Five-year experience with setup and implementation of an integrated database system for clinical documentation and research.

Abstract:
In radiation oncology, where treatment concepts are elaborated in interdisciplinary collaborations, handling distributed, large heterogeneous amounts of data efficiently is very important, yet challenging, for an optimal treatment of the patient as well as for research itself. This becomes a strong focus, as we step into the era of modern personalized medicine, relying on various quantitative data information, thus involving the active contribution of multiple medical specialties. Hence, combining patient data from all involved information systems is inevitable for analyses. Therefore, we introduced a documentation and data management system integrated in the clinical environment for electronic data capture. We discuss our concept and five-year experience of a precise electronic documentation system, with special focus on the challenges we encountered. We specify how such a system can be designed and implemented to plan, tailor and conduct (multicenter) clinical trials, ultimately reaching the best clinical performance, and enhancing interdisciplinary and clinical research.