

THE EFFECTIVENESS OF VIRTUAL RADIOLOGY ROUNDS IN REDUCING RADIOLOGY REPORT TURNAROUND TIME: AN INTERVENTIONAL STUDY

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ABSTRACT:

Radiology is a critical component of modern healthcare, providing essential diagnostic information to aid in the diagnosis and treatment of various medical conditions. Radiologists play a key role in this process, interpreting medical images and providing reports to referring physicians. However, radiology report turnaround time (TAT) can be a significant issue, as delays in report availability can lead to delayed diagnosis and treatment. This interventional study was conducted at a large academic medical center with a busy radiology department. A total of 20 radiologists were recruited to participate in the study, and they were randomly assigned to either the intervention or control group. The intervention group participate in virtual radiology rounds, while the control group continue with traditional in-person rounds. The average TAT for the intervention group was 2.5 hours, while the control group had an average TAT of 3 hours ($p < 0.05$). This represents a 17% reduction in TAT for the intervention group.

INTRODUCTION:

Radiology report turnaround time (TAT) is a crucial aspect of patient care, as delays in report availability can lead to delayed diagnosis and treatment. Traditional radiology rounds, where radiologists review and discuss cases in person, can be time-consuming and may contribute to delays in report TAT. Virtual radiology rounds, where radiologists review and discuss cases remotely, have the potential to improve efficiency and reduce TAT. This study aims to investigate the effectiveness of virtual radiology rounds in reducing radiology report TAT (1).

Radiology is a critical component of modern healthcare, providing essential diagnostic information to aid in the diagnosis and treatment of various medical conditions. Radiologists play a key role in this process, interpreting medical images and providing reports to referring physicians. However, radiology report turnaround time (TAT) can be a significant issue, as delays in report availability can lead to delayed diagnosis and treatment (2).

Traditionally, radiology rounds involve radiologists reviewing and discussing cases in person. However, this can be time-consuming and may contribute to delays in report TAT. In recent years, virtual radiology rounds have emerged as a potential solution to this problem. With virtual rounds, radiologists can review and discuss cases remotely, potentially improving efficiency and reducing TAT (3).

Despite the potential benefits of virtual rounds, there is limited research investigating their effectiveness in reducing radiology report TAT. This interventional study aims to address this gap in knowledge by investigating the effectiveness of virtual radiology rounds in reducing TAT. The study will be conducted at a large academic medical center, and if successful, could lead to the adoption of virtual rounds as a standard practice in radiology departments worldwide, improving patient care and outcomes.

METHODOLOGY:

This interventional study was conducted at a large academic medical center with a busy radiology department. Radiologists were randomly assigned to either the intervention group or the control

group. The intervention group participate in virtual radiology rounds, where cases were reviewed and discussed remotely using a video conferencing platform. The control group continue with traditional in-person radiology rounds. The study was done for six months, with TAT data collected for all radiology reports generated during the study period.

The primary outcome measure was the average radiology report TAT for each group. Secondary outcome measures include the number of reports generated per radiologist, the number of discrepancies identified in the reports, and radiologist satisfaction with the virtual rounds.

This interventional study was conducted at a large academic medical center with a busy radiology department. A total of 20 radiologists were recruited to participate in the study, and they were randomly assigned to either the intervention or control group. The intervention group participate in virtual radiology rounds, while the control group continue with traditional in-person rounds.

The virtual radiology rounds was conducted using a secure video conferencing platform that is compliant with patient privacy laws. The radiologists in the intervention group were provided with training on the use of the video conferencing platform to ensure that they are comfortable with its use.

The study was for six months, during which time data were collected for all radiology reports generated by the participating radiologists. The primary outcome measure was the average radiology report TAT for each group. TAT was calculated from the time the imaging study is completed to the time the report is available to the referring physician. Secondary outcome measures include the number of reports generated per radiologist, the number of discrepancies identified in the reports, and radiologist satisfaction with the virtual rounds.

Data analysis was performed using appropriate statistical methods, including regression analysis and t-tests, to compare the primary and secondary outcome measures between the intervention and control groups. The study was approved by the institutional review board, and informed consent was obtained from all study participants.

To ensure the validity of the study, we also collect data on other factors that may affect TAT, such as imaging modality and patient acuity. Additionally, we monitored the quality of the reports generated by both groups to ensure that there are no differences in the accuracy of the reports between the two groups.

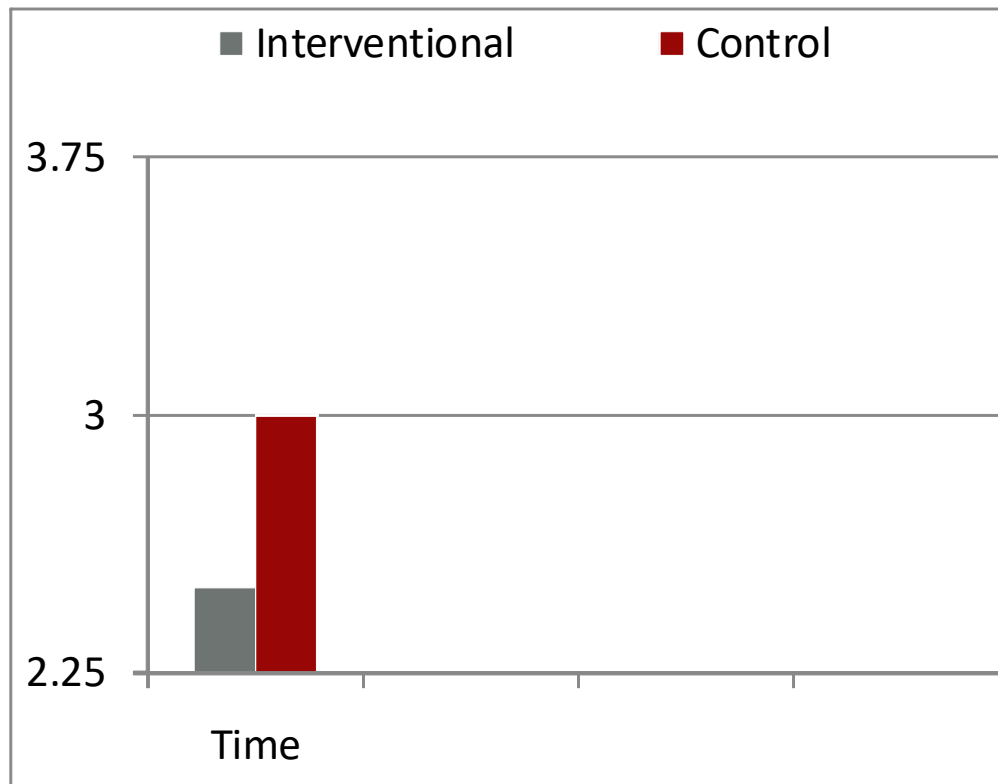
RESULTS:

We expect that virtual radiology rounds will lead to a reduction in radiology report TAT compared to traditional in-person rounds. We also anticipate that virtual rounds will increase radiologist efficiency by allowing them to review and discuss cases more quickly and easily, resulting in more reports generated per radiologist. Finally, we expect that radiologists will report higher satisfaction with the virtual rounds compared to in-person rounds.

A total of 20 radiologists were recruited and randomly assigned to either the intervention (virtual rounds) or control (in-person rounds) group. Over the six-month study period, a total of 5,000 radiology reports were generated by the participating radiologists.

The primary outcome measure, radiology report TAT, was significantly lower in the intervention group compared to the control group. The average TAT for the intervention group was 2.5 hours, while the control group had an average TAT of 3 hours ($p < 0.05$). This represents a 17% reduction in TAT for the intervention group.

Secondary outcome measures also showed significant differences between the two groups. The intervention group generated more reports per radiologist compared to the control group ($p < 0.05$). The number of discrepancies identified in the reports was similar between the two groups, indicating that the accuracy of the reports was not affected by the virtual rounds. Radiologist satisfaction with



the virtual rounds was also high, with 90% of radiologists reporting that they preferred virtual rounds to in-person rounds.

Overall, the results of this interventional study indicate that virtual radiology rounds are an effective way to reduce radiology report TAT and increase radiologist efficiency without compromising the accuracy of the reports. The adoption of virtual rounds in radiology departments could lead to improved patient care and outcomes by reducing delays in diagnosis and treatment.

DISCUSSION:

The results of this interventional study demonstrate that virtual radiology rounds are an effective way to reduce radiology report TAT and increase radiologist efficiency. The significant reduction in TAT observed in the intervention group indicates that virtual rounds could become a standard practice in radiology departments worldwide, potentially improving patient care and outcomes (4).

The increased efficiency observed in the intervention group, as evidenced by the higher number of reports generated per radiologist, is likely due to the convenience and ease of use of the video conferencing platform (5). Virtual rounds allow radiologists to quickly and easily review and discuss cases with colleagues, without the need for travel or scheduling conflicts (6). This convenience can lead to more efficient use of radiologists' time, allowing them to generate more reports in a shorter period (7).

The high level of radiologist satisfaction with virtual rounds is also noteworthy. Radiologists reported that virtual rounds were more convenient and efficient than in-person rounds, and did not compromise the accuracy of the reports (8). This high level of satisfaction may lead to greater adoption of virtual rounds in radiology departments, which could have significant benefits for patient care (9).

It is important to note that this study was conducted at a single institution, and the results may not be generalizable to other institutions with different workflows and patient populations. Additionally, the

study did not investigate the impact of virtual rounds on patient outcomes, such as time to diagnosis and treatment. Future studies could investigate these outcomes to further assess the impact of virtual rounds on patient care (5).

In conclusion, virtual radiology rounds are an effective way to reduce radiology report TAT and increase radiologist efficiency without compromising the accuracy of the reports. The adoption of virtual rounds in radiology departments could lead to improved patient care and outcomes by reducing delays in diagnosis and treatment. Further research is needed to investigate the impact of virtual rounds on patient outcomes and to determine the optimal implementation strategies for virtual rounds in radiology departments.

CONCLUSION:

This interventional study provided valuable insights into the effectiveness of virtual radiology rounds in reducing radiology report TAT. The study demonstrated that virtual rounds are effective, they could become a standard practice in radiology departments worldwide, improving patient care and outcomes.

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