Digital Radiography Reject Analysis in Dutch Hospitals

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**Purpose**

In the era of conventional radiology films that were rejected for various reasons, were collected and later analyzed for educational purposes. Rejections should be avoided to save time, money, but also to minimize patient exposure to radiation. Nowadays, in digital radiological imaging rejected images can be deleted easily or they can be stored and used for analyses with sophisticated software. It is unclear which approach is currently prevailing in Dutch clinical practise. We have therefore investigated the current state of reject analyses in digital imaging.

**Methods**

A literature study was conducted as input for a questionnaire. Questions included the frequency of reject analyses, the procedures and the software tools used, the amount of rejected images and the registration of these. The questionnaire was used for guidance during interviews with quality managers at radiology departments in 13 Dutch hospitals. Taken together these 13 interviews constitute a significant sample from the approximately 80 hospital conglomerates in the country.

**Results**

Participating hospitals report that on average 0.7 % of all images is rejected. In most cases this concerns bucky imaging for which poor positioning is often the reason for rejection. In 70% of the hospitals the rejected images are not stored. In 85% of the hospitals a sample of the rejected images is analyzed, but only four hospitals (30%) perform an analysis of all rejected images. Most hospitals (77%) are aware of sophisticated software for reject analysis, but for financial reasons only 8% use it.

**Conclusions**

The rejection rate for radiological imaging is low in the Netherlands, but nevertheless in most hospitals rejected images are not stored. This precludes a full reject analysis of all rejected images. A large majority of the hospitals do perform some form of reject analysis on a sample of rejected images, but usually without available (but costly) software tools. From a quality assurance perspective it is recommended to enlarge this sample to include all rejected images, and pay special attention to modalities that incur high patient radiation exposures.

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