



INTERVENTION STRATEGY TO IMPROVE QUALITY METRICS IN ORAL CANCER

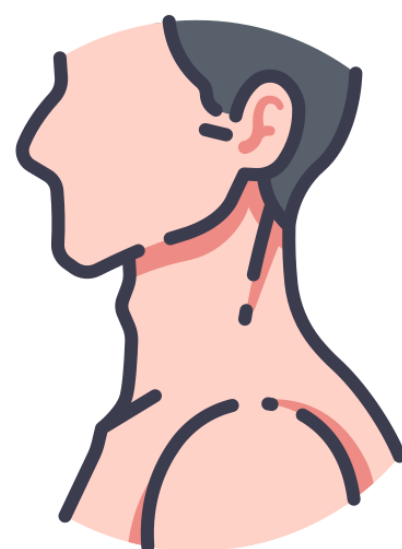
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INTRODUCTION

High quality lymph node (LN) yield and safe surgical margin of primary tumor resection could increase survival in oral cancer. However strategies to improve LN yield and clear surgica margin have been seldom reported.Recently, quality improvement derved from behavioural economics, like NUDGE theories, had been proposed. It had been validated in influenza vaccinaiton rate, hospitalization cost, and improved outcomes in different fields. This study aimed to assess the multiple-step action to promote quality of neck dissection and clear surgica margin in oral cancer.



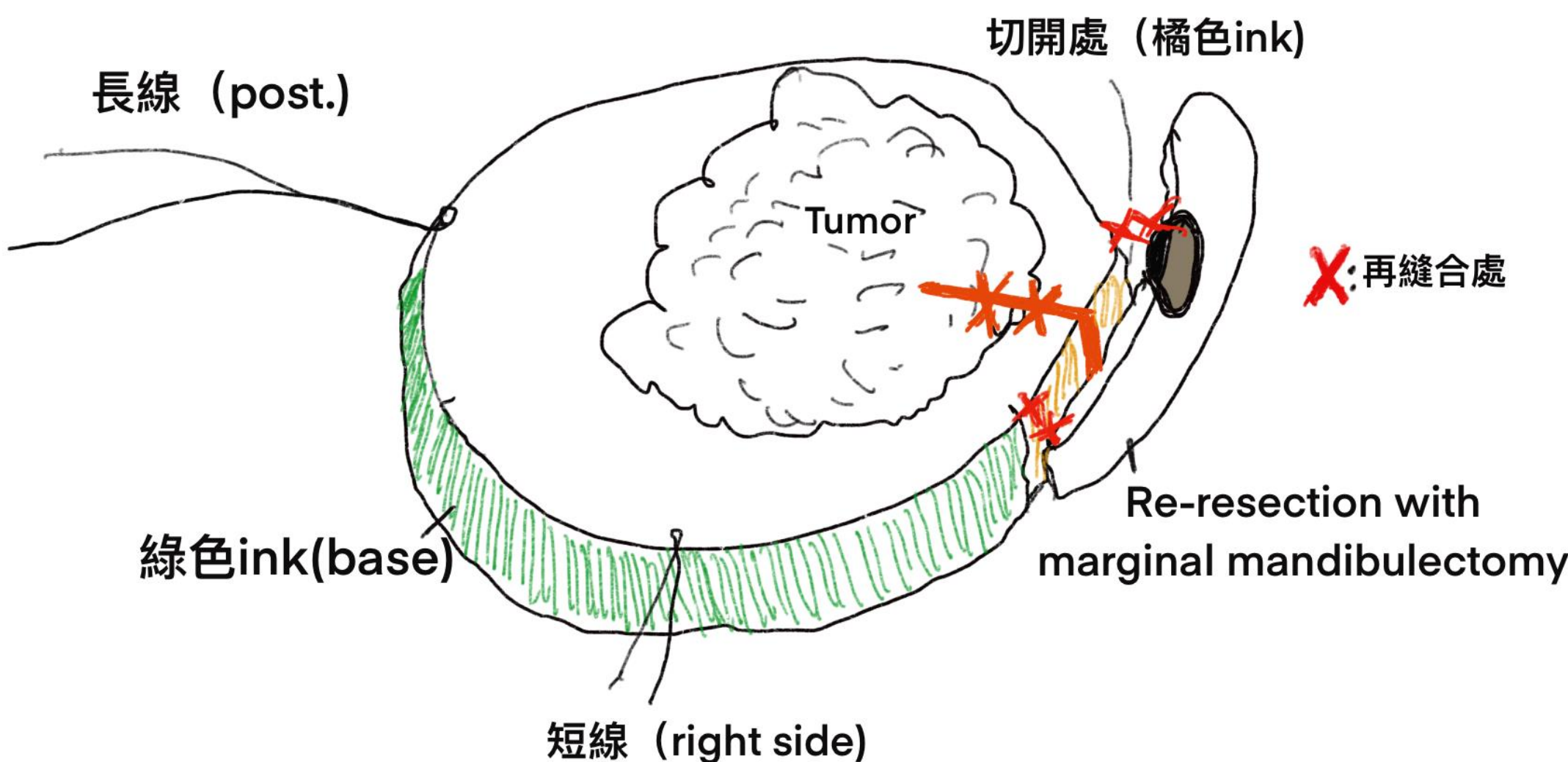
RESULTS

For the first project, the multivariate linear regression and DID analyses revealed that multiple-step action had a positive effect on LN yield. A net improvement of LN yield with a coefficient of 13.78 after launching multiple-step action(since October 2015) was observed. A borderline protective effect of multiple-step action for cN0 patients with a reduced regional recurrence rate of 11.6% through DID analysis was noted.

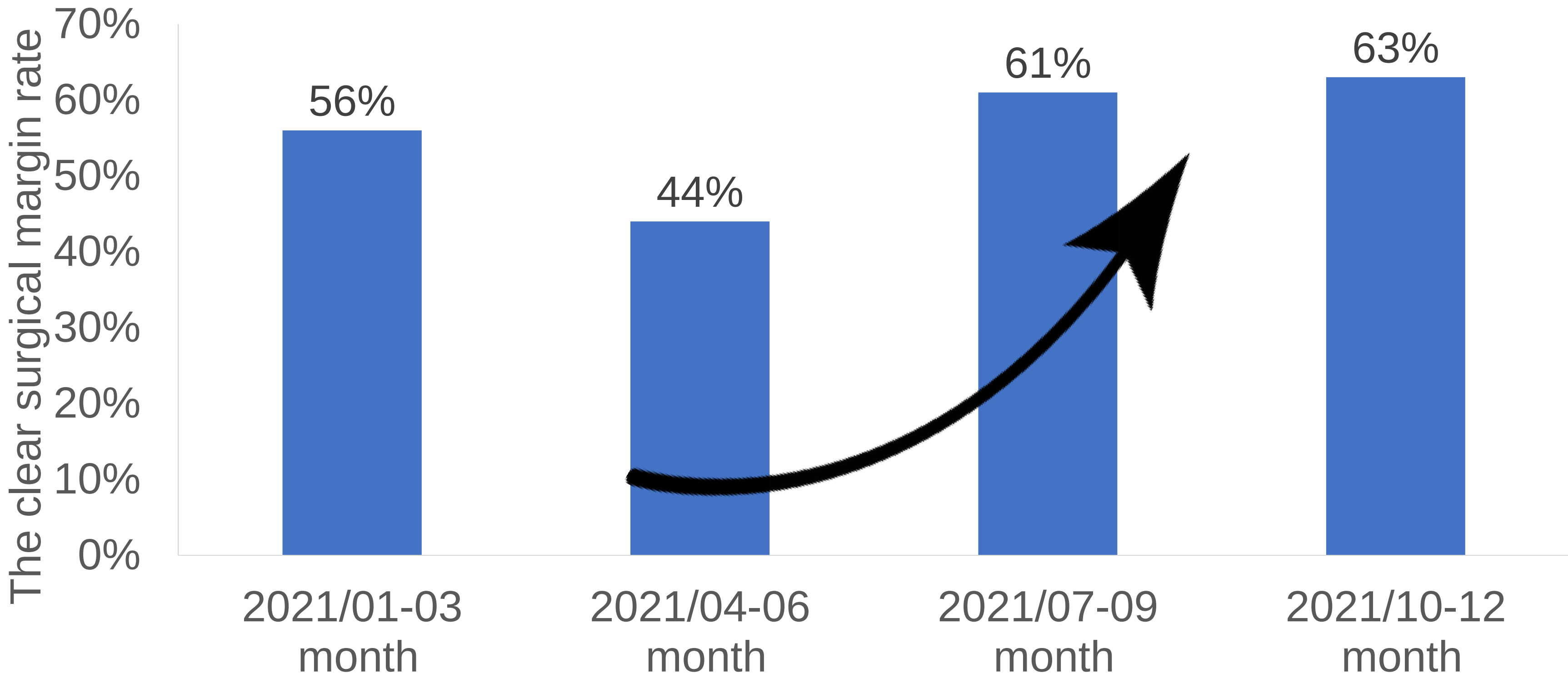
For the 2nd project, the clear surgica margin rate before intervention was 50%, and surgeon was an independent risk factor for positive surgical margin in multivariate analysis. A series of NUDGE-based quality improvement activities were launched thereafter. At the end of quality improvement activity, the clear surgical margin rate was 63%.

Improvement measures

- ◆ Surgical check list
- ◆ resection method
- ◆ frozen section
- ◆ surgical notes

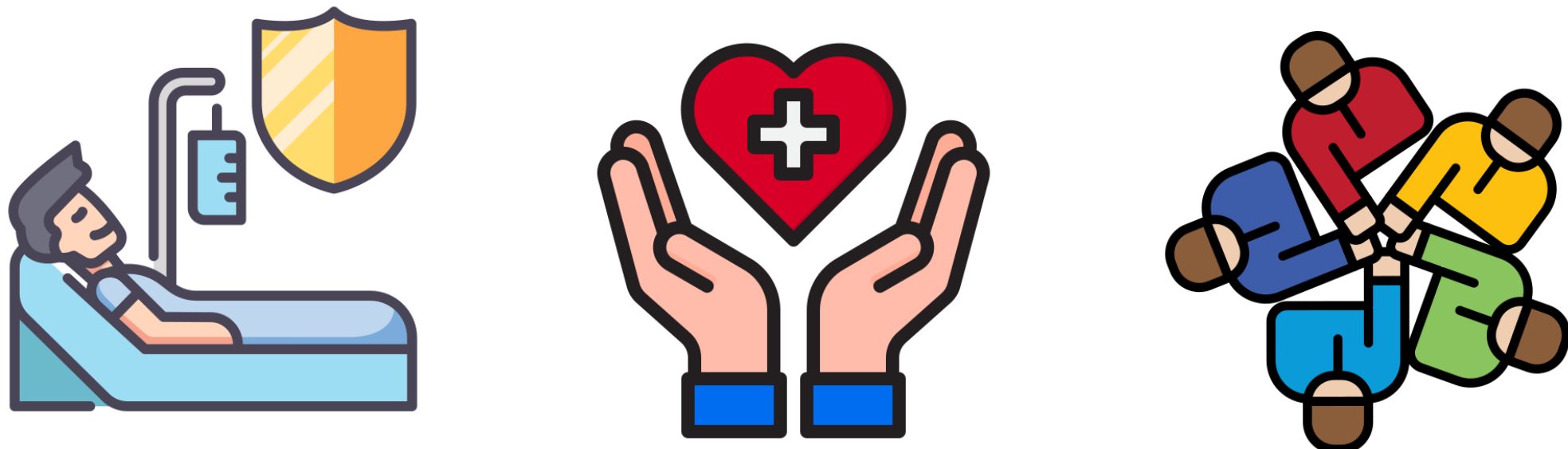


The clear surgical margin rate >=4mm



AIM

- For patients :**
Improve patient outcomes and reduce tumor recurrence.
- For healthcare professionals :**
Strengthen the quality of medical care for head and neck cancer.
- For the hospital:**
Improve postoperative patient quality and reduce hospitalization cost & readmission rates through interdisciplinary teamwork.



METHOD

We applied NUDGE-based interveions in oral cancer surgery in a medical center. The first project was to improve lymph node yield in neck dissection and the second project was to increase clear surgival margin rate. During the first project, patients with oral cancer who underwent primary tumor resection and neck dissection, including elective and radical neck dissection, were recruited between January 2009 and September 2018. Patients were treated by two independent departments in our institute. A multiple-step action was initiated in October 2015 in one department, and another department was as a control group. The impact of multiple-step action on LN yield and regional recurrence were analyzed using multivariate analysis and difference-in-differences (DID) linear regression analysis. On the other hand, a NUDGE-based protocols, like understanding mapping, compartment resection, checklist during surgery, and surgical ink use for margin marking to improve clear surgical margin (defined as closet pathological margin>=4 mm) rate was also applied since 2021 March. The clear margin rate at the end of 2021 was compared with pre-intervention group.

CONCLUSIONS

Our study revealed that NUDGE-based interventions in neck dissection and surgical margin were successful. The LN yield and clear surgical margin rate increased after quality improvement activities. The observed activity may promote surgeons to improve the quality of neck dissections and primary tumor resection, is feasible, and could be applied to a widespread patient population.



ACKNOWLEDGEMENTS

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Grateful for the strong support from the hospital management in promoting patient safety initiatives at clinical units. Thankful for the seamless cooperation of the healthcare team in providing high-quality medical services to patients. We continuously improve medical techniques and prioritize patient safety based on evidence-based practices.



REFERENCES

NCCN Guidelines. (2021). Retrieved from <https://www.nccn.org/guidelines/nccn-guidelines>