

Chest X-Ray Interpretation: Agreement Between Consultant Radiologists And A Reporting Radiographer In Clinical Practice In The United Kingdom

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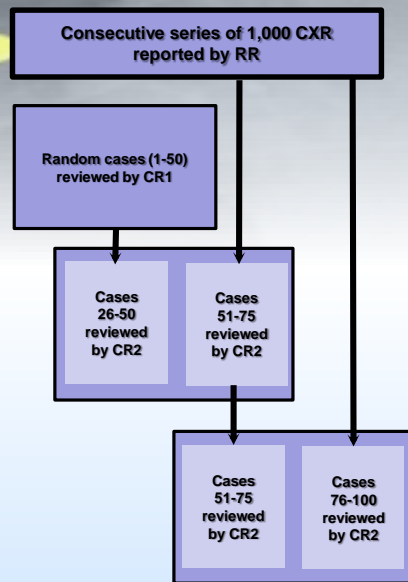
Introduction

- Trained radiographers now undertake image interpretation in the United Kingdom¹.
- Image interpretation is a subjective task².
- Significant variation in x-ray interpretation between radiologists is reported in the literature^{3,4}.
- There is little work examining the agreement between consultant radiologists (CRs) and reporting radiographers (RRs) in clinical practice.

Methods

- CRs performed their evaluation independently, blinded to the proportion of cases receiving multiple radiologist opinions.
- Inter-observer agreement analysis using the Kappa statistic was performed to determine consistency among observers.

Methods

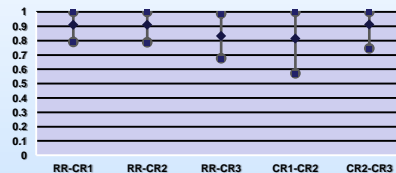


Results

- Eight cases in which the reviewing radiologist not in agreement with the RR.
- Of the discordant cases there were three instances in which one of the reviewing CRs was in agreement with the RR report.

Observer	CR1		CR2		CR3		
	N	A	N	A	N	A	
RR	N	32	1	31	2	28	1
	A	1	16	0	16	3	18
CR1	N		16	1			
	A		1	7			
CR2	N				14	1	
	A				0	9	

Agreement (Kappa)



Results

- Only one major discrepancy was identified.
- This case was deemed normal by CR3, in agreement with the RR report.
- Subsequent CT confirmed small volume mediastinal lymphadenopathy and tuberculosis was diagnosed.

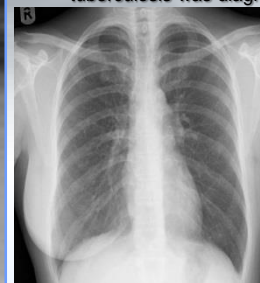


Figure 1. Chest x-ray



Figure 2. Post contrast CT scan (Axial)



Figure 3. Post contrast CT scan (Coronal)

Conclusion

- Level of inter-observer agreement between radiographer and radiologist reports demonstrate no apparent difference when compared to inter-radiologist variation.

References

- 1 - Paterson A, Price RC, Thomas A, et al. Reporting by radiographers: a policy and practice guide. *Radiography* 2004;10(3):205-12
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- 3 - Potchen EJ, Cooper TG, Sierra AE, et al. Measuring performance in chest radiography. *Radiology* 2000;217(2):456-9.
- 4 - Robinson P, Wilson D, Coral A, et al. Variation between experienced observers in the interpretation of accident and emergency radiographs. *BJR* 1999;72:323-30