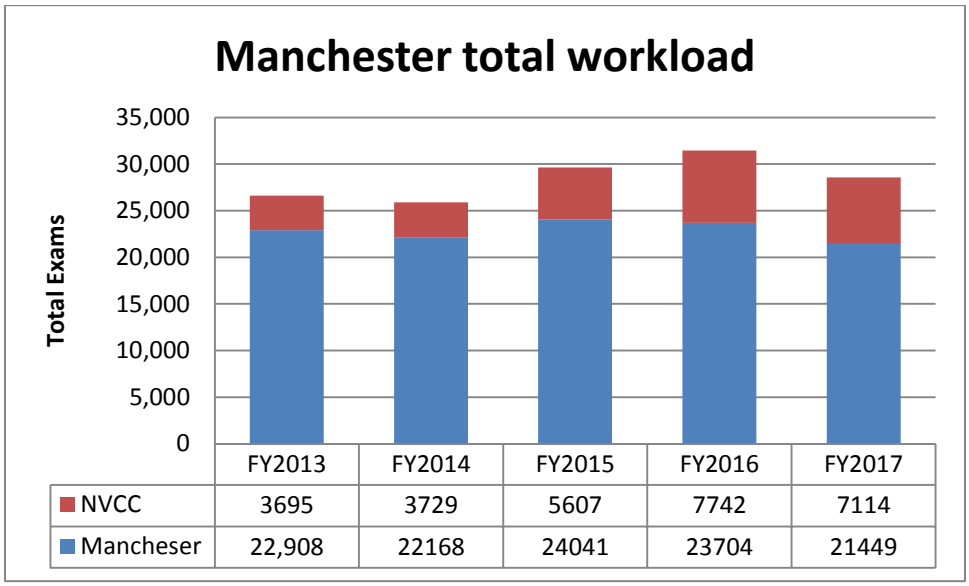
- Manchester Radiology with Surgery and Medicine service leads

Interactions with the Task Force

- First draft Imaging service presentation done October 31, 2017

Current Status of Imaging/Radiology

Figure 1. Manchester Total Workload



*FY2017 partial data (11 months)<Date from DSS Radiology data cube>

- The department currently occupies approximately 11,985 sqft and estimates provided by Ernest and Bland Associates calculates the current need of 24,700 sqft.
- Current staffing
  - 25 total FTE
  - 4.2 FTE vacant
  - Pending contract for radiologist support
  - Teleradiology support from other VISN 1 medical centers provided as needed and where available
  - Currently trying to build a pool of intermittent technical and medical staff to support planned and unplanned leave periods
- Current offerings
  - General Radiology
    - Monday – Friday 7am – 8pm, Saturday and Sunday 8am – 4:30pm
  - Ultrasound
    - Monday – Friday 7am – 3:30pm
  - Computed Tomography
    - Monday – Friday 7am – 8pm Saturday and Sunday 8a-4:30p (*limited services 5pm-8pm and weekends, CT and Radiology covered by a single technologist*)
  - Magnetic Resonance Imaging
    - Monday – Friday 7am – 4pm, one Saturday a Month
  - Nuclear Medicine
    - Monday – Friday 7:30am – 4pm

- Services not offered
  - PET/CT
  - Interventional Radiology
  - Mammography (on site) **total population not great enough to support an in-house program at this time*
- Feedback from stakeholder groups on the current state of services
  - Typically happy with services provided
  - Would like some services provided at the CBOC
  - Would like to see expanded hours of service
- Current state of services provided in the community
  - Mammography services widely available throughout the catchment area
  - All other radiology service may be available at the closest medical facility

Table 1. Current Square Footage – Imaging

Current Square Footage (Imaging)			
Site	**SF**	**Needed Space**	**Space Gap**
Manchester VAMC	~11,900sqft	~24,700 sqft	~12,000 sqft
Portsmouth CBOC	0	No Imaging	
Somersworth CBOC	0	No Imaging	
Conway CBOC	0	No Imaging	
Tilton CBOC	0	No Imaging	

Projected Workload for Radiology

Based upon trends from the VistA Radiology package and anecdotal information from Manchester Radiology staff workload is projected to remain stable with a slight (3-5%) growth given the status quo. As new programs are added or current programs are expanded radiology growth will increase. Services such as orthopedics have a larger impact on radiology workload, whereas services such as mental health have a lesser impact. Therefore future space and staffing needs will be dependent on the final scope and provision of care mix.

Options Considered

Option 1: Status Quo

- No impact to space, staffing, or budget

Table 2. Pros and Cons of Option 1

PROS	CONS
1. Cost Neutral 2. No disruption to current services	1. Staffing (physician, technical and support) currently not sufficient to handle workload during planned and unplanned leave 2. Space not conducive to efficient workflow or adequate for current needs 3. Infrastructure does not support high tech equipment installations (power, HVAC, etc.)

Option 2: Right Size Staffing and Space (base plan)

- Provide additional technical and support staff to allow flexibility in staffing leave and unplanned absences, expanded hours of coverage
    1. Additional 7 FTE technical *
    2. Additional 1.5 FTE support staff
    3. Additional radiologist for appropriate level of coverage daytime/extended hours schedule
    4. Pursue contract for part-time mobile PET/CT services (could option current VA WRJ contract)

        **Can be staffed with some per diem and multiple part-time positions to allow greater flexibility*

- Impacts
    1. Space: Increase space at Manchester VA to include waiting/reception, office, reading rooms, and larger exam rooms. (~5000-8000 sqft)
    2. Staffing Cost: approximately $940K per year increase (may be less with creative staffing options)
    3. Mobile PET/CT contract: ~$30,000/yr
    4. Infrastructure costs (unknown)

Table 3. Pros and Cons for Option 2

PROS	CONS
1. Greater flexibility to adjust to current and future needs 2. Ability to absorb planned and multiple unplanned staffing leave periods without impacting patient access/capacity 3. Higher staffing density improves patient safety, lessening the chance of volume driven error.	1. Increased cost in infrastructure and personnel 2. Impact to current services during construction 3. Potential difficulty in obtaining well trained/educated staff

Option 3: Full Service intermediate care hospital

Provide additional staff, space and services to support a full 24/7/365 med/surg Intermediate care inpatient facility with urgent/emergent care, ICU, and multispecialty surgical services.

5. Additional 21FTE technical (across all modalities)
6. Additional 1.5 FTE Diagnostic Radiologist and 1.5 FTE Interventional Radiologist (plus 24 / 7 services contract)
7. Nursing support
8. Add IR services (1355 sq ft) and support space for consent, supplies, nursing , storage supplies, physiological monitoring, patient monitoring
9. Opportunity for Community Partnerships for mammography services (screening and diagnostic)
10. Mobile PET/CT services (contract w/ staff)

- Impacts
  1. Space needs: 8000-10000sqft of additional space required
  2. Staffing: approximately $2,520,000/yr additional staffing costs. Additional contract staff would be needed to provide on-call coverage for Interventional services
  3. Infrastructure costs would increase over base plan and may require addition high cost high tech equipment
     - Interventional room - $3,000,000 (plus 1355sqft)
     - CT for ER - $1,000,000 (900 sqft)
     - Radiology room for ER - $350,000 (650 sqft)
     - OR support Imaging - $300,000 (no space impact)

4. Opportunity for Community Partnerships for mammography services (screening and diagnostic)
5. Imaging would supply critical 24/7 staffed support to Medicine and Surgery services

Table 4. Pros and Cons for Option 3

PROS	CONS
1. 24/7 self-contained Imaging service providing diagnostic and treatment services. 2. Ability to respond to a wide range of medical needs in a swift manner	1. High cost / low efficiency service (need for coverage would most likely overwhelm demand) 2. Some specialty services may be hard to staff and retain due to low projected demand.

Option 4: Multispecialty Ambulatory Care Center (ACC)

Provide additional space and staff to support a full multispecialty ambulatory care center (ACC). Service would include support to extended Urgent/Emergent care, outpatient surgery, Pain Management, and others. This plan would provide extended coverage and capacity for "add-ons" and assumes a 24/7 Urgent care service.

- Additional 7-12 technical FTE depending on mission and hours (Staffing for Right Size option may be sufficient)
- Additional portable services for OR and Pain Management support
- Limited "Interventional" Radiology needs – lines, etc, multifunctional IR suite
- Patient monitoring and consent space
- In addition to : procedure room for "bedside" line placement by Nursing Venous Access Team
- After hours radiologist consult and reading – Nightwatch

❖ Impacts

6. Space needs: 8000-10000sqft of additional space required
7. Staffing: approximately $1,335,00yr additional staffing costs.
8. Infrastructure costs would increase over base plan and may require addition high cost high tech equipment
    - $2,000,000 IR equipment (1100 sqft)
    - Additional mobile support equipment $450.000
9. Imaging would provide on-call support for most imaging services during WHEN hours.

Table 5. Pros and Cons for Option 4

PROS	CONS
1. Full 24/7 coverage 2. Highly flexible staffing model to allow for contingency staffing 3. Most needed/demanded services provided in-house 4.	1. Higher cost model for potentially few exams (coverage over cost) 2. High impact to space requirements and infrastructure demands

Option 5: CBOC Imaging

Provide limited on-site imaging services (general rad, ultrasound) staffed by VA providers at select CBOC locations. Some higher cost services could be provided by mobile contracts (CT and MRI)

Recommendations

Radiology is a support service providing essential diagnostic assistance for almost all services (service lines). It is therefore imperative that the infrastructure and staffing of Radiology is matched to the needs of the services provided. Gaps in staffing create extended wait times leading to a delay in care and treatment. Poor infrastructure leads to inefficiencies in care delivery and the inability to keep pace with current technology.

Recommendation 1: Right Size Staffing and Space

- **This subcommittee recommends option 2 – Right size**
- This option will provide the diagnostic support currently needed and will allow for some flexibility in access for the future
- Improvements in space and layout will be required to be more patient centric and to improve workflow
- Infrastructure improvements will be needed to provide adequate HVAC and power to accommodate modern imaging technology
- Manchester Radiology is currently experiencing significant wait time issues in MRI and historically US. This plan will improve access and allow for increases in future workload on an outpatient basis. The space and infrastructure improvements will improve efficiencies and make future equipment updates/replacements possible.

- It is highly recommended that Manchester also pursue mobile PET/CT services on a limited basis as workload dictates.

Recommendation 2: Addition of Imaging to select CBOCs

- Addition of Imaging at select CBOC's (combined Somersworth/Portsmouth clinic could make the most sense to start)
- As new space is considered provisions for basic radiology services should be considered (General radiology)
- A needs assessment should be performed to look at the need for provision of other imaging modalities (CT, US, DEXA)
- While not the most efficient service model (low volume), providing basic imaging services at some CBOC locations would be patient centric and could expedite diagnosis and treatment for those patient groups.

Recommendation 3: Expansion of Imaging Resources

A substantial change in the medical center complexity will necessitate expansion of imaging space, purchase of additional high-technology equipment placed in strategic locations, and increase in scope of the current radiology and imaging services consistent with the mission. High-tech equipment, added staff and expanded hours are costed above.