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Audit of monitors used to view digital radiographs in the Paediatric Dental Department at Kings College Hospital

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Background: Radiographs are essential for correct diagnosis and treatment planning in dentistry. Since the introduction of digital radiography at KCH, essential computer monitors are of adequate quality to correctly identify radiographic features. A previous audit was undertaken in the Paediatric Department and it was found that 21% of computer monitors were inadequate for radiographic diagnostic purposes.

Aim: The aim of the present study is to assess all computer monitors to ensure that they are diagnostically acceptable; identification of computer montitors that require adjustment and to undertake necessary adaptations; and 100% of computer monitors should be diagnostically acceptable.

Method: Each computer monitor was identified using a serial number at the back of each monitor. Romexis was accessed on each computer screen and from there a SMPTE pattern was uploaded onto the screen and maximized. The author ensured that the computer monitors were observed at the same time of the day to minimise any bias.

Results: Of the 32 computer monitors observed: 26 monitors were found to be diagnostically acceptable, six screens were found to be non-diagnostically acceptable. Of the non diagnostically acceptable: 4/6 of the screens were unclean and had either dust or fingerprints. The monitor brightness varied from 34%-100%. The monitor contrast varied from 50%-100%. All monitors that were not diagnostically acceptable had issues distinguishing the 0-5% and 95-100% squares. Locations: 1/6 monitors were in the day surgery theatres. 2/6 were in the paediatric offices in the extension. 3/6 were in the paediatric department itself, two in the student wing and one in the staff wing.

Discussion: All monitors that were not diagnostically acceptable had issues distinguishing the 0-5% and 95-100% squares. This would signify that the issue would be with the contrast and brightness settings on the monitors. The 4/6 screens that were unclean can be easily changed by ensuring damp and dry cloths are available near each computer screen.

Conclusion: Make adjustments to the non-diagnostically acceptable screens and re-audit. Particularly ensure adjustments are made to the contrast and brightness and cleanliness of the screens. During the re-audit process, we tried to include the three screens which the author was not able to access. After the re-audit process, if the quality of the monitors have still not improved those screens need to be identified and should not be used for looking at digital radiographs. Routine checks need to be made on monitors to ensure they are of diagnostic yield. Ensure all members of the department are aware of the ideal settings on computer monitors for radiographic diagnosis.