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Pediatric Echo Structured Reporting

– An Experience Sharing

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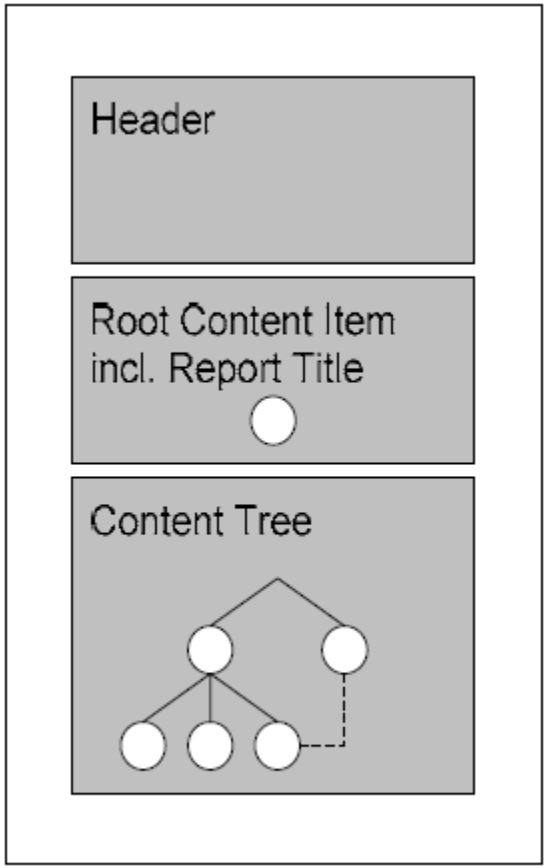
Pediatric Echo Structured Reporting – An Experience Sharing

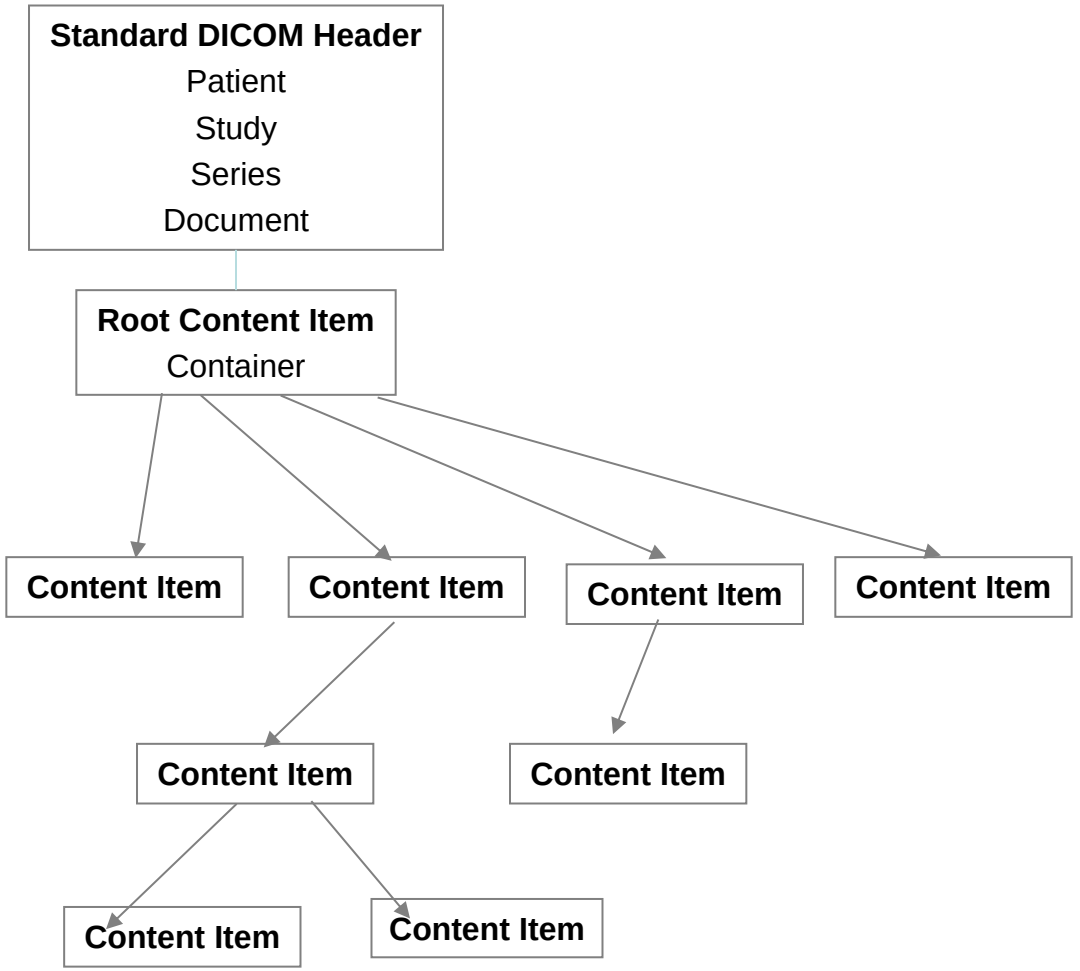
- Introduction
- Overview of the differences between adult echo and pediatric echo templates
- Challenges in Implementing pediatric echo structured reporting
- Conclusion

Introduction – DICOM SR

❖ DICOM Structured Reporting (SR) - Provides an efficient mechanism for representing, distributing clinical evidence reports



SR Document Structure



Introduction – DICOM SR

- DICOM SR Templates for several ultrasound procedure exist examples are **Obstetrics and Gynecology, Echocardiography and Vascular**

- The cardiac DICOM SR template covers adult echo measurements and calculations comprehensively

Introduction – Echocardiography in adults and children

- Echocardiography in adults encompasses
  - Heart Valve diseases
  - Disease of heart muscle
  - Coronary artery disease
  - Intra cardiac tumors

- Echocardiography in Children, newborns and the unborn
  - Congenital abnormalities that arise during pregnancy

- In 2010, DICOM introduced pediatric echo template supplement 78, standardizing the terms for pediatric echocardiography measurements.

Overview of the differences between adult echo and pediatric echo templates

Pediatric Echo Template - Post Coordination definition

Provides the **post-coordination** definition of a measurement with a variety of concept modifiers. The **finding site** may be further specified within this template by the **target site** and **target site modifiers**.

Adult Echo – Pre Co-Ordination definition

Provides **pre-co ordination** definitions, meaning the template will have **finding site** but **may not** have a **target site** and **target site modifiers**. All of them would be combined as a **single concept**

Eg: A measurement A2Cs (Apical 2-Chamber) in pediatric echo template would define

concept as “Major Axis”,
finding site as “Ventricle”,
target site as “Left Ventricle”,
target site modifier as “End Sys”

finding site as “Ventricle”
concept as “Left Ventricle Systolic Major Axis”

Overview of the differences between adult echo and pediatric echo templates

New Items added in Pediatric Echo Template….

- Coded concepts for congenital disease have been added to pediatric echo template.
- New definitions are added to pediatric echo template.

Example: Fetal measurements, Fetus characteristics etc.

- Some definitions are retired

Example “End of systole” was replaced with "End Systole”

- More patient characteristics definitions are added
- In pediatric echo template in many context group NCDR2.0b (National Cardiovascular Data Registry) codes are replaced with equivalent SNOMED (Systematic Nomenclature for Medicine) codes.

Challenges in Implementing pediatric echo structured reporting

- **Mapping Measurements** - Expert Level Knowledge of Medical Terminology and DICOM Standards.
- **Correctness of the dictionary** - Ensured only by manual testing and reviewing
- Developing a comprehensive, structured, dedicated DICOM dictionary database and efficient methods to retrieve and export the DICOM data
- **Voluminous** measurements increases the challenge.

Conclusion

- Increases the Interoperability
- Success dependent on adoption of these templates simultaneously by Imaging and PACS Vendors
- Should we be the early adopters or wait till the PACS vendors start supporting them. ?

References

http://dicom.nema.org/

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Thank you for your attention !