

**INTERNATIONAL  
DAY OF RADIOLOGY**

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**International Day of Radiology 2017  
Interview on Emergency Radiology  
Germany/Dr. Rainer Braunschweig**

**Dr. Rainer Braunschweig from Hamburg highlights the role of radiologists as pacesetters in conceptual management of emergency units**

***European Society of Radiology:** Could you please describe the role of the radiologist in a typical emergency department in your country?*

**Rainer Braunschweig:** Radiologists became pacesetters in conceptual management of the well-equipped, state-of-the-art (e.g. the Multislice-CT-First concept) emergency unit; and in becoming co-leaders with surgeons and intensive-care physicians during primary examinations; and in working in physical locations next to the emergency rooms.

There is more to emergency radiology than making images: radiologists must choose the appropriate CT protocols (e.g. time- or dose-related); they must choose which additional examinations are required (e.g. MRI, x-ray, digital subtraction angiography [DSA] or interventional); they must report, with high accuracy, from more than 2,000 scans per case; they must present images for case discussions with all participants; and they must support effective management of the emergency room (e.g. 'time is brain').

***ESR:** What does a typical day in the emergency department look like for a radiologist?*

**RB:** The first step for the on-call traumatologist is to organise the imaging department and the entire staff for treating the patient as effectively as possible. Also, gathering information about details of the emergency case is important and helpful.

Second, emergency cases must be included in the emergency department's normal routine. From a management perspective, it is of paramount importance to schedule outpatient and elective examinations from the hospital in half-hour increments, which leaves time to take emergency cases in between.

Third, emergency staff members have to be informed and prepared for all types of emergency (e.g. trauma, stroke and cardiac), and they should have training on a monthly basis.

At my institution, we have a whole suite of intensive-care equipment available, CT and MRI units, to offer patients the most appropriate, required procedures (e.g. spinal cord injuries and neurological and body traumas).

***ESR:** Teamwork is crucial in an emergency department. How is this accomplished in your department and who is involved?*

**RB:** There are defined guidelines in our hospital, based on national (e.g. Association of the Scientific Medical Societies of Germany [AWMF] guidelines on polytrauma), and other international standards and guidelines are available for all clinical partners (including the laboratory) involved in diagnosing and treating emergencies.

Caregivers, as well as physicians, are well trained in these procedures, especially in unique, digital communications (e.g. digital, housewide simultaneous distribution systems) and case discussion to make effective treatment decisions based on scientific guidelines.

***ESR:** How satisfied are you with the workflow and your role in your department? How do you think it could be improved?*

**RB:** To be part of the organisation and planning of the clinical concept we have is both challenge and honour.

Teamwork for emergencies has to be one of the effective clinical engagements ever. Using the Multislice-CT-First concept for more than 10 years is our special offer to all the clinical partners as the most effective one we have. As radiologists we should do our part to make improvements in the technical and clinical environment to improve accuracy and integration in emergency departments.

***ESR:** Which modalities are used for different emergencies? Could you please give an overview sorted by modalities?*

**RB:** Normally, we have two mandatory modalities: First, CT is the method of choice for any trauma case. Normally we do the CT for stroke, as well. Second, MR is the best technique in trauma cases involving soft tissue injuries (e.g. spinal cord) or treatment-associated questions, for example in stroke cases. After that, x-ray, particularly DSA, is very important for interventions (e.g. bleeding). Ultrasound might be used in addition to CT or as a first overview or later for a running investigation.

***ESR:** Is teleradiology an issue in emergency radiology? If yes, how so, and how often is it used?*

**RB:** Normally, emergency cases should come into certificate hospitals with imaging centres around the clock. Particularly in Germany, we have many rules and guidelines to ensure patients are brought where they need to be. In most of the cases, high-end, specialised teleradiology for emergency room departments is not necessary.

However, if there are any detailed questions involved in some cases, special expertise can be helpful using teleradiology for consultation. From a legal perspective, teleradiology in such emergency cases is an easy and effective tool for the patients and doctors.

***ESR:** Are emergency radiologists active anywhere other than emergency departments? Do they have other non-emergency roles, or other emergency roles in other departments?*

**RB:** The current situation in Germany is completely the reverse.

Technical equipment in most of the hospitals for normal, elective routines is going well. From a commercial and management standpoint, some hospitals are not able to have staff available around the clock. That means we should install a system to certificate hospitals so their clinical and personal management becomes part of the whole rescue-system in Germany.

To standardise and to assure clinical and management quality, these systems are very important. Nevertheless, managing emergency cases is the most important challenge to deal with from clinical and financial perspectives. This is especially true from an economic perspective to protect the survival and well-being of patients.

The political decision-makers have an important accountability and ethical responsibility in the emergency care debate, as well.

***ESR:** Do you have direct contact with patients and if yes, what does it entail?*

**RB:** Of course direct contact with the patient is part of caring for patients as clinicians and assuring that imaging procedures are sound as part of the rescue team.

For example, in the past, imaging departments have been in basements or in the background. For emergency purposes, it is very common today to install imaging centres on the ground floor next to, or better yet, within the emergency unit. Today, wherever you go, imaging centres are installed as part of the overall rescue concept in emergency departments.

***ESR:** How are radiologists in your country trained in emergency radiology? Is emergency radiology a recognised specialty in your country?*

**RB:** At the moment we are instituting improvements to emergency radiology training on various levels.

First, there is some emergency training in the specialist training curriculum for all fellows. Additionally, the Association for Imaging Techniques (Arbeitsgemeinschaft für Bildgebende Verfahren) of the German Society of Radiology offers lots of special courses and training

facilities for emergency radiology, all of which are available on their website. On one hand, this is a quality solution for clinical and management education.

On the other hand, it makes no sense to create a stand-alone specialty for emergency radiology because of the important, global expertise all radiologists need to have for all modalities, and the various specialised findings, organ systems and clinical approaches we strive for.

**ESR:** *Please feel free to add any information and thoughts on this topic you would like to share.*

**RB:** To summarise, managing emergency cases is the most critical challenge for a hospital. This also is true for all clinicians. The solution is education at its best and management as interdisciplinary teamwork. In addition, there is, of course, a huge need for state-of-the-art-equipment.

**Dr. Rainer Braunschweig** is a radiologist from Hamburg, Germany, and former head of the clinic of imaging diagnostics and interventional radiology at Bergmannstrost-Hospital in Halle/S., an international traumatology centre.

He is a nationally and internationally renowned expert in musculoskeletal radiology, with special interest in trauma- and occupation-related cases. His main scientific work relates to digital radiology, IT-based management-solutions as far as HIS/RIS and PACS are concerned, and especially creating and developing the 'Multislice-CT-First concept' for trauma.

He has authored or co-authored more than 60 peer-reviewed papers and books, and he has given numerous invited lectures, scientific presentations and courses on topics such as osteomyelitis, trauma and joint diseases. Currently he is a board member for the working group on imaging methods of the musculoskeletal system (AG Bildgebende Verfahren des Bewegungsapparates) of the German Society of Radiology.

