

JSRS
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Regional imaging interpretation centre

- a new concept with emphasize to
education and subspecialist training

Frode Laerum

Trends

- Technology is de-centralised, radiologists are centralised
 - Difficult to get radiologists in rural areas/smaller towns
- Image interpretations have become more complicated and time consuming
- Subspecialists for primary interpretation
 - General radiology/radiologists disappear
- Demand for radiologists closer to the clinical patients and clinicians
 - Consultants advising modalities and methods

The present concepts

- Virtual networks
- Private institutes
- International teleradiology centres

QuickTime™ and a
decompressor
are needed to see this picture.

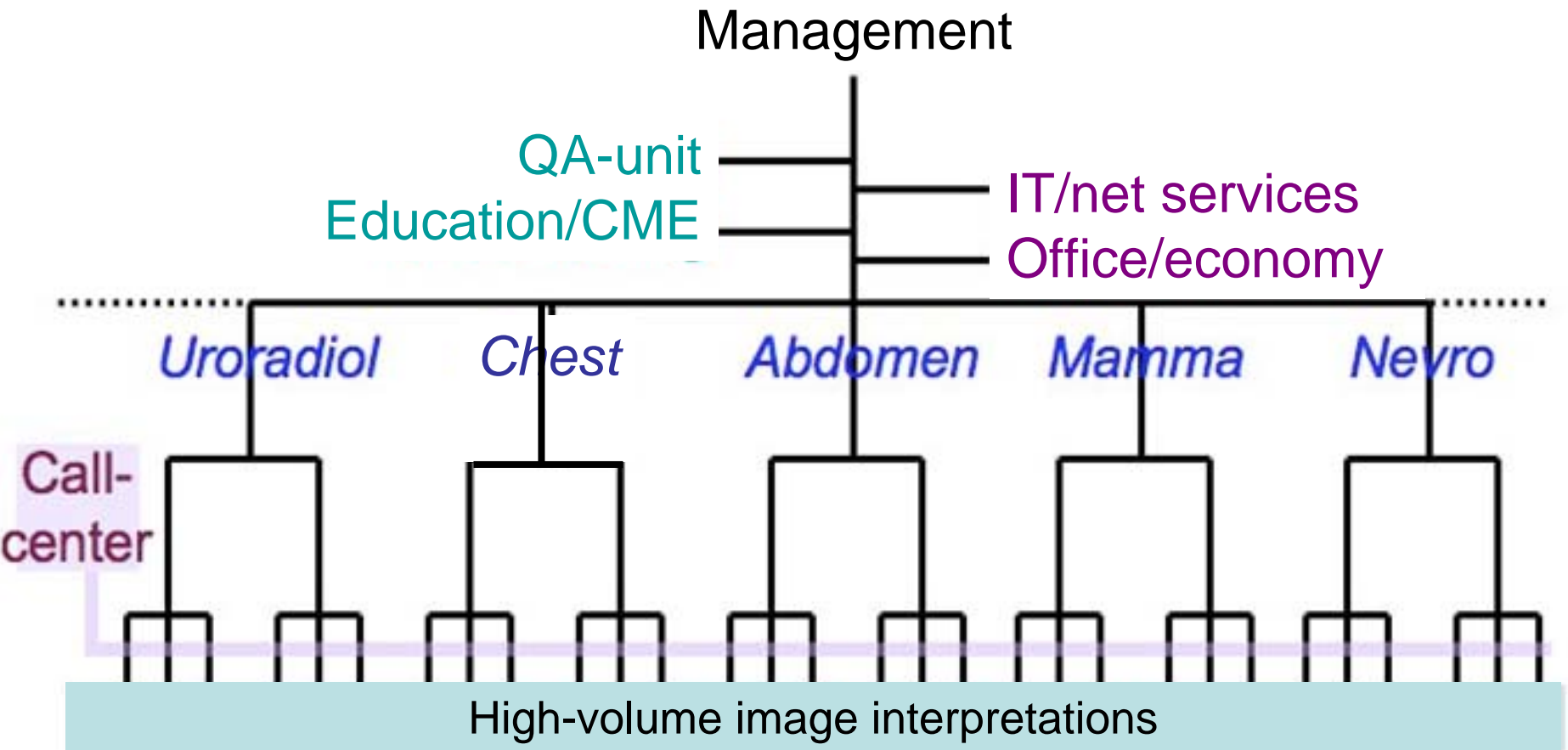
Regional Centers for Remote Interpretation

- Coupled to specialists' education and training, competence development and quality control
- Streamlining interpretation and reporting ("LEAN", six-sigma)
- Core staff rotating from adjacent major hospitals
- A center for the whole region
 - Shorttime engagements, visitors, CME

A center within the public health ward

- Resource for all hospitals within the region, centrally located with optimal possibility for commuting from a number of hospitals
- Rotation of all hospital-employed radiologists 2 days per week.
- Every radiologist "takes along" more than the corresponding interpretation-volume he/she alternatively would have done at his home location.

Organisation map





Rotation also for specialists in training

- Included in the work-force as in regular radiology departments
- Intensify and organise joint CME and other educational efforts

Short communication lines

- Large work-station landscapes
- Closeness of radiologists, teamwork
- Easy access to subspecialists
- Broad professional network

Quality assurance and efficiency

- Separate unit for continuously enterprise surveillance
- Assistants (f ex radiographers) for postprocessing, evt for selected interpretations

Dedicated organisation

- Independent center outside existing hospitals
- Increased focus on decision making and the interpretation and reporting processes.

Ref. org. of day-surgery!

Volume effect

- Example
 - 180 participating radiologists within a 40 km commuting area 2 days pr week (2/5) give 72 working-years
 - Full reserve capacity for interpretation is est. to 150%
 - Each radiologist hence represent the interpretation capacity of 1.2 in-hospital radiologist
 - potential capacity increase 36 working years
 - 108 working years from the 72 invested

Gained value

- Shared between
 - Competence development/specialists training
 - Incentives for participating radiologists
 - Increased interpretation volume capacity for participating hospitals and the region

Re-organising for a system giving multiple winners!

Physical organisation

- Centrally established, outside participating hospitals, with optimal commuting possibilities.
- Fully established
 - ~ 70 PACS work stations
 - well organised IT-service and office
 - teaching facilities
 - "call-center".

Service levels

- ⑩ Level 1: Routine x-ray exams
- ⑩ Level 2: More specialised exams, demand for increased radiologic competence and contact with clinicians
- ⑩ Level 3: On-line remote guidance of advanced exam protocols
 - ⑩ Evt virtual clinical evaluations (e.g. stroke pts, multitrauma)

Radiologic "Command Bridge"



Teleradiology

Pros

- Accessibility/rapid answers
- Night-call duty
- Increased quality/competence
- Second look
- Working from home/flexibility
- Economy

Cons

- Unknown radiologists
- Less clinical communication
- Decreased efficiency (less precise answers)
- Isolated radiologists
- No fluoro/US/intervent.
- Less local expertise
- Economy

Levine et al, Neurology 2007

- *Telemedicine systems are much more about politics than technology: Success requires new organizational and personal relationships that are established and sustained through interactions serving organizational and professional values....*
- *..... Our experience suggests relative importance (politics:technology) is 10:1 or greater.*

Intended advantages, regional remote interpretation center

- Large and robust professional environment
- Easy access to subspecialists, strengthening professional hierarchies
- Teamwork in the interpretation processes
- Better control, more dynamic professional environments
- Short communication lines, less barriers
- Better possibilities to organise teaching and education
- Increased interpretation capacity