

# Filling the Gap: Improving Communication between Dentistry and Radiotherapy Departments

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## Introduction

- Most patients with Head and Neck cancer (HNC) should have a consultation with a dentist experienced in radiation side effects prior to the start of their radiotherapy (XRT), ideally before simulation (sim).
- At the Odette Cancer Centre, patients frequently had their sim and dental consultation on the same day resulting in confusion as to whether to proceed with or delay sim, especially if a dental extraction (DE) was required.
- Some patients who had DEs after sim required a repeat sim (resim) due to a change in the jaw position, which subsequently delayed the start of XRT.
- The aim of this quality improvement (QI) initiative was to avoid unnecessary resims and delays to starting XRT for HNC patients by improving the communication between the Departments of Dentistry and Radiotherapy.

## Methods

- An email communication template was developed collaboratively between the Departments of Dentistry and Radiotherapy (see Figure 1).

Patient: Dwarf, Happy  
MRN: 1234567  
Teeth to be extracted: 38 & 46  
Date of Procedure: April 27, 2022  
Expected duration of post-op swelling: 7 Days  
Expected change in resting jaw position: No

Figure 1: Example email sent by Dentistry to the Radiotherapy Planning Team

- From October 2020 – October 2021, 70 HNC patients seen in consultation with dentistry required DEs.
- Emails were sent by the dentist to the Clinical Specialist Radiation Therapist (CSRT) for triaging and a collaborative decision was made with the Radiation Oncologist (RO) regarding the need of an intervention.
- The dosimetric impact of 7 patients who had dental extractions after simulation was also analyzed by the HNC medical physicist.

## Discussion & Conclusion

- This QI initiative allowed radiation therapists (RTTs) and ROs to appropriately identify which patients needed an intervention to prevent unnecessary resims or delays in starting XRT; increased awareness amongst the RTTs on the impact of DEs; promoted professional autonomy; and strengthened collaborative decision making.
- Challenges involved the execution of the referral pathway since referrals for dentistry and sim were sent at the same time, which increased the likelihood of DEs occurring after sim.
- A future QI initiative will be undertaken to improve the referral pathway.

## Results

- Of the 70 patients triaged by the CSRT, 32 (46%) required an intervention. See Figure 2 for the collaborative decisions made.

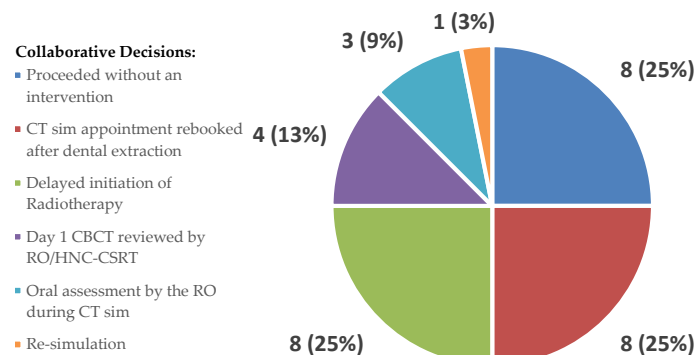


Figure 2: Collaborative decisions of triaged patients. (n=32)

- Dosimetric evaluation found that 3/7 patients showed insignificant increases to max doses when the high dose volume was adjacent to the DE, and none had any significant dose increases to adjacent organs at risk.
- A decision tree was developed collaboratively with the HNC Radiation Site Group that identified five clinical scenarios for HNC patients who require DEs. See Figure 3 for an example of two of the clinical scenarios.
- Considerations for using the Decision Tree include:
  - Date of the DEs relative to sim/initiation of XRT and the expected duration of post-extraction swelling
  - If the DEs changed the jaw position
  - Which teeth were to be extracted and the use of a mouth bite
  - Scenarios for CSRT involvement, such as reviewing the cone beam computed tomography (CBCT) treatment image
  - Ongoing communication with the treatment team
- A change to practice was implemented in which the sim RTTs were made responsible for triaging the dentistry team's email communications.

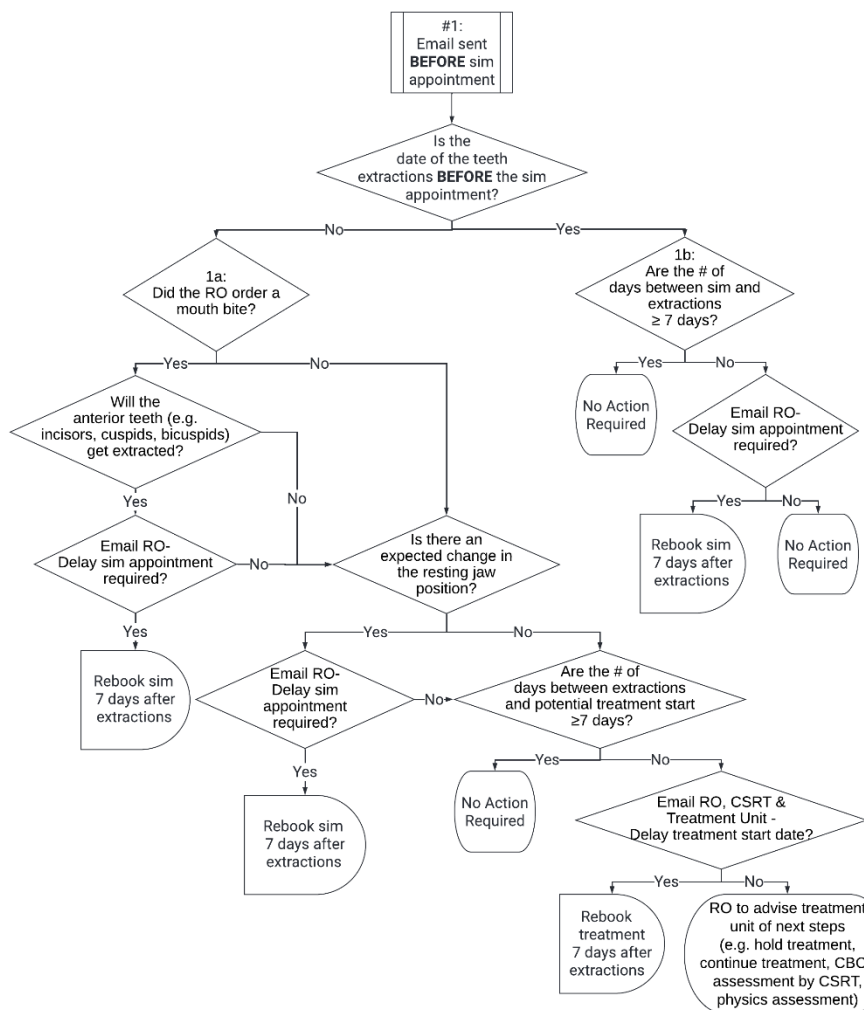


Figure 3: Decision Tree when the email from dentistry is sent prior to simulation.