Managing Diagnostic Report Data: Interacting between systems to serve diagnostic reports using OpenMRS and FHIR

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Why are we talking about an OpenMRS GSoC project for a GHI WIP???
The FHIR Diagnostic Report Resource

• Set of information that is typically provided by a diagnostic service
• Information can include
  – atomic results
  – text reports
  – images
  – codes
Diagnostic Report Resource can be used for...

- Laboratory (Clinical Chemistry, Hematology, Microbiology, etc.)
- Pathology / Histopathology / related disciplines
- Imaging Investigations (x-ray, CT, MRI etc.)
- Other diagnostics - Cardiology, Gastroenterology etc.
Introducing FHIR service category

• Identifies all possible types of diagnostic reports
• 40 codes? (too lazy to count)
• Specific behavior per each service category
My very own Lab Handler

Lab Report (LAB)  Radiology Report (RAD)

AbstractHandler

DiagnosticReportResource

DefaultHandler

DiagnosticReportServiceImpl

LaboratoryHandler (LAB)

RadiologyHandler (RAD)

Handlers for other service categories
Support for Laboratory data

• How have we been storing lab data?
• What's the best way to store lab data?

One Lab report == one OpenMRS Encounter
Support for Radiology Data

• How have we been storing radiology data? 
  We haven’t and we wont :)
• What's the best way to store radiology data? 
  PACS systems
• Aaaaand the ImagingStudy Resource
Radiology report content

Think structured and unstructured data
  • Name/subject/performer
  • Imaging study
    – Reference to full details of imaging
  • Image
    – images associated with this report
  • Conclusion
    – Clinical Interpretation of test results
Order Radiology report

OpenMRS

PACS system

Order Entry

Do Radiology stuff

Request Radiology report

get report

invoke

0..*

return

Store data in OpenMRS
Identifying a Use case

What PACS system would we demo against?

• Introducing SIIM (Society for Imaging Informatics In Medicine)
Working examples... Meh.


Lessons learnt
Next steps
Blame these people ;)  

- Milan Senevirathne  
- Harsha Kumara  
- Judy Wawira