

# Lean clinic: Improving lead time, productivity and patient satisfaction through lean principles and digitalization of workflow in Gunong Health Clinic, Bachok

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## ABSTRACT

**Introduction:** Long waiting time has always been a major problem in healthcare facilities including Gunong Health Clinic. Patients attending Gunong Health Clinic were 120,00 yearly and non-communicable diseases (NCD) patients were 10,000 (8%). Long waiting times result in dissatisfaction among NCD patients. In order to tackle the issue, Gunong Health Clinic has implemented lean principles and digitalization of workflow in Gunong Health Clinic. **Materials and Methods:** Lean Principle in Healthcare, analysis of pre-lean value stream mapping (VSM), NCD patients needed to go multiple stations which were registration, NCD room, consultation room and pharmacy. Few roots cause analysis was determined which were, not enough manpower, confined space and manual system. Kaizen burst have been implemented, which were changes location of NCD room, mobilize staff in charge in NCD room, Drive-Thru Pharmacy and implementing computerized system in clinics Advanced Clinic Management (ACM), In future VSM, the changes significantly reduce time, motion, extra processing and human error while improving efficiency, productivity and patient satisfaction. **Results:** The data is collected 3 times within the year 2017 to 2023 and has shown improved lead time from 87 minutes down to 40 minutes. It also reduces cost RM15K within 1 year, enables properly preserved documentations, and increases patient safety (survey by Lickert scale improved from 3 to 5 points). A few steps were taken to maintain and further improve the program by doing regular audits at six monthly, updates about the Lean program at Lean corner and continuous medical education for all staff. Due to the positive outcome of the study, Lean principle has been extended to all units in Gunong Health Clinic and subsequently adopted by Administrative Unit, Bachok District Health Office. **Conclusion:** Implementation of lean principles and digitizing workflow are good tools to improve overall performance, staff, and patient satisfaction. These measures should be implemented in all health facilities to innovate the healthcare system in Malaysia.