



## #RSNA14: Room for Improvement in Radiology Reports



Use colour, avoid all capital letters and be informative, was the message from radiation oncologist Lawrence B. Marks to his diagnostic radiology colleagues. The Annual Oration in Radiation Oncology at the Radiological Society of North America (RSNA) annual meeting, delivered by Marks, Dr. Sidney K. Simon Distinguished Professor of Oncology Research in the Department of Radiation Oncology at the University of North Carolina at Chapel Hill School of Medicine, included pertinent advice on how to make radiology reports better.

He commended the book by Colin Wheildon on type and layout, the result of randomised studies testing reading comprehension according to layout, font, colour and capitalisation. Wheildon's research found that sans serif fonts tend to reduce comprehension. Anything other than black text on white background leads to poorer comprehension, and white on black is bad, with other colour combinations being hard to read. Marks illustrated his point with a report he received, all in capital letters. Due to it being all in capital letters, he did not notice there was a full stop or period, and read it as a comma, giving an entirely different meaning. Both punctuation and numbers are obscured if reports are written all in capital letters. The all important number stands out if you do not put them in a sea of capital letters, he observed. And yet not only reports, but software still use all capital letters. While travel websites are beautifully laid out, they certainly know what they are doing when they publish terms and conditions for refunds - all in capitals! Using all capital letters degrades comprehension of the report.

Radiation oncologists rely on diagnostic radiology reports, but it's a two-way street. Compare the radiation oncology request for a brain MRI "Define tumour extent" to "adenoid cystic tumour of parotid, assess spread along nerves to base of skull". Similarly, compare the report on a chest CT, "multiple med nodes" to "enlarged nodes at levels 4R, 2R." "Your notes are read," said Marks, "so it's your responsibility to make notes as readable as possible." He would find it helpful if BIRADS concepts were applied to all reports, making it easier to know what needs to be done clinically. The electronic health record (EHR) gives the opportunity to include supplemental narrative as well as images. Why not use colour in reports, he suggested, for example green for benign findings or red for suspicious findings. These could be used for requests too, but there would need to be checklists.

Patients are included, said Marks, noting the recent New York Times article, "[Radiologists are reducing the pain of uncertainty.](#)"

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