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ASSESSMENT OF A METHOD TO GRADE RADIOLOGIST

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ABSTRACT

In an era of rapid advance in Imaging field it is humanely impossible to master whole of the Radiology subject, considering various new modalities coming up. Hence we see a need to find Radiologist who is better in a particular modality reporting. We here would like to access a system of grading of radiologist thus helping to achieve aim of giving best reports to the patients and increasing the efficiency and standard of the department.

KEYWORDS: Seniority level, Error level, Severity score, Grade.

INTRODUCTION

In the era of advanced technology radiologists play an important role in diagnosis of the disease and also stating the severity of the disease. This significantly influences the treatment plan by the clinician. With advance in technology the field of radiology is increasing multi fold each day. Hence it is important that radiologists do their job precisely each time. It is difficult for a human to be perfect in each of the imaging technology developed in this era. There is no way to find such a perfect radiologist from the vast pool available in the country.

Thus there is a need to find a way to know which radiologist is better in reading a particular modality or a system. This will help in increasing the specificity of a diagnosis and also help that particular radiologist to know in which modality he needs further training to attend a specific appreciable level.

We thought that grading of radiologist is the only way to achieve this goal. The grading system needs to be very sensitive and specific. It will not only help the department to increase the standard of its reports but will also help to pin point radiologist who needs more training or those which need to be promoted or given bonus as appreciation for their good work. The grading may also help to find the radiologist who is of no use to department and this can be proved on paper.

MATERIALS AND METHODS

We gave 20 studies with relevant history to different radiologists in the department and asked them to make a report. The studies consisted of most of the modalities – radiograph, ultrasound, color Doppler, computed tomography and MRI. No time restriction was kept so that time factor was ruled out from the result. All the studies were reviewed by three senior radiologists and a final report for each study was made which acted as a reference report for the candidates taking part in the study. The candidates were not asked to disclose their names but only their seniority level was mentioned on the prepared reports.

RESULTS AND DISCUSSION

We devised two levels which were considered to get a final Grade of the Radiologist.

The first one was ‘S’ level or Seniority level. It was divided into 7 sublevels. ‘S0’ meant the layman or a MBBS graduate who is not exposed to radiology work in department. The highest ‘S6’ level meant post graduate Radiologist with more than 2 years of experience after obtaining his degree.

The other level was ‘E’ level or Error level. It had 5 sublevels. ‘E1’ meant typographic or grammatical error in the report while ‘E5’ meant finding missed which could be life threatening. The ‘E’ level carried particular score depending on the error committed by a particular senior doctor. The average score was calculated for each radiologist and grade was sanctioned. Lesser the score indicated better the radiologist and hence higher his grade.

If a junior Radiologist {consider S2 level} commits a mistake of E2 degree than he is given the score of 10 while if the same mistake is committed by an experienced Radiologist {say S6 level} than he is given the score of 20 {See table}. This inferences that as a radiologist gets more senior he is supposed to commit

less mistakes and if he commits any than his grade gets reduced.

In our study we included cases varying from all the modalities available in our hospital viz. Plain radiograph, ultrasound, CT scan and MRI. We analyzed that MBBS pass students {who had just joined the department} missed many obvious findings on the cases provided whereas senior students easily picked up many of those. Few obvious findings on MRI like supraspinatus tendon retraction or Achilles tendon tear were missed by the seniors too. Few of them however diagnosed them but were not able to grade them appropriately. From the short study we conducted we could easily pick up Radiologists who were good in one modality while those who needed more training in a modality. The advantage of this study we proved were –

To exactly point out a Radiologist who is good in a particular modality reading. This helped the department to sanction him more work of that particular modality so that he can further enhance his skills and better his standards.

We knew which radiologist needs more training and in what modality. This helped us to know the particular field where extra nurturing is needed.

We saved precious man hours by knowing the particular persons grade and the field in which he is better in reporting.

We improved the quality of reports in the department as a particular radiologist reported only the work in which he is better at.

The radiologist came to know his field of liking and also where he needs to get improved.

The one of the disadvantage of the system is that it may create enmity between the peers. This system needs months to come at a conclusion and grade radiologist as atleast few hundred reads need to be evaluated. This will help to average out and avoid false grading. Thus a major disadvantage of this system is one cannot grade a radiologist in short span of time.

TABLES AND FIGURES

'S' level: Error which would have been easily picked up at this seniority level.

S0 – Layman/
S1 – First year resident
S2 – JR2
S3– JR3
S4 – less than one year experience after passing
S5 – 1 to 2 year experience
S6 – More than 2 years experience

'E' level: Type of error

E1- Typographic error
E2 – Minor miss {non significant clinically}
E 3 – Clinically significant miss {non acute}
E 4 - Clinically significant miss {acute}
E 5 - Clinically significant miss {life threatening}

Scoring system

	E1	E 2	E 3	E 4	E 5
S6	10	20	40	60	100
S5	9	18	36	54	90
S4	7	14	28	42	70
S3	6	12	24	36	60
S2	5	10	20	30	50
S1	4	8	16	24	40
S0	3	6	12	18	30

Grading

Grade I – less than 10 average score
Grade II – average score – 10 to 20
Grade III – average score – 20 to 25
Grade IV – average score more than 25

CONCLUSION

We have tried to asses a system to grade radiologist by taking into consideration his seniority and mistakes he does. This helps not only the radiologist in knowing his strong as well as weak areas but also a large hospital or a medical college where this can be used as a data to improve the quality of reports/ give incentives to better radiologists/ provide training to them and saving turnaround time for reading a case.

This system can be used in other fields of medicine as well with minor changes depending on the particular field.

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REFERENCES

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