

Evaluated Standards

Foreign Exam Management use cases cover three main areas requiring standardization:

- Document and Image Sharing
- Imaging Report Format
- Anatomic Region Code

Listed below are the available standards considered for each standardization category, the chosen alternative being highlighted.

Document and Image Sharing

Foreign Exam Management will be implemented by an organization participating a jurisdictions' shared Diagnostic Imaging Repository (DI-R) system. The DI-R will provide for registration and long term storage of sets of images and reports and standards based services that will be leveraged and, possibly, upgraded to support the FEM use case(s).

Standard	Fit for Purpose			Stewardship		Quality		
	Fits Requirements	Implementation Type	Vendor Support	Canadian Steward	SDO Maintained	Complexity	Standard Maturity	Training, Support and Tooling
IHE Cross-Enterprise Document Sharing - Imaging (XDS/XDS-I)		Production in Canada		Yes	Yes		High	
DICOM / HL7 v2 and Clinical Document Architecture (CDA)		Production in Canada		No	Yes		High	
Architectural Constraints and Considerations				Secondary Benefits				
None of these standards impose significant architectural constraints								
Recommendation				Supporting Rationale				
IHE Cross-Enterprise Document Sharing - Imaging (XDS/XDS-I)				The IHE XDS-I.b profile specifies the use of existing standards including HL7 v2/CDA and DICOM to enable registration and sharing of images and reports. A Canadian XDS Affinity domain guide is available to support implementation of the profile.				

Note:

The IHE XDS/XDS-I profile builds upon the foundational HL7 and DICOM standards by identifying the roles of different actors participating in the information exchange and specifying how data exchange transactions and applicable standards enable document sharing. It also prescribes an affinity domain process that was employed by the Canadian Diagnostic Imaging Community to constrain areas of optionality in the IHE XDS/XDS-I profile to Canadian requirements. The XDS Affinity Domain Implementation Guide is the work product of this group.

Report Format



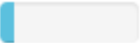

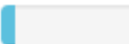

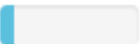
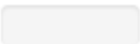
XDS/XDS-I supports a range of report formats through the use of different transaction and reporting

Standard	Fit for Purpose			Stewardship		Quality		
	Fits Requirements	Implementation Type	Vendor Support	Canadian Steward	SDO Maintained	Complexity	Standard Maturity	Training, Support and Tooling
Clinical Document Architecture (CDA) R2		Limited in Canada		No	Yes		Normative	
Portable Document Format (PDF)		Production in Canada		No	N/A		N/A	
DICOM Structured Reporting (SR) / Secondary Capture (SC)		Production in Canada		No	Yes		Normative	
Raw Text		Production in Canada		No	No		N/A	
Architectural Constraints and Considerations				Secondary Benefits				
Use of CDA document allows content to be rendered in all other formats. Raw text based HL7 v2 ORU and DICOM SR are widely used and present in DI-R systems and require support.				PDF may preclude secondary use, while the structured data of a CDA document supports machine readability and may enable secondary use of clinical data, clinical decision support or application of administrative/demographic data to analytics/business intelligence.				
Recommendation				Supporting Rationale				

Clinical Document Architecture (CDA) R2	It is the goal of the Canadian XDS Affinity domain that reports will be stored in HL7 CDA format (using the pan-Canadian header format) as these reports (a) support required metadata, and (b) can be transformed to all other formats.
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Anatomic Region Code

Metadata plays an important role in the identification of relevant priors during the fetch and pre-fetch use cases. The significant coded metadata elements for the FEM use case are the acquisition modality of image and the anatomical region being studied. Acquisition modality was adopted as prescribed.

Standard	Fit for Purpose			Stewardship		Quality		
	Fits Requirements	Implementation Type	Vendor Support	Canadian Stewardship	SDO Maintained	Complexity	Standard Maturity	Training, Support and Tooling
Coarse Body Parts (SNOMED CT subset)		Production in Canada		No	Yes (IHE)		Normative	
Anatomic Region (DICOM CID 4)		International		No	Yes		Normative	
Architectural Constraints and Considerations				Secondary Benefits				
Both terminology subsets referenced are published as flat lists with descriptions and codes.				Using pan-Canadian terminology subsets supports inter-jurisdictional interoperability. SNOMED CT's terminology model can be leveraged to support aggregation and analysis of the information captured within vaccination records.				
Recommendation				Supporting Rationale				
Coarse Body Parts (SNOMED CT subset)				The DICOM CID 4 value set is very detailed and generally inconsistent with the general approach of "casting a wide net" employed when fetching content within the FEM use cases.				

Note:

Anatomic Region was localized for Canadian use.