

Structured reporting system

Paweł Paczuski
`p.paczuski@stud.elka.pw.edu.pl`

06.04.2018

Outline

Introduction

- Problems of modern medicine

- Standards

- Typical workflow of a radiologist

Structured reporting system

- Radiological report as a tree

Areas of interest of modern medicine

- ▶ increasing variety of diagnostic techniques and procedures
- ▶ unsatisfiable demand for medical services
- ▶ bureaucracy
- ▶ huge volumes of data to process and store. **Healthcare Informatics**

Healthcare Informatics vs Computer Science

Healthcare standards

- ▶ medical nomenclature SNOMED CT, LOINC
- ▶ exchange protocols and formats HL7, DICOM

Patient Information:

- Name: JONES, JOHN
- Date of Birth: 01/01/1975
- File # 1112345
- Exam Type: ABDOMEN WITH CONTRAST
- Date: 11/11/2021

Findings:

- Bilateral hydronephrosis (series 35) may reflect a renal compromise. Stable mild splenomegaly as again noted in the left kidney. No mass is identified in the kidneys. No masses seen along the right ureter.
- Postoperative changes are seen from a distal pancreatectomy and cholecystectomy following previous Whipple procedure. There is dilatation of the pancreatic duct in the body and tail (series 6, images 23). No recurrent mass is seen in the pancreas or anatomosis.
- There is mild prominence of the biliary ducts in the left hepatic lobe (series 7, image 20). No filling defect is seen within common duct.
- Spleen and adrenal glands are unremarkable. No free fluid or lymphadenopathy seen.
- No bowel obstruction is identified. Anterior abdominal hernia is again noted entrapping small bowel without evidence of strangulation (series 7, image 35).
- There is marked S-shaped scoliosis of the thoracolumbar spine. No net anterior wall lesions are identified.

IMPRESSIONS:

- Interval development of marked hydroureteris in the right kidney. No discrete stone or mass is seen in the visualized portions of the right ureter.
- Unchanged T scan of the abdomen and pelvis with and without contrast for further evaluation.
- Stable mild splenomegaly in the left kidney.
- Postoperative change from previous Whipple procedure. No recurrent mass in the pancreas or anatomosis.
- Mild prominence of the biliary ducts in the left hepatic lobe.
- Nolymphadenopathy or metastatic lymph nodes.
- Anterior abdominal wall hernia contains small bowel without evidence of strangulation or obstruction.
- Marked S-shaped scoliosis of the thoracolumbar spine. [National Radiologist]

Technical Details:

- Phase: Prone
- Table Weight: 80.0 kg
- LIP: 145, CATH: 18
- FOV: 350
- Position: 3.00 mm; rotation: 604.92 mm

Lesion Data:

Location	Size (mm)	Volume (cc)	Density (HU)	Perimeter (cm)	Area (cm²)
Right Kidney	18.00 x 10.00 x 1.43	18.00	-123.00	11.00	11.00
Left Kidney	18.00 x 10.00 x 1.43	18.00	-123.00	11.00	11.00

◀ ◻ ▶ ◀ ◻ ▶ ◀ ≡ ▶ ◀ ≡ ▶ ≡

Areas of optimization

- ▶ radiologists are **very BAD** at typing on keyboard
- ▶ speech recognition has problems with capturing medical language

Reporting ontology

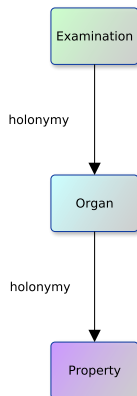
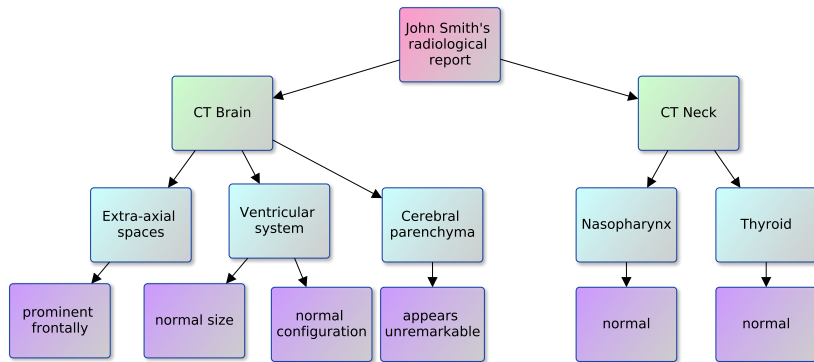


Figure: Types of entities and relations between them

Radiological report as a tree



Textual representation

John Smith

date: 02.04.2005

CT Brain

Extra-axial spaces: prominent frontally.

Ventricular system: normal size; normal configuration.

Cerebral parenchyma: appears unremarkable.

CT Neck

Nasopharynx: normal.

Thyroid: normal.

Report editor interface