Our Contribution to the EuroSafe Imaging Call of Action
German Radiological Society

The German teleradiology concept - a measure of radiation protection
(The EU-sponsored POMERANIA project)

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Purpose
Teleradiology is defined by the EU as a telemedicine service, which involves the electronic transmission of radiographic images from one geographical location to another for the purposes of interpretation and consultation (1). Legal analysis and reflection on its international applicability is performed on a regional teleradiology network based at the Greifswald radiology department, representing a model case of providing teleradiology services to five hospitals at night, weekends and holidays only (2).

Materials and methods
The national POMERANIA teleradiology service is reviewed in compliance with the German ionising radiation regulation, as specified for x-ray use (RöV) (3) and EU legal requirements. For data analysis, medical and legal databases (medline, eur-lex, juris, beck-online), as well as recent statistic reports on the regional development of population, economy and healthcare supply (4), were searched.

Results
Teleradiology in Germany is subclassified into teleconsultation (second opinion) and teleradiology according to RöV (justifying indication and original reporting on an examination utilising ionising radiation) (5). The latter is a medical measure representing bodily harm to the individual being examined. The remote medical act is performed under the supervision of a teleradiologist, who is not on-site. Teleradiological examinations according to RöV are only permitted at night, weekends and holidays and require official approval, limited to three years, as an addition to on-site radiology (3). It may be permitted as a 24/7 service in exceptional cases if an urgent geographical need and holidays and require official approval, limited to three years, as an addition to on-site radiology (3). It may be permitted as a 24/7 service in exceptional cases if an urgent geographical need and holidays and require official approval, limited to three years, as an addition to on-site radiology (3). It may be permitted as a 24/7 service in exceptional cases if an urgent geographical need and holidays and require official approval, limited to three years, as an addition to on-site radiology (3). It may be permitted as a 24/7 service in exceptional cases if an urgent geographical need and holidays and require official approval, limited to three years, as an addition to on-site radiology (3). It may be permitted as a 24/7 service in exceptional cases if an urgent geographical need and holidays and require official approval, limited to three years, as an addition to on-site radiology (3). It may be permitted as a 24/7 service in exceptional cases if an urgent geographical need and holidays and require official approval, limited to three years, as an addition to on-site radiology (3).

All radiation-based medical imaging has to be justified by a legitimate indication (3,5), which is deemed as weighing the radiation risk against the medical advantages of examining an individual patient and is a major criterion for protecting the patient from excessive radiation risk (3,6,7).

The teleradiologist is responsible for justifying the exam, after having collected relevant written and oral information in cooperation with the technician and on-site physician (5,3).

Proximity of services
Teleradiology services can only be provided to hospitals, which the teleradiologist can reach in a time that would allow him/her to react to emergencies in a reasonable amount of time (< 45 min.). The principle of proximity (3,5) guarantees adherence to the principle of personal service (2).

Conclusion
In Germany teleradiology is a radiological-medical measure performed on the patient. As the patient’s radiation protection is an exceptionally important issue, medical imaging in this context is highly regulated (3). Medical-technical and personnel requirements, as well as radiation protection aspects, must comply with high standards of patient safety and patient care derived from on-site radiology. When it comes to performing cross-border teleradiology, individual patient rights and the protection of physical integrity must not be discriminated as compared with performing national teleradiology (8, 9). An evolving and growing European cross-border healthcare market implies harmonised rules and guidelines (9). The implementation of internationally accepted radiation protection standards is essential and urgently needed. Those derived from the German criteria for radiation protection primary teleradiology services are suitable for regions close to the border only. By preserving high standards in patient safety and patient care, cross-border teleradiology may be beneficial to connecting and developing remote areas at both sides of a border – better yet could complement existing structures of regional healthcare.

References
1. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee on the Regions on telemedicine for the benefit of patients, healthcare systems and society, in Commission of the European Communities, Brussels: COM (2008) 689 final

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