

# Standard Journey for Communicable Disease (NCD) Patients and Maintaining the Sustainability of Reduced Lead Time

Nor Azlin AR<sup>1</sup>, Nik Harlina Roza NK<sup>1</sup>, Lailatul Nur NA<sup>2</sup>, Mohamad Hafiz H<sup>2</sup>, Hasneeza H<sup>2</sup>

<sup>1</sup>Wakaf Bharu Health Clinic, Tumpat, Kelantan

<sup>2</sup>Tumpat District Health Office, Tumpat, Kelantan

QLL  
73



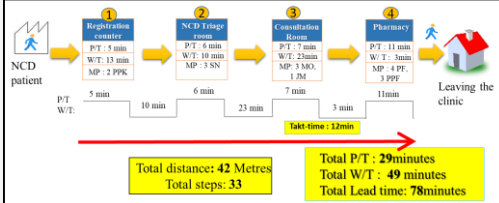
## INTRODUCTION

**Wakaf Bharu Health Clinic** is a type 3 clinic, serves ~400 patients/day, 40% being non-communicable disease (NCD) patients.

NCD patients spend ~78 minutes/visit, across 4 stations: registration, triaging, consultation, and pharmacy.

**Lean intervention<sup>1</sup>** is used to optimize the delivery of healthcare services to patients

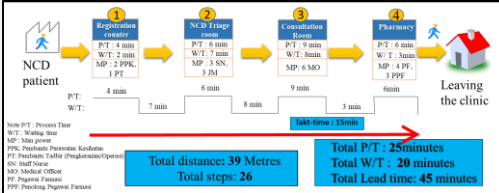
## CURRENT VALUE STREAM MAPPING (VSM)



## STUDY OBJECTIVE

- To improve the NCD patients' journey.
- To assess its sustainability by 6 monthly follow-up evaluations.

## FUTURE VSM



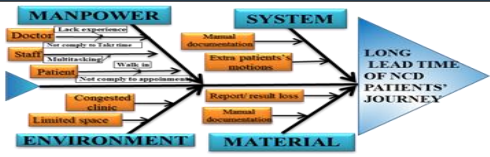
## METHODOLOGY

October 2022-January 2023

60 scheduled NCD patients, excluding emergencies/routine procedures.

Sustainability studies were conducted in May and November 2023.

## ROOT CAUSE ANALYSIS



## KAIZEN BURST

Stations	Pre Kaizen <sup>2</sup>	Post Kaizen
1 Registration Counter	<ul style="list-style-type: none"> <li>Long waiting time (shortage of staff)</li> <li>Unorganized record.</li> <li>Patient non-comply to given appointment.</li> </ul>	<ul style="list-style-type: none"> <li>Staff reallocation.</li> <li>Electronic Medical Record (ACM).</li> <li>Manual documentation organization by disease and zone.</li> <li>Staggered / online appointment.</li> </ul>
2 NCD Triage Room	<ul style="list-style-type: none"> <li>Long waiting time (Common triage room)</li> <li>Multitasking staff.</li> <li>Glucometer ordered at lab.</li> </ul>	<ul style="list-style-type: none"> <li>Triage rooms based on zoning.</li> <li>1 Diabetic educator allocated for each room.</li> <li>Point Of Care Testing (POCT) by NCD team.</li> </ul>
3 Doctor's Consultation Room	<ul style="list-style-type: none"> <li>Long waiting time.</li> <li>Unavailable lab results.</li> <li>Extra motions. (manual calling system)</li> </ul>	<ul style="list-style-type: none"> <li>Trace result online from lab website.</li> <li>Trace result/ report one day prior to appointment.</li> <li>Digital calling system.</li> </ul>
4 Pharmacy	<ul style="list-style-type: none"> <li>Long waiting time.</li> <li>Extra motions.</li> <li>Defects.</li> </ul>	<ul style="list-style-type: none"> <li>Value Added Service for patients with partial supply prescription.</li> <li>Medication arrangement</li> <li>Direct communication with prescriber.</li> <li>Tallman lettering</li> </ul>

## RESULT

Element	Pre-kaizen	Post-kaizen	Reduction rate (%)
Lead time <sup>W</sup> (min)	78	45	42
Walking distance (m)	42	39	7
Steps	33	26	21
Waiting time (min)	49	20	59
Waste <sup>Q</sup>	30	16	47

Note: <sup>W</sup>Lead time= process time + waiting time  
<sup>Q</sup>Waste comprises of defects, overproduction, waiting, transportation and Extra Processing.

Sustainability studies conducted in May and November 2023 maintain a consistent lead time of 44 to 45 minutes, in line with prior study.

## DISCUSSION

**Rapid process improvement** using lean tools in Wakaf Bharu Health Clinic optimizes healthcare goals by **eliminating waste<sup>3</sup>** and **reducing lead time**, ultimately delivering maximum value to patients. Studies from other health centres in Kelantan<sup>4</sup> show improvement of lead time, in line with my study.

## ACKNOWLEDGEMENT

We thank the Director General of Health, Ministry of Health Malaysia for permission to publish this e-poster. -Kelantan State Health Department.

## REFERENCES

1. Mylean Awareness Module, 2<sup>nd</sup> Edition.IHM. Available at <https://www.ihm.moh.gov.my/index.php/lean-healthcare>.
2. Mylean Project Module.IHM.Available at <https://www.ihm.moh.gov.my/index.php/lean-healthcare>
3. Mark Graban and Joseph E.Swartz, The Executive Guide to Healthcare Kaizen, 2013
4. Kelantan State Health Department, 2023, Unpublished data on Lean Performance Indicator: Inovasi Standard Journey for NCD Patients 2022

For further details, please contact;  
Dr Nor Azlin binti Abdul Rahim

✉ azlin\_rahim88@yahoo.com

Konvensyen QA Kebangsaan kali ke-12, 8-10 Oktober 2024, Negeri Sembilan

