

# PRICKSTOP!: SCALING DOWN THE INCIDENCE OF NEEDLE STICK INJURIES AMONG DENTAL PERSONNEL IN HULU LANGAT DENTAL CLINICS

QLL 88

Nuraisyah Z.A, Zurina Asiah M, Hafizah M, Nur Izzah S, Munawwarah M.M, Mohamad Izzuddin N, Syasya Irdina J, Fasya Rima M.N

Pejabat Kesihatan Pergigian Daerah Hulu Langat



## 1. INTRODUCTION

### NEEDLESTICK INJURIES

A needlestick injury (NSI) is an accidental skin-penetrating stab wound from a hollow-bore needle containing another person's blood or body fluid. High number of NSI cases in Primary dental clinics in Hulu Langat District between 2019-2023 indicating urgent need for intervention.

#### 1.1 PRIORITISATION OF PROBLEM

Problems	S	M	A	R	T	Total
Low percentage of complete case among antenatal mothers	16	18	16	12	16	78
Low percentage attendance of new antenatal mothers for dental check up	12	16	10	6	6	50
High incidence of needle stick injury in primary clinic	18	18	17	18	18	89
High number of contamination of dental instruments that are sterilized	14	16	14	6	6	56
Low percentage of complete 3 visits of further intervention in KOTAK Programme	16	14	16	10	12	68

7 group member	Score	1	2	3
Indication		Low	Medium	High

#### 1.2 REASONS FOR SELECTION

**S** 10 cases have been reported for NSI in Hulu Langat District which contributes the highest number in Selangor (POA BKPS 2019-2023)

**M** Number of needlestick injury cases by using Data Registry of Sharp Injury Surveillance

**A** To decrease incidence of NSI in Hulu Langat district and create safe working environment to provide care without unnecessary risks to operators well-being

**R** Problem can be overcome by a comprehensive approach to implement and improve the existing processes

**T** This project and remedial measures can be carried out every month

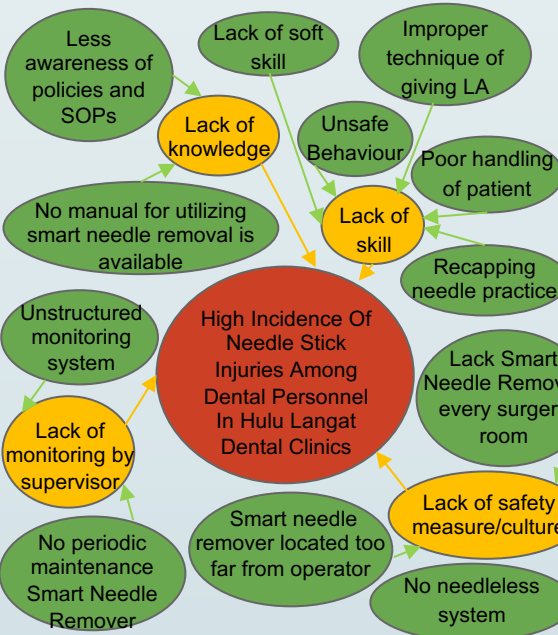
#### 1.3 LITERATURE REVIEW

Simulation training for staff is done to address the lack of knowledge and to create awareness of preventive behavior and risks associated with needlestick injuries. (Augustine Kumah et al 2023)

Implementation of program with regards to prevention of sharp injuries and introducing an adequate monitoring system is a promising methods in preventing sharp injuries. (S Musa et al 2014)

Safety engineering devices use appears to be a major factor in the prevention of NSI (F. Lamontagne et al 2015)

#### 1.4 PROBLEM ANALYSIS CHART



## 2. KEY MEASURE FOR IMPROVEMENT

### 2.1 OBJECTIVES

#### GENERAL OBJECTIVES

To reduce the needlestick injury cases among dental personnel in Hulu Langat Dental Clinics.

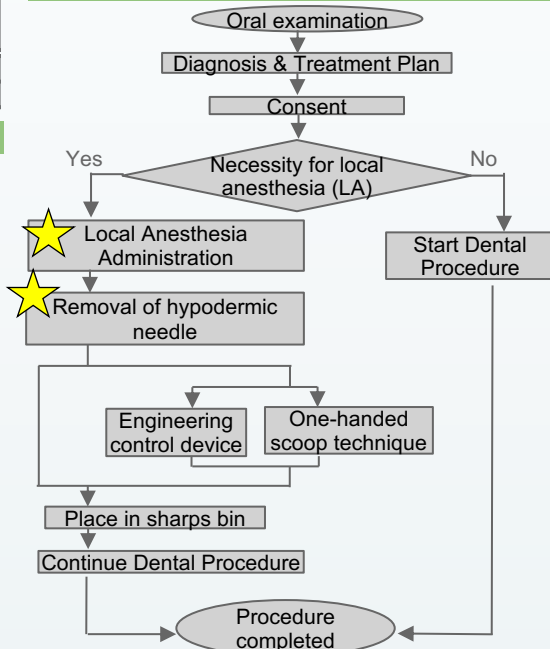
#### SPECIFIC OBJECTIVES

- To verify the number of needlestick injury cases.
- To identify the contributing factors for high incidence of needlestick injuries.
- To formulate and implement proper remedial action.
- To evaluate the effectiveness of remedial action.

### 2.2 INDICATOR AND STANDARD

INDICATOR	Number of needlestick injury among dental health care worker in Hulu Langat district.
STANDARD	Zero case needlestick injury incidence among dental health care worker in Hulu Langat District.

### 2.3 PROCESS OF CARE



### 2.4 MODEL OF GOOD CARE

PROCESS OF CARE	CRITERIA	STANDARD	PRE-REMEDIAL
Local Anaesthesia Administration	Smart needle in all surgery room	100%	0%
	Safety culture signage	100%	0%
	Appoint Sharp Safety Officer to monitor safety compliance	100%	0%
Removal of hypodermic needle	Safe needle disposal signage	100%	0%
	Locate smart needle within arm reach	100%	0%
	Appoint Sharp Safety Officer to monitor safety compliance	100%	0%

## 3. PROCESS OF GATHERING INFORMATION

### 3.1 METHODOLOGY

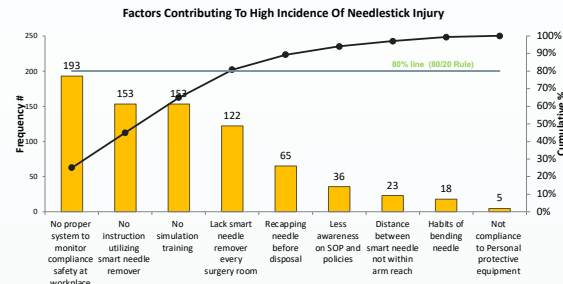
STUDY DESIGN	QA/ QI study - Cross sectional study
STUDY SAMPLING	All dental personnel working in dental clinic in Hulu Langat District
STUDY TOOLS	Existing retentive PK-A-03L3 09 / pin00 Questionnaire
STUDY PERIOD	Verification : July- August 2023 Cycle 1: September - March 2024
STUDY ANALYSIS	Microsoft Excel MS 2019
INCLUSION CRITERIA	All dental personnel engaged in clinical work at dental clinics within the Hulu Langat District.
EXCLUSION CRITERIA	All dental personnel managing administrative tasks at the Hulu Langat Dental Health Office.

## 4. ANALYSIS & INTERPRETATION

### 4.1 VERIFICATION STUDY

Statistical analysis was carried out to ascertain main contributing factors and pre-intervention study conducted in 2023 revealed 3 cases of NSI.

### 4.2 PARETO-CHART



## 5. STRATEGY FOR CHANGE

### 5.1 STRUCTURED MONITORING SYSTEM

Sharp safety officer will be appointed to monitor safety compliance bi-weekly.

All staff members who attended the training (OSCE) will be monitored by their supervisor at 1, 3, and 6 month intervals in their respective clinics

### 5.2 PRACTITIONER EDUCATION TRAINING (OSCE)

Introduction to OSCE training for testing theoretical knowledge and its practical application in clinical scenarios.



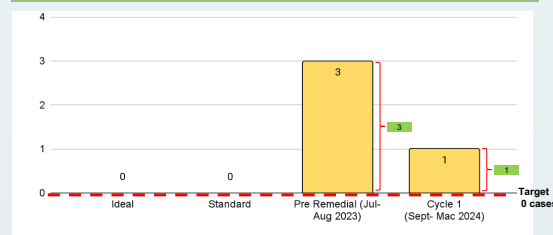
### 5.3 VISUAL AID SIGNAGE

Visual aids for proper hypodermic needle handling in the surgery room and be positioned at the eye level of the operator.



## 6. EFFECTS OF CHANGE

### 6.1 ACHIEVABLE BENEFIT NOT ACHIEVE



## 7. THE NEXT STEP

- The project will expand to include all staff in Hulu Langat district, with current participation averaging around 25 individuals per group.
- Proactive monitoring by supervisor to ensure ZERO occurrence of NSI

## 8. ACKNOWLEDGEMENT

The authors would like to thank the facilitator as well as the JKKP team guidance and contribution throughout this study. We would like to specially thank our District Dental Officer for her continuous support.

## 9. REFERENCES

- Advancing Staff Safety: Assessment of Quality Improvement Interventions in Reducing Needlestick Injuries Among Staff at Nyaho Medical Centre. Augustine Kumah, Anthony Ocutu Forkuo-Minka Glob J Qual Saf Healthc. 2023 May; 6(2): 55-61.
- Musa S, Peek-Asa C, Young T, Jovanovic N. Needle Stick Injuries, Sharp Injuries and other Occupational Exposures to Blood and Body Fluids among Health Care Workers in a general hospital in Sarajevo, Bosnia and Herzegovina. International Journal of Occupational Safety and Health. 2015;4(1):31-37
- Role of Safety-Engineered Devices in Preventing Needlestick Injuries in 32 French Hospitals • Author(s): F. Lamontagne, MD, MSc; D. Abiteboul, MD; I. Lolom, MSc; G. Pellissier, PhD; A. Tarantola, MD, MSc; J. M. Descamps, MD; E. Bouvet, MD Source: Infection Control and Hospital Epidemiology, Vol. 28, No. 1 (January 2007), pp. 18-23