SPECIAL ARTICLE

OPTIMIZING COMMUNICATION BETWEEN THE RADIOLOGIST AND THE GENERAL PRACTITIONER

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Adequate communication between radiologist and referring general practitioner (GP) is mandatory in a good practice clinical setting. Several hurdles may interfere with good communication. Inappropriate imaging requests or incomplete clinical details conveyed to the radiologist may result in inappropriate imaging and interpretation. GPs may find the radiology report confusing or may feel it takes too much time to receive the reports. Communication issues may dissatisfy GPs and make them look for alternative providers for imaging referrals. In the digital era, electronic radiology request forms, digital access for the GP to radiology images and reports and networks centralizing patient data may all help to improve communication between radiologist and GP. In this paper we outline practical ways of improving this communication.

Key-words: Radiology and radiologists.

The radiology report is the primary tool by which the radiologist communicates his/her findings to the referring physician. The report provides answers to the clinical question, emphasizes the clinical importance of radiological findings and may mention important additional findings beyond the remit of the clinical question. In Belgium, the iconographic documents and the report can reach the GP by several ways. The diminishing number of radiology departments where films are still in use, hand these documents to the patient, together with a printed document containing the report. Departments using PACS generally provide the images and the radiology report as well as a dedicated DICOM reader on a single CD-ROM. In addition to that, a growing number of departments mail the encrypted report to the referring physician by means of a third party server.

The relationship between the radiologist and the general practitioner is clearly different that with hospital-based specialists, and so are their respective means of communication. While hospital-based specialists requiring additional information can visit the radiology department and attend multidisciplinary meetings, clinicians in a primary care setting lack this benefit. GPs rely on e-mail and telephone if they require additional information (1).

Another difference is that GPs rely much more on the radiology report than do specialists (1). They highly value the clinical opinion of the radiologist, and the form and content of the report should be in accordance with their expectations (1-3). Radiologists should therefore dictate imaging studies in time, produce accurate reports with clear conclusions tailored to the GP and his clinical question, apply electronic means of communication if these are available, and establish direct contact with GPs where appropriate, depending upon clinical scenarios (3). Doing so is not only good medical practice, it is also in the interest of the radiologist. GPs dissatisfied with the quality of reports and communication could turn to alternative providers for their imaging referrals (3).

For this purpose, existing systems for information interchange with general practice should be improved and new ways to improve communication explored and implemented. To avoid uncoordinated initiatives and prevent confusion, guidelines for referral and for the electronic communication and information transfer across the GP-radiologist interface should be developed (2).

GP referral to the radiologist

Referral guidelines for GPs

Radiology is expanding rapidly. Imaging techniques that once were state-of-the-art have become obsolete, while the introduction of new techniques (e.g. multislice CT, dual energy CT, perfusion CT and MR) has made it more difficult for the GP to request the optimal imaging study to answer a particular clinical question. Reducing radiation exposure by preventing inappropriate imaging studies should be a concern for both radiologists and referring clinicians. In the conclusion of a report, radiologists can give limited advice concerning the best technique to investigate similar cases in the future. However, the radiology report is there to provide adequate diagnostic information, not to replace a refreshers course for GP’s (2). Moreover, offering unsolicited advice may be considered offensive. Guidelines that lead GPs to requesting the proper imaging study can help to reduce radiation risks, prevent repeat studies, boost the accuracy of the imaging process, and eventually contribute to installing the right treatment.

Guidelines describe quality problems at the GP-radiologist interface and seek solutions to such problems. Professional leaders facilitate the GP-radiologist interface by means of consensus discussions and support the use of these guidelines to improve cooperation (4). In Belgium, radiology referral guidelines are available for GPs, but they are not compulsory (5).

Paper vs electronic request form

Sending imaging requests electronically from the GP’s office to the radiology department well before the appointment can prevent the
loss of request forms and help the radiologist to anticipate the re-
quested study. This in turn may lead to contacting the referring GP for
additional information where neces-
sary and in some cases even to
suggesting a more appropriate study.

Patient-centered approach

As patients (in Belgium) time and
again are free to visit any physician,
the radiologist may be unfamiliar
with the patient presenting at his de-
partment, despite his/her long medi-
cal history. Conversely, the patient is
free to present the results of the study to a GP or even a specialist
other than the one who requested it.
In such a system, access to a (nation-
wide) electronic patient record system
can be considered a necessity
in the interest of optimal diagnosis
and treatment. Information systems
would be able to track the imaging
studies a patient has already under-
gone and suggest, guide or discour-
age additional studies (4).

Radiologist communication to GP

The radiology report

It is important that radiologists try
to imagine what the clinician will
 deduce from a report. Errorneous in-
terpretation by the referring clinician
can have important consequences in
malpractice cases. Poor communica-
tion is a causative factor in up to 80%
of malpractice lawsuits involving
radiologists. In most cases, the refer-
ing clinician did not react adequate-
lly to the message in the report, as a
consequence of which prompt diag-
nosis or therapy were postponed. If
the radiologist expresses himself
more strongly in the reports, GPs
will act much sooner (3).

With continued progress in radio-
logical information systems, radiolo-
gists can produce standardized
tabluted reports more easily. In
structured reporting (SR) systems,
the radiologist completes a set of
data fields in a preformatted tem-
plate. The result is a consistently
structured report that is easy to read
and to compare with earlier reports.
These structured reports have been
shown to be favoured over prose re-
ports by GPs (1, 3, 8).

The radiology report is a method
of communicating the expertise and
clinical judgement of the radiologist
to the GP. Specific guidelines for re-
porting to GPs include the following advices (3, 4, 6, 7):

Examination:

GPs are not particularly interested
in the technical details of the exami-
nation, but think that sub-
optimal technical quality should be
mentioned. The date and type of
comparative studies should also be
stated.

History:

- Including the clinical question into
  the report will inspire the GP more
  confidence, since it shows that the
  radiologist has read and understood
  the question. The clinical history
  may be added automatically to com-
  puter-generated reports.

Findings:

- Reports should be in the present
tense and findings organized in a
  logical manner, the most impor-
tant first.
- The findings should be reported in
clear, exclusively descriptive
terms. Interpretations should be
restricted to the conclusion of the
report.
- Only relevant negative or inciden-
tal findings should be mentioned.
GPs do not appreciate measure-
ment of normal structures. If the
report contains results of mea-
urements, their meaning should
be stated.
- Unfamiliar abbreviations are to be
avoided.

Conclusion:

In a 1988 survey in Arizona, only
38% of the referring clinicians (hos-
pital specialists and GPs combined)
read the entire report and 18% read it
only if the conclusion was unclear;
43% read only the conclusion if the
report was longer than one page (8).
In contrast, in a large-scale survey in
the Netherlands and Flanders
(Belgium) in 2008-2009, two thirds of
the referring specialists and GPs de-

died only reading the conclusion and
more than eight out of ten agreed
the descriptive part should also be
read (1). Whatever the truth is, the
conclusion is an essential part of the
report and is considered mandatory
in longer reports in all guidelines.

When dictating the conclusion, the
radiologist should observe the fol-
lowing guidelines:
- Answer the clinical question. In
case of equivocation, try using the
first person to add a personal
touch.
- Give a diagnostic opinion and
avoid the hedge. Provide a clear
list of differential diagnoses: a
rambling list gives the impression
of diagnostic uncertainty.
- What is clear to a specialist may
need to be highlighted to a non-
specialist. GPs appreciate detailed
advice on further non-radiological
(97%) and radiological (96%) in-
vestigation in the conclusion.
- The radiologist should proofread
the report before verifying it, mini-
mizing clinical risk from error ( eg.
“asymmetric” can easily be mis-
typed as “symmetric”).

If findings are conveyed to the re-

curring clinicians the time and means
of communication should be record-
ed (3, 6).

Preliminary vs final report

In an emergency situation or other
cases in which immediate action is
required, the results of an examina-
tion are to be communicated to the
referring clinician verbally. If such
preliminary findings have been
conveyed to the GP, it is generally
advocated that the information con-
veyed has to be repeated in the final
report. If a preliminary report under-
goes substantive change before
finalization, this should also be clear-
ly communicated to the referring clinician (3).

Communication of final report

Developing systems for appropi-
ate information exchange between
the radiology department and pri-
mary care providers is an absolute
necessity. Guidelines and recom-
endations for electronic communi-
cation and information transfer for
GPs and access to electronic patient
records across the GP-radiologist in-
erface is essential (4).

The final report and images may
reach the referring GP in several
ways:

1. In an urgent situation, prelimi-
nary findings can be conveyed to
the GP by telephone.
2. Data carriers (paper or CD) with
radiology report and images may
be handed to the patient or can
be posted to the referring GP’s of-
fice.
3. Radiology departments may mail
the encrypted report to the refer-
ring physician by means of a
third-party server.
4. GPs may log in to a local network,
allowing them access to the hos-
pital/ radiology practice server.
and obtain restricted information from their patients. Secure, fast and retrievable accessing may be provided by a virtual particular network (VPN).

5. Nationwide electronic patient file databases may contain all medical reports available for a patient. Access for GPs to these electronic patient records, including radiology reports and images, requires sophisticated security systems, such as electronic passport identification systems (e.g. eID-viewer).

‘E-health platforms and radiology: a Belgian perspective’

In the last decade, several large Belgian hospitals implemented their own electronic platform (MediBridge®), allowing referring GPs to access radiology reports and images. These local networks created a strong connection between referring physician and radiologist. However, the functionality, authentication and authorisation between hospitals differed and the impossibility of data sharing between hospitals hindered efficient communication.

Consecutively 5 regional ‘e-health hubs’ were created in Belgium linking hospitals. Imaging data remained stored locally in the participating hospitals, but GPs could retrieve data of their patients from allied regional hospitals. These regional hubs represented an opportunity for radiology to share infrastructure and services between hospitals thus optimizing return on investment.

Subsequently Belgian governance obliged all hospital to join a hub and facilitated interconnection of the 5 regional hubs in 2012, thus creating a ‘metahub’ (9). The metahub represents a collaborative e-health platform for all actors in healthcare: not only for professionals (doctor-hospital-caretaker), but also for patients, pharmacy, governance and research.

Storage of data remains decentralized, in the hospital were examinations are obtained. The uniform functionality of the e-health platform facilitates access to all actors in healthcare. The patient authorises access to data by informed consent (opt-in system, e.g. the patient chooses if the GP has unlimited access to his/her file or may only view results of examinations he has requested). Healthcare actors will only be granted access to (specific) patient data if a therapeutic relation is affirmed. Authentication for login to the platform will be by means of encrypted e-ID-viewer technology.

It is clear that e-health platforms will have a great impact not only on GP-radiologist communication, but will also daily radiology practice in the near future.

Conclusion

Good communication between GPs and radiologists implies three basic requirements: facilitation of the GP-radiologist interaction through guidelines and the use of electronic radiology reports tailored to the GPs needs, with prompt validation of final reports, and organization of local or nationwide electronic healthcare platforms allowing optimal data exchange between GP and radiologists.

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