Developing an Enterprise Imaging Strategy

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Conflict of Interest

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Has no real or apparent conflicts of interest to report.
Agenda

• Enterprise Imaging
• Governance
• Establish mission
• Determine current state
• Create vision and identify key characteristics
• Conduct needs assessment & gap analysis
• Develop strategy
• Develop SMART goals
Learning Objectives

• Evaluate considerations when developing an enterprise imaging strategy
• Identify organizational and workflow drivers impacting strategic direction
• Develop a SWOT matrix to guide enterprise imaging strategy and tactical planning
• Compare enterprise imaging strategic approaches
• Design an effective enterprise imaging strategy tailored to your organization
Enterprise Imaging

• a set of strategies, initiatives and workflows

• implemented across a healthcare enterprise

• to consistently and optimally capture, index, manage, store, distribute, view, exchange, and analyze all clinical imaging and multimedia content

• to enhance the electronic health record

Enterprise Imaging
Enterprise Imaging

- Existing infrastructure
- Interoperability
- User provisioning
- Resource levels and teams
- Patient Engagement
- Workflows
- Retention policies
- Security policies
- Change management
- Standards
- Multidisciplinary relativity
- HIM
- Marketing
Enterprise Imaging - Community

7 HIMSS-SIIM White Papers Available

The collaborative HIMSS-SIIM Enterprise Imaging Working Group has completed and released six white papers that capture the current state of Enterprise Imaging and set the path for the future.

The white papers are:

1. "A Foundation Collaborative" by Christopher J. Reish
2. "Enterprise White Paper" by Christopher J. Reish
3. "Considerations for Improved Collaborative" by Edward G. Hard
4. "Ordering Pre- and Post-Capabilities, HIMSS-SIIM" by Henry K. Kim
5. "The Current Viewing" by Christopher J. Reish
6. "Workflow Collaborative" by Alexander A. Nordin

These papers form the foundation of a new and rapidly developing community within healthcare informatics. To learn more, please visit the Enterprise Imaging website at HIMSS-SIIM.org/enterpriseimaging.

Learn about the working group's activities and how to join.
Providers need to do their homework up front to understand the scope and goals they have… How can a vendor provide a solution to customers who do not know what they want to solve?

The C-suite really needs to lead out with enterprise imaging, but today, enterprise imaging is regulated to a position of limited resources and alignment.
Enterprise Imaging

• Incorporation of Enterprise Imaging
• Foundational Goals
  • Multidisciplinary
  • Workflow support
  • Analytics
  • Patient engagement
  • Integration
  • Interoperability
Why Start?

• Financial
• Risk aversion
• Availability
• Accessibility
• Hardware Agnostic Systems
• Systems Replacement
  – Contract ending
  – Consolidation
Governance

• Differences in structure:
  – Imaging Informatics Governance Committee
  – PACS Governance Committee
  – IT Physician Advisory Committee

• Evolves with imaging service line expansion
  – Key imaging service line stakeholder representation

• Solid charter addressing
  – Current member roles and needs
  – Future member roles and needs
Governance

• Mission
• Vision
• Strategy
• Goals

- Image definition
- Image retention
- Where images will be accessed
- Where images will be stored
- How images will be stored
- Systems integration
- Workflow support
- Imaging device standards
Mission

• Overall purpose
• Basis for strategic plan
• Align with organizational mission
• Inspire
Mission

Example Healthcare Organization Mission Statement

To improve the health of our community through accessibility, education, quality and innovation

accessibility
– availability
– interoperability

quality
– integration
– analytics

innovation
– transformation
– functionality

EI PROGRAM MISSION

Transform medical imaging systems functionality, availability, integration, interoperability and analytics
Current State

- Existing architecture
- Drivers
  - Internal
  - External
- Processes
Current State: Existing Architecture

- Electronic Health Record (EHR)
- Document Management System (DMS)
- Ancillary information systems
- Image repositories
- Image viewers
- Interface engine
- Infrastructure
- Business continuity
Current State: Organizational Drivers

- Organization type and structure
  - Large, complex health system
  - Community Hospital
  - Academic Medical Center
- Goals & strategic alignment
- For profit vs not-for-profit
- Regional considerations
- Patient population

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<th>Drivers</th>
<th>Components</th>
<th>Process determinants</th>
<th>Outcomes assessment</th>
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## Current State: Service Line Drivers

### Operational Dependency
- Radiology = 100%
- Cardiology > 85%
- Ophthalmology > 80%
- Pathology < 60%
- OB-GYN > 50%
- Dermatology < 50%

### Departmental Specific
- Goals
- Strategy
- Business development initiatives
- Provider satisfaction
- Financial impact
- Stakeholders
Current State: Processes

- Image definition
- Image retention
- Where images are accessed
- Where images are stored
- How images are stored
- Systems integration
- Workflows
- Downtime
- Imaging device standards
- Procurement
- User provisioning
- Change management
- Testing
- Release of information
- Information management
- Image management
Current State: SWOT Considerations

- Financial
  - Investment
  - ROI
  - Business development
- Resources
  - Core team staffing level
  - Other team dependencies
  - Experience
- Engagement
  - Prioritization
  - Stakeholder buy-in
  - Sr. Leadership support
- Technical constraints
  - Infrastructure
  - Data security policies
  - Legacy system(s), storage
SWOT – IT vs Clinical Driven

**INTERNAL FACTORS**

**STRENGTHS (+)**
- Established Imaging Governance
- Senior Leadership buy-in
- Experienced team

**WEAKNESSES (−)**
- Current support model and resource levels
- Low prioritization of Enterprise Imaging initiatives
- Historically poor workflow compliance
- Existing core systems technology is legacy

**EXTERNAL FACTORS**

**OPPORTUNITIES (+)**
- PACS replacements required (funding)
- Advanced external readings (business growth)

**THREATS (−)**
- Limited service line representation in Governance
- Existing procurement procedures
- Regulatory changes
- Data center restructuring
Recap

• Mission
• Current State
• Next steps
  – Vision
  – Goals
  – Needs Assessment & Gap Analysis
  – Strategy
  – SMART goals

ENTERPRISE IMAGING PROGRAM MISSION
Transform medical imaging systems functionality, availability, integration, interoperability and analytics
Vision: Considerations

• Broad impact
  – Imaging community
  – Governance “optimal state”
  – Stakeholder input
  – Organization goals
  – Drivers
• Communicates easily and effectively
  – Motivates
  – Inspires
Vision

• Begin with the end in mind…
• Performance
• Functionality
• Availability
• Accessibility
• Value creation
  – Common purpose: The Patient
  – Bridge gap between strategy and innovation
  – Supports provider excellence

EI PROGRAM VISION

A multidisciplinary, multifunctional medical imaging systems environment adding value for our providers and patients
Goals

Example Enterprise Imaging Vision
**A multidisciplinary, multifunctional medical imaging systems environment adding value for our clinicians and patients**

- **Multidisciplinary:**
  - all medical imaging

- **Multifunctional:**
  - imaging relativity
  - comparison capabilities
  - advanced subspecialty visualization

- **Value adds:**
  - standards adherence
  - interoperability
  - patient engagement
  - tele-consults
  - cutting-edge expertise
A multidisciplinary, multifunctional medical imaging systems environment adding value for our clinicians and patients.

**2020 VISION**

**DEFINING CHARACTERISTICS**

- Enterprise availability and accessibility of all medical imaging
- Robust multidisciplinary and multifunctional imaging relativity, comparison capabilities, and advanced subspecialty visualization
- Adherence to standards providing a high level of interoperability both internal and external
- Valued added improvements supporting patient engagement and tele-consults
- Recognition, such as through HIMSS Analytics achievement, for enterprise imaging excellence and cutting-edge expertise
Recap

• Mission
• Current State
• Vision
• Goals

• Next steps
  – Needs Assessment & Gap Analysis
  – Strategy
  – SMART goals
Needs Assessment

- Image sharing / exchange
- Patient engagement
- Cost reduction
- Analytics
- Encounters-based workflow
- Non-DICOM support
- Mobile image capture
- Resources

- Business Continuity
- Performance
- Newer technologies
- Specialty considerations and challenges
- Support model
- Centralization
- Security
Gap Analysis

- Available technologies
  - DICOM only ingestion
  - Gap = Non-DICOM ingestion
- Staff skill level / knowledge
  - Radiology PACS specific
  - Gap = understanding of other imaging specialties
- Workflows supported
  - Orders only
  - Gap = encounters (EBIW)
Recap

• Mission
• Current State
• Vision
• Goals
• Needs Assessment & Gap Analysis

• Next steps: Define
  – Strategy
  – SMART goals
Strategy

• Identify top 5 goals
• Approach
  – “Lead the industry in patient engagement”
• Method to achieve
  – “Implement methods supporting patient management and accessibility of the medical imaging record and image-dependent consults”
Goals: SMART

• Align with Vision and Key Characteristics
  – “Lead the industry in patient engagement through implementation of methods supporting patient management and accessibility of the medical imaging record and image-dependent consults”

Example Goal 1: Enhance patient engagement

Example Goal 2: Enhance patient engagement by implementing self record management through the patient portal, reducing CD requests by 10% within first 12 months of deployment.
Challenges & Goals Analysis

- Financial
- Staffing
- Existing architecture
- No existing EIR
- Vision not defined - *begin with the end in mind*
- Goals not imaging-specific
- “Imaging” not defined
- Systems or tools not currently available to achieve
- Leadership support needed to achieve
Key Measures

- **KPIs:**
  1) Reduce 5/10 YR TCO by 20%
  2) Reduce downtime (99.99% uptime)
  3) **Reduce CDs by 10% within 12 months of patient portal integration**

- **Growth:**
  1) Integration of imaging specialties outside Radiology and Cardiology
     - At least 10 specialties added by 2020

- **People:**
  1) Increase imaging provider satisfaction by 30%
     - as determined by baseline and post implementation surveys
  2) Improve imaging provider productivity by more than 10%
     - as determined by average RVUs – baseline and post implementation metrics
Objectives
- Mission
- Vision

Goals
- Short-term
- Long-term

Strategy
- Top 5 goals with strategy to achieve

Key Measures

Example of a draft strategy from Ochsner Health System, IS Department, Enterprise Imaging
Recap

• Mission
• Current State
• Vision
• Goals
• Needs Assessment & Gap Analysis
• Strategy
• SMART goals
• Next steps: Plan / Execute
## Strategic Approaches

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<th><strong>Academic</strong></th>
<th><strong>Health System</strong></th>
<th><strong>Community Hospital</strong></th>
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<tbody>
<tr>
<td>• Medium, complex</td>
<td>• Large, complex</td>
<td>• Smaller footprint</td>
</tr>
<tr>
<td>• No replacement</td>
<td>• Replacement</td>
<td>• Replacement</td>
</tr>
<tr>
<td>• No EIR</td>
<td>• Legacy Repository</td>
<td>• Has EIR</td>
</tr>
<tr>
<td>• Priority = Risk</td>
<td>• Priority = Function</td>
<td>• Priority = Cost</td>
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- EIR install & non-traditional service lines
- Replace EIR & change distribution model
- Replace
Planning

- **Operating Procedures**: multi-specialty image capture, image management, downtime
- **Policies**: user provisioning, image retention, release of information
- **Change Management plan**: adaption and adoption
- **Metrics and analytics**: surveys, measure success
- **Shared cost model**: flat, usage
- **Value creation**: bridging gap between strategy and innovation
Planning: Organizational Impacts

• Marketing
  – External image sharing / exchange

• Finance
  – How to distribute costs?

• Patient community
  – Ability to manage own record

• Aligning with organizational strategy
  – Prioritization
Preparing For Change

• Targets of change
  – Everyone
  – Collaboration and engagement for success

• Agents of change
  – Project manager
  – Project owner(s)
  – System owner(s)
  – Physician champion(s)
  – C-suite
Questions

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