

# Reducing Percentage of Inappropriate Tramadol Prescribing in Emergency & Trauma Department (ETD) of Hospital Tuanku Ampuan Najihah (HTAN)

Ser Yin Ting<sup>1</sup>, Pang Siow Fen<sup>1</sup>, Amril Radzman bin Amrahi<sup>1</sup>, Nurfatin Nadiyah bt Mohd Mokhtar<sup>1</sup>, Wan Chooi Xian<sup>1</sup>, Dr Siti Nor Rahimi bt Abdul Razak<sup>2</sup>.  
<sup>1</sup>Pharmacy Department, Hospital Tuanku Ampuan Najihah, <sup>2</sup> Emergency & Trauma Department, Hospital Tuanku Ampuan Najihah



PP-19

## 1. INTRODUCTION / LITERATURE REVIEW

Pain is defined by International Association for the Study of Pain (IASP) as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage". Studies have shown that pain is the most common reason patients present to ETD, account for up to 78 % of the visits<sup>1</sup>.

There was an increasing trend of Tramadol usage in ETD HTAN from 2018 -2020 with an increment of 45.7%. Tramadol is considered as a safe analgesic but is also associated with some common as well as serious side effects. According to the report of Malaysian Adverse Drug Reactions Advisory Committee (MADRAC) in 2017, the National Pharmaceutical Regulatory Agency (NPRA) has received 1106 adverse drug reaction (ADR) reports with 1884 adverse reactions associated with Tramadol. Vomiting, nausea, dizziness and pruritus were most reported adverse reactions. Adverse events related to the System Organ Class Respiratory and Mediastinal Disorders include dyspnea, apnea and respiratory distress<sup>2</sup>. In HTAN, there were 31 ADR reports associated with Tramadol from 2014-2020.

Inappropriate Tramadol prescribing was defined as Tramadol prescribed in ETD not in accordance with the Pain Management in Emergency & Trauma Department Guideline (2nd edition).

## 2. SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

**2.1 Problem Prioritization** Group member of 6  
 Scale: 1 = Low ; 2 = Moderate ; 3 = High

Problems	S	M	A	R	T	Total
Increasing number of items with stock below minimum level at OPD substore	9	14	9	11	8	51
High number of Tramadol prescribed not following ETD pain management guideline in ETD	14	14	14	14	12	68
Increasing number of nearly expiry item at ETD	12	10	10	8	8	48
Increasing number of uncollected medications registered with VAS	7	13	10	6	9	45
Wastage of cream and ointment preparation	7	7	8	6	9	37

### 2.2 Justifications

- S**
  - Increased trend of Tramadol from 2018-2020 in ETD HTAN
  - Increase risk of misuse and unwanted side effect
  - Increase chance of wastage
- M**
  - % of Tramadol Prescription not following ETD pain management guideline
- A**
  - Accordance to Pain Management Guideline
  - Consistent with pharmacist's role to help patient achieve optimal benefit from treatment
- R**
  - Multidisciplinary approach
  - Several remedial actions are feasible to improve current practice
- T**
  - 1 year

## 3. PROBLEM ANALYSIS

### 3.1 Cause-Effect Analysis Chart



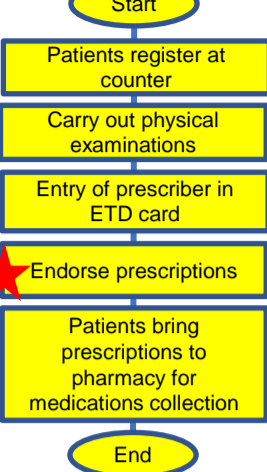
## 4. OBJECTIVES

- 4.1 General Objective**
- To reduce percentage of inappropriate Tramadol prescribing in ETD
- 4.2 Specific Objectives**
- To verify the magnitude of inappropriate Tramadol prescribing
  - To identify the probable causes contributing to the high number of inappropriate Tramadol prescriptions
  - To carry out remedial measures and implement them.
  - To evaluate the effectiveness of the remedial measures.

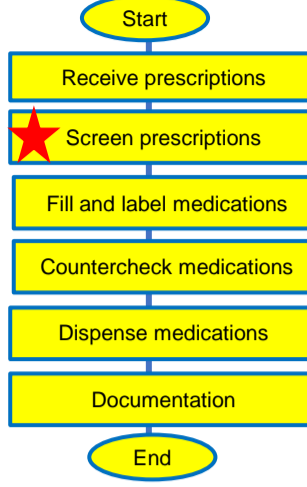
## 5. KEY MEASUREMENT FOR IMPROVEMENT

### 5.1 Process of Care

#### Process of care in ETD



#### Process of care in Pharmacy



### 5.2 Model of Good Care (MOGC) (a) ETD

Step	Process	Criteria	Standard
1	Registration of Patients	All patients should be registered at ETD counter	100%
2	Physical examinations	All patients should be examined and reviewed of current condition	100%
3	Entry of prescriber in ETD card	All progressions related to current conditions and medications will be written in ETD card	100%
4	Endorse prescriptions	Current medications will be prescribed in the prescriptions with: - Name & IC of patient, drug regimen, sign & stamp from doctor, date, and diagnosis - Right patient - Right medication - Right dose - Right route of administration - Right time of administration - All medications should be prescribed appropriately	100%

### (b) Pharmacy

Step	Process	Criteria	Standard
1	Receive prescriptions	Get prescriptions from ETD	100%
2	Screen prescriptions	A. Ensure all prescriptions are: - complete with name and IC of patient, drug regimen, sign & stamp from doctor, date, and diagnosis - Right patient - Right medication - Right dose - Right route of administration - Right time of administration B. Check whether medications is prescribed appropriately C. Contact prescribers if there is any prescribing error D. Make notes on the prescription after intervention E. Record in Prescription Intervention Form	100%
3	Fill and label medications	All the medications must be filled and labelled correctly	100%
4	Countercheck medications	All the medications must be counterchecked according to 5R	100%
5	Dispense medications	All the medications must be dispensed according to 5R	100%
6	Documentation	All prescriptions dispensed must be recorded and documented	100%

### 5.3 Indicator

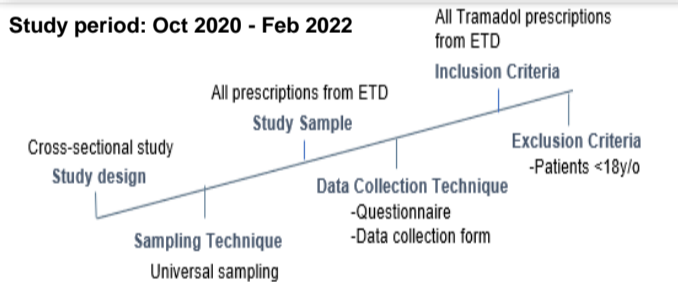
- Percentage of tramadol prescriptions not following ETD Pain Management Guideline

$$\frac{\text{Total number of Tramadol prescriptions from ETD not following ETD Pain Management Guideline}}{\text{Total number of Tramadol prescriptions from ETD}} \times 100\%$$

### 5.4 Standard

- To reduce percentage of tramadol prescriptions not following ETD Pain Management Guideline to **20%** (based on meeting between ETD & Pharmacy Bil. 1/2020 dated 3<sup>rd</sup> December 2020)

## 6. PROCESS OF GATHERING INFORMATION



## 7. ANALYSIS AND INTERPRETATION

- Verification study was carried out from October 2020 to December 2020

### A) ETD

Step	Process	Criteria	Standard	Verification Data
1	Registration of Patients	All patients should be registered at ETD counter	100%	100%
2	Physical examinations	All patients should be examined and reviewed of current condition	100%	100%
3	Entry of prescriber in ETD card	All progressions related to current conditions and medications will be written in ETD card	100%	100%
4	Endorse prescriptions	Current medications will be prescribed in the prescriptions with: - Name & IC of patient, drug regimen, sign & stamp from doctor, date, and diagnosis - Right patient - Right medication - Right dose - Right route of administration - Right time of administration - All medications should be prescribed appropriately	100%	100%

### B) Pharmacy

Step	Process	Criteria	Standard	Verification Data
1	Receive prescriptions	Get prescriptions from ETD	100%	100%
2	Screen prescriptions	A. Ensure all prescriptions are: - Complete with name and IC of patient, drug regimen, sign & stamp from doctor, date, and diagnosis - Right patient - Right medication - Right dose - Right route of administration - Right time of administration B. Check whether medications is prescribed appropriately C. Contact prescribers if there is any prescribing error D. Make notes on the prescription after intervention E. Record in Prescription Intervention Form	100%	19.2%
3	Fill and label medications	All the medications must be filled and labelled correctly	100%	100%
4	Countercheck medications	All the medications must be counterchecked according to 5R	100%	100%
5	Dispense medications	All the medications must be dispensed according to 5R	100%	100%
6	Documentation	All prescriptions dispensed must be recorded and documented	100%	100%

## 8. STRATEGIES FOR CHANGE

- 46 pages of Pain Management in Emergency & Trauma Department Guideline (2<sup>nd</sup> edition) were simplified to **two pages of ETD Pain Management Quick Note**. It was used as a quick reference as it contains types and dose ranges of pain-relieving medication for different pain scenarios.
  - QR CODE for ETD Pain Management Quick Note
  - Printed Quick Note in Green zone, ETD
  - Printed Quick Note in Yellow zone, ETD
- Memo regarding the release of ETD Pain Management Quick Note was distributed to ETD. The ETD Pain Management Quick Note was printed in **pocket-size** and distributed to all ETD doctors.
  - Memo regarding the release of ETD Pain Management Quick Note
  - Handy pocket-sized quick note
- Online continuous medical education (CME) by pharmacy department to ETD doctors and pharmacists.
  - PAIN MANAGEMENT IN EMERGENCY & TRAUMA DEPARTMENT (ETD) 2021
  - BILIARY TRACT PAIN Emergency Quick Note
- Several focus group discussions with the Head of ETD.
  - Standardizing prescribing practice among doctors.
  - Enforcing all ETD doctors to prescribe according to the quick note.

## 9. EFFECTS OF CHANGE

### Conformity to Standard of MOGC

- Post remedial study was carried out from September 2021 to February 2022

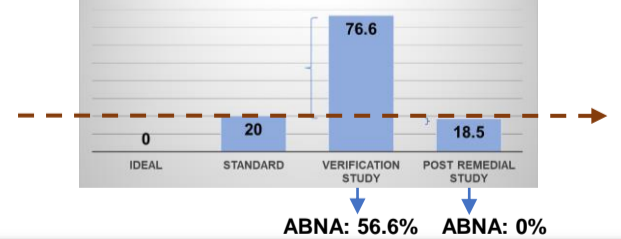
### A) ETD

Step	Process	Criteria	Standard	Verification Data	Post Remedial Study
1	Registration of Patients	All patients should be registered at ETD counter	100%	100%	100%
2	Physical examinations	All patients should be examined and reviewed of current condition	100%	100%	100%
3	Entry of prescriber in ETD card	All progressions related to current conditions and medications will be written in ETD card	100%	100%	100%
4	Endorse prescriptions	Current medications will be prescribed in the prescriptions with: - Name & IC of patient, drug regimen, sign & stamp from doctor, date, and diagnosis - Right patient - Right medication - Right dose - Right route of administration - Right time of administration - All medications should be prescribed appropriately	100%	100%	100%

### B) Pharmacy

Step	Process	Criteria	Standard	Verification Data	Post Remedial Study
1	Receive prescriptions	Get prescriptions from ETD	100%	100%	100%
2	Screen prescriptions	A. Ensure all prescriptions are: - complete with name and IC of patient, drug regimen, sign & stamp from doctor, date, and diagnosis - Right patient - Right medication - Right dose - Right route of administration - Right time of administration B. Check whether medications is prescribed appropriately C. Contact prescribers if there is any prescribing error D. Make notes on the prescription after intervention E. Record in Prescription Intervention Form	100%	19.2%	38.7%
3	Fill and label medications	All the medications must be filled and labelled correctly	100%	100%	100%
4	Countercheck medications	All the medications must be counterchecked according to 5R	100%	100%	100%
5	Dispense medications	All the medications must be dispensed according to 5R	100%	100%	100%
6	Documentation	All prescriptions dispensed must be recorded and documented	100%	100%	100%

### ABNA Analysis



## 10. THE NEXT STEP

- We plan to expand the study to ETD in other cluster hospitals.
- Continuous monitoring and education under orientation modules will be carried out.

## 11. CONCLUSION

In conclusion, our key changes of the strategies managed to reduce the percentage of inappropriate Tramadol prescribing in ETD from 76.6% to 18.5% and ABNA was reduced from 56.6% to 0%.

## 12. ACKNOWLEDGEMENT

We would like to thank the pharmacy unit, ETD of Hospital Tuanku Ampuan Najihah, Hospital directors, JKN Negeri Sembilan for their cooperation, support and commitment in this study.

## 13. REFERENCES

- Ministry of Health Malaysia. Pain Management in Emergency & Trauma Department. 2nd Edition. 2020.
- Wan Abhar WNA (2017). MADRAC Newsletter-Tramadol: Restricted Use in Children and Warnings of Use in Pregnant and Breastfeeding Women. Malaysia: National Pharmaceutical Regulatory Agency (NPRA).