

Reducing Radiography Repeats To Ensure Patient Safety



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Introduction

Dental radiographs are essentially diagnostic tools. They are also commonly used to monitor endodontic treatment procedures and its outcomes. Even with the advent of digital sensors, it is still important to ensure lowest possible radiation exposure for such patients by taking only necessary radiographs or minimise repeat radiographs. Based on our baseline data from June 2013 to March 2014, **the median radiograph repeat was 11%**. This improvement project aims to further reduce the radiograph repeats.

Objective

To reduce the monthly median x-ray repeats among clinicians by 20% by Jan 2015.

Methodology

In Figure 1 and Figure 2, the top reason that attributed to highest x-ray repeat by clinicians is 'Positioning Error' (80%) and Endodontics Residents are the main contributor to the high repeat rates. Therefore, the team decided to focus on the interventions with Endodontics Residents.

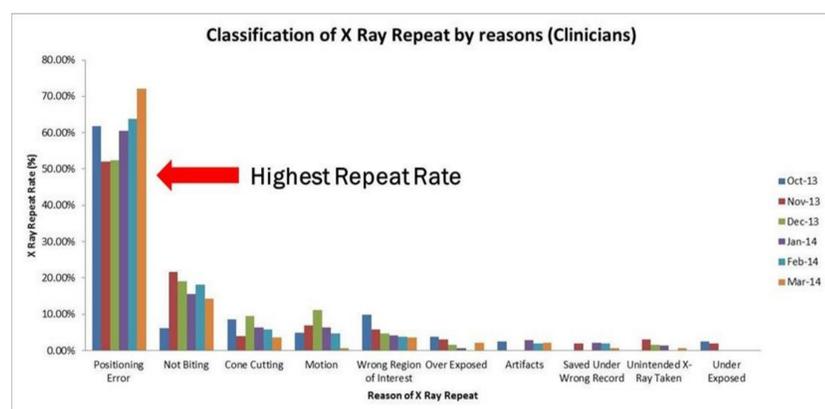


Figure 1

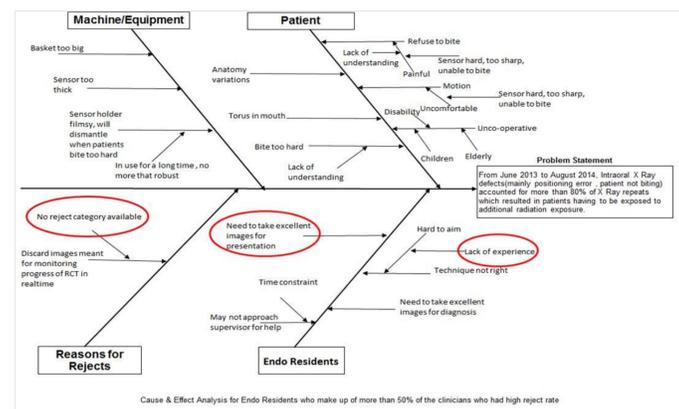


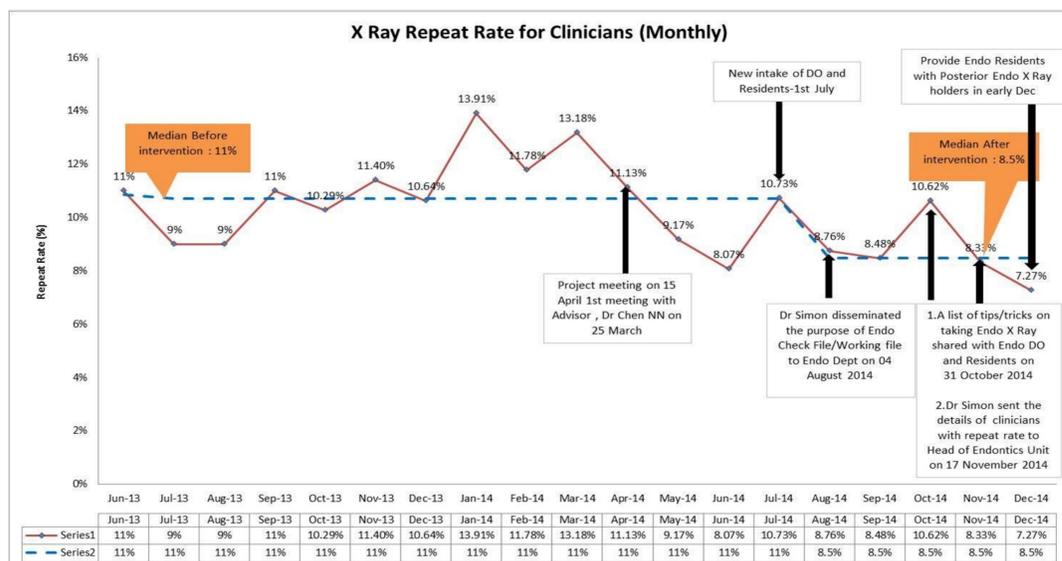
Figure 2

Interventions

- PDSA #1- Dissemination of X-ray Repeat Rate to HOD/Unit Head.
- PDSA #2- Dissemination of Endodontics Check/Reject File Category to clinicians.
- PDSA #3- Develop a list of Intraoral X-ray tips/tricks to share with Endodontics Residents and junior clinicians.
- PDSA #4- Provided Posterior Endo X-ray holders to Residents ; aim to reduce positioning errors.

Results

- The median X-ray repeat rate was reduced from **11% to 8.5%** and had surpassed the target set (i.e. 8.8%) at the start of the project.
- In Oct-14, a spike in repeat rate is caused by flimsy sensor holders which are used when taking periapical X-Ray. These holders tend to dismantle and break apart when patients bite too hard on them, resulting in more X Ray repeats.
- New sensor holders have been procured to replace the flimsy ones since early December 2014.



Benefits

Patient's Health & Safety

- Lesser repeats mean
 - ✓ Reduced unnecessary radiation exposure for patients

Turnaround Time

- Lesser repeats mean
 - ✓ Reduced waiting time for patients taking x-rays
 - ✓ Reduced consultation time and waiting time for patients

Saving for the company

- Lesser repeats mean
 - ✓ Lower utilization for the x-ray machine, lesser wear and tear
 - ✓ Prolonging the lifespan of the machine
 - ✓ Lower electricity consumption

Strategies for sustainability

- HOD to disseminate monthly radiograph repeat data/ rate to all clinicians and identify ways to reduce repeats.
- Radiograph repeat data is tracked as BSC KPI.
- Share the interventions with all new Endodontics Clinicians; Residents and Dental Officers posted to Endodontics unit.