Radiomatix

Connecting Radiologists

Improving the quality of healthcare by providing radiology services worldwide.

RADIOMATIX
CONNECTING RADIOLOGISTS

Radiomatix Teleradiology ... a benchmark in quality, security and service

Teleradiology

- Teleradiology is the transmission of radiological patient images, such as x-rays, CTs, and MRIs, from one location to another for the purpose of sharing studies with other radiologists and physicians (http://en.wikipedia.org/wiki/Teleradiology)
- In recent years, teleradiology has rapidly moved from adjunct to essential practice in thousands of radiology departments and centers worldwide

Teleradiology in the context of shortage of radiologists

- In the description below, teleradiology refers to the medical interpretation ("reporting") of imaging studies by radiologists that are not physically present in the hospital or imaging center where the images are acquired
- In hospitals facing a shortage of qualified radiologists, teleradiology may be considered as a potential alternative for hiring an onsite radiologist
- Moreover, because radiology capacity needs tend to fluctuate in time, temporary help may be welcome even in the absence of structural staffing problems
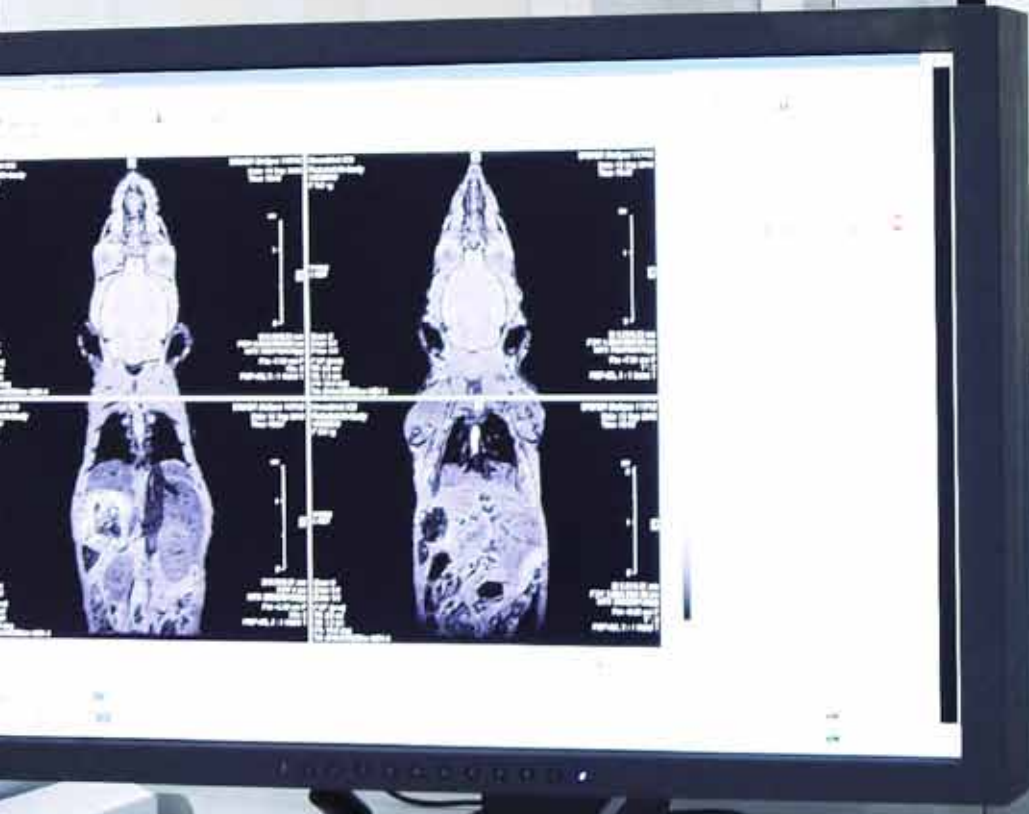
Conventional teleradiology companies

- Conventional teleradiology companies tend to hire tele-radiologists that work in isolation or in small groups. These radiologists are usually connected to the client hospital via a "point to point" connection, but are not connected to a large community of other tele-radiologists.
- This set-up intrinsically has some limitations in terms of quality and type of services that can be provided.

"
*Medical quality
is our first priority*
"

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What differentiates Radiomatix from other providers

- Radiomatix works with a large group of senior Belgian accredited radiologists, whereby each radiologist works as a subspecialty expert in a major – often an academic – hospital, and devotes some of his/her time (on average 20%) to teleradiology
- All Radiomatix radiologists are connected through a cloud-based platform (see below), making them function as a group instead of as a set of individuals (e.g., second or third opinions can be asked easily within the group, irrespective of the physical location of the radiologist)

Radiomatix background

- 250 Belgian radiologists created the "Belgian Radiology Group" (BRG) with the goal to provide teleradiology services through Radiomatix
- Radiomatix has been founded and is co-directed by radiologists

Goals & Mission

- Radiomatix supports radiology departments facing temporary or permanent shortage of radiology staff
- Radiomatix makes teleradiology a valuable alternative for hiring a new consultant radiologist or subspecialist
- Radiomatix makes the teleradiologist an integrated partner of your radiology department

Vision

- Medical quality is our first priority
- Teleradiology should meet both the highest International and local standards

Teleradiology advantages

- The main advantage is flexibility: the client hospital decides on the number and type of patient studies that will be read by the teleradiologist(s), depending on the need of the moment
- Another advantage is the "on-demand" availability of subspecialists and special services (teaching, advanced visualization etc, see below)

Teleradiology challenges

- The physical distance between the reporting radiologist and the requesting physician brings specific challenges such as building trust, providing waterproof security, establishing tools & rules for communication, being able to identify and authenticate the teleradiologist,…
- Coping with these challenges is a top priority for Radiomatix

Radiologists

- Radiomatix radiologists are all subspecialized senior radiologists. They are working as consultant radiologist in major hospitals or academic institutions.
- All radiologists are certified in Belgium and Europe, and CME accredited with a renewal cycle of three years
- Radiomatix radiologists all hold a sufficient liability insurance covering their International operations

Licencing, accreditation, insurance

- A nationwide licence has been obtained in Qatar
- Radiomatix fulfils the criteria of the Saudi Commission for Health Specialities
- Radiomatix takes all necessary steps to meet specific requirements of client hospitals

Network organisation

- One of the requirements for good quality in radiology is easy access to second opinion of qualified colleagues
- In order to make this possible, Radiomatix radiologists are organised in a network; second opinions (simultaneous review of interesting /difficult cases with a colleague) can be requested at any time

Cloud-based Radiomatix teleradiology management system (TMS)

- The technology behind the network is the proprietary cloud-based Radiomatix teleradiology management system (TMS)
- Access to the TMS is highly secured (see "Security & Privacy")
- Advanced features include mammography structured reporting templates and speech recognition integration

Cloud-based PACS and viewer

- A Visage PACS (http://www.visageimaging.com) is used for image viewing, and is integrated in the Radiomatix TMS
- Visage PACS is FDA approved for web-based medical diagnosis
- All images and data are stored in the cloud (Tier 4 hosting according to ANSI/TIA-942 telecommunications infrastructure standard for data centers)
- Web technology enables remote image access from any location (e.g., home, work,..) at any time
- Features include image streaming, embedded 3D visualization and advanced postprocessing
- Rapid image viewing and 3D rendering is possible at any location pending 1.5+ MBsec bandwidth
- Access is highly secured (see "Security & Privacy")

Infrastructure for reading radiologists

- Radiomatix radiologists are required to use high-quality monitors approved for medical diagnosis
- Speech technology is available if requested

Security & Privacy

- Images are sent from the referring hospital to a cloud-based server
  (via SSL or point-to-point VPN)
- Data encryption occurs before images leave the hospital
- On request, all identifying patient information can be removed before images leave the hospital
- Certified radiologists can only gain access to the TMS and image viewer using a patent-pending cloud key
- The cloud key offers the highest grade of security via 3G assisted SSL and random password generation

- Radiomatix complies with all legislation and regulatory issues as stipulated in the Belgian Privacy Commission Guidelines, in accordance with European Guidelines for Patient Privacy

Setting up a connection

- A hospital can be connected remotely
- Before the connection can be made, Radiomatix IT will contact the hospital IT to obtain relevant technical information

RIS integration

- RIS integration via HL7 can be provided as an option

Type of readings

- Standard service is providing primary readings (all subspecialties)
- Other types of readings (secondary, night or weekend) can be provided on demand
- Report turnaround times are adapted to the needs of the client

Communication with referring clinicians

- Name and contact information of reporting radiologists are available for every report, during each stage of the reporting process
- Radiomatix adheres to strict policies for communication of relevant, urgent and/or unexpected findings
- Depending on the context, communication occurs via phone, chat, skype, etc. These functions are embedded in the Radiomatix teleradiology management system, and accessible to referring hospitals/clinicians
- A 24/7 Radiomatix helpdesk is available

Quality control

- Policies for internal and external auditing of report quality are in place (including internal over-reading)
- Active feedback by referring clinicians is solicited and facilitated by modern communication tools integrated in TMS
- Radiomatix radiologists are encouraged to request a second opinion whenever they feel unsure about a diagnosis or finding (see "network organisation")

Teaching programs

- Radiomatix has established partnerships with Universities in Belgium and abroad to provide on-demand teaching programs for radiologists and radiology technicians
- Virtual fellowships consist of a combination of formal teaching with continued learning through overreading of interesting cases by experts (via teleradiology)

Advanced postprocessing & visualization

- Solution for advanced postprocessing and visualization can be provided, including fMRI, DTI, perfusion MRI, MR spectroscopy, and PET/CT integration.

Additional services

- Additional services to radiology departments can be provided on demand
- Examples are remote control of CT radiation dose and technical quality control in mammography

Account manager /responsible radiologist

- A Radiomatix radiologist will be assigned as contact person ("account manager") for every referring hospital
- This radiologist will visit the referring radiology department during at least one week in the first months of collaboration
- The goal is to optimize the understanding of the needs and wishes of the department, and to facilitate the integration of teleradiology services
- Also, specific issues such as imaging protocols can be discussed

Pricing policy

- When compared to "onsite" radiology, teleradiology involves certain extra expenses (related to cloud-based technology, specific data protection and security issues, marketing, travel, communication, etc)
- Radiomatix prices reflect operational costs plus payments to reading radiologists, with minimal or no margin

Free trial

- Before teleradiology can be a successful alternative for an onsite radiologist, a series of requirements has to be fulfilled
- In order to allow hospitals to check whether or not Radiomatix fulfils these criteria, a "low cost, low risk" step-up program including a free trial period has been designed

References

- Available on demand