

Prevention Of Workplace Injuries While Taking Out the Denture Flasks From Boiling Unit

Mr Chua Kia Seng, NDCS
Ms Berry Kuan, NDCS
Ms Nurul Amirah Binti Mohmad Said, NDCS

Introduction

Dental technicians working at dental laboratory 4 often need to take out denture flasks from the boiling unit. Though there are gloves which is used to protect their arms while taking out the denture flasks, technicians sometimes suffer scald or burnt on their arms when taking out the denture flasks because the gloves are worn out or torn, as shown in Figure 1.

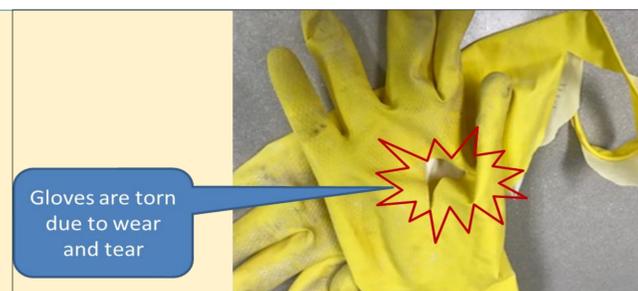


Figure 1

Objective



To ensure zero workplace injury by scalding or burnt when taking the denture flasks out from the boiler in 3 month time.

Our Solutions

The team employed design-thinking to design a denture flask scoop to take out the denture flasks, without the need for the technician to put their arm into the boiling unit, as shown in Figure 2.



Figure 2

Root Cause Analysis



The team analyzed the root cause using the 'five whys' technique to delve deeper on the issue for causing the scald and burnt.

Why is it happening?

1. Need high temperature to melt up wax in the denture flasks.
2. Hot water is splashing when boiling unit is switched on.
3. To remove denture flasks in hot steam.

Result



Figure 3- New Denture Flask Scoop



1. Denture flasks are being scooped out from the boiling unit with the new denture flask scoop



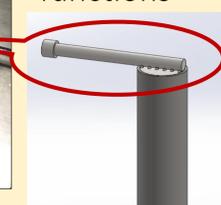
2. There is a safety distance between the dental technician and the denture flasks (in red arrow)



3. The denture flask is safely transferred to the rubber mat. The risk of being scalded/ burnt is significantly reduced with our design-new denture flask scoop!



4. In addition, the edge of the scoop has another additional function- which is used to scoop out obturator flask. It is a 2-in-1 design which serves 2 functions



Survey

A survey was conducted to determine if the newly designed denture scoop helps to reduce the potential risk of burnt injuries. Before intervention, 87% of the staff (13 out of 15 staff) at dental lab 4 indicated that they felt the heat when taking out as shown in Figure 4. After using the denture scoop, 93% (14 staff) agreed that the scoop is an additional safeguard which will protect them from potential workplace injuries; scald and burnt as shown in Figure 5. Some commented that it is a good design which prevent them from scalding by steam or vapor.

Q2: Does your hand feel the heat when you take out the denture flasks from the boiler?

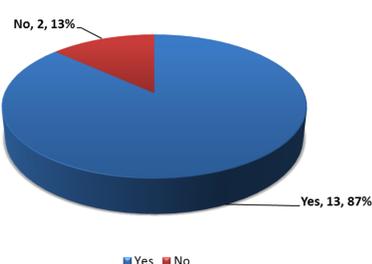


Figure 4

Q4: With the new denture scoop that is designed by your peers, do you think it is an additional safeguard which will protect you from potential workplace injury; scald and burnt

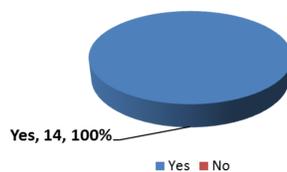


Figure 5

Learnings from our C.I Journey

- ✓ To ensure the workflow and workplace is safe without posing any risks or health problem to staff.
- ✓ To actively look out for risk and health issues in our workplace.
- ✓ To learn to take proactive and positive actions against potential injuries or ill-health problem