



Lean Healthcare Implementation Mentoring to Reduce Waiting Times for Outpatient Services at PKU Sekapuk Hospital

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Abstract

Waiting time for outpatient services is a key psychological determinant of patient loyalty. PKU Sekapuk Hospital experienced a decline in visit volume due to acute queue accumulation issues triggered by mixed registration counters for Badan Penyelenggara Jaminan Sosial (BPJS) and General patients, as well as the manual flow of prescription paper circulation from the polyclinic to the pharmacy installation. The Community Empowerment Program (CEP) aims to restructure the physical service flow to reduce waste of waiting time. The methodology applied is the Lean Healthcare philosophy through the four-quadrant Plan-Do-Study-Act (PDSA) cycle. Physical interventions were carried out by decoupling the flow (separating the dedicated BPJS counter from the General counter) and implementing a mechanical drop-box system and internal courier for the flow of prescription paper. The results of the post-mentoring time study showed a reduction in total waiting time of 66.3%. The queue duration at the registration counter was reduced to 12 minutes and the time for preparing finished prescriptions at the pharmacy depot dropped drastically to 25 minutes. The CEP program successfully met the Ministry of Health's Minimum Service Standards (MSS) while realizing the hospital's operational quality indicator targets.

Keywords: Operational Quality; Plan-Do-Study-Act; Queue Management; Service Flow.

INTRODUCTION

Waiting time for healthcare services is the most crucial psychological determinant of patient satisfaction and loyalty in the contemporary healthcare industry. In the era of information transparency in Lamongan Regency, patients have complete freedom to migrate to competing healthcare facilities if they perceive the quality of administrative services to be slow.¹ The speed of service delivery is now seen as equal to clinical excellence in shaping the competitive image of private hospitals. Hospitals that allow outpatient queues to periodically swell will face the consequences of a progressive decline in annual visit volume due to a collapse in patient retention in the regional market.

To address the threat of time inefficiency, modern hospital management has adopted the Lean Healthcare philosophy integrated with the PDSA cycle. Lean Healthcare is a systematic approach to identifying and eliminating all forms of



wasteful activities that do not add value to patients, especially wasted waiting time.² The PDSA cycle, in its implementation, acts as an action research framework that facilitates agile and iterative testing of small-scale system modifications.³ Through the integration of both Lean Healthcare and PDSA methodologies, operational flow improvements are no longer based on subjective intuition, but rather rely on evidence-based improvement that is adaptive to the hospital's internal capacity.⁴

The empirical situation at PKU Sekapuk Hospital reflects a clear manifestation of traditional governance inefficiencies due to the limited managerial competency of 80% of clinical staff. Based on research findings,⁵ the CEP team's observations indicate that outpatient service lines are experiencing acute queues because patients with insurance (BPJS) and general patients are currently being served intermingled, without any separation at the registration counter. The complexity of administrative circulation is exacerbated by the fact that a digital prescription system has not yet been implemented, requiring patients to manually carry prescription papers from the polyclinic to the pharmacy. Although the physical layout of the waiting room is adequate, the lack of information system integration and separation of task flows leads to a random accumulation of prescription files during peak hours, lengthening bureaucratic processes and increasing patient waiting times for medication.

The impact of the conventional paper-based workflow has created an urgent need for system restructuring through community service programs. The efficiency quality target set out in the Key Performance Indicators (KPI), which requires waiting times for non-compounded prescriptions to meet the national standard of ≤ 30 minutes, will never be achieved without physical improvements to the service flow. Based on the Operational Excellence pillar adopted from the Asian Tiger Healthcare Camp curriculum and the technical guidelines of the *Ikatan Konsultan Kesehatan Indonesia* (Ikkesindo), this CEP program aims to assist frontline staff in overhauling manual service systems. The implementation of Lean Healthcare methods through the PDSA cycle is expected to eliminate outdated bureaucratic red tape and reposition PKU Sekapuk Hospital in Lamongan as a quality-conscious hospital.

MENTORING IMPLEMENTATION METHODS

Design and Mentoring Participants

This CEP program uses a participatory action research approach integrated with the Lean Healthcare operational management methodology.⁶ The physical intervention activity for the service flow was carried out for three months, effective from April to June 2026, taking place in the main service area (Registration Counter, Outpatient Polyclinic, and Pharmacy Installation) of PKU Sekapuk Hospital, Lamongan. Participants who were actively involved as implementers of the changes amounted to 25 core managers, with the focus of tactical strengthening delegated to

the Head of the Pharmacy Installation, Registration Counter Coordinator, Head of Nursing, and representatives of frontline administrative staff.

Stages of Implementing the PDSA Cycle

Restructuring of the conventional service system in the field is carried out sequentially through modification of the four quadrants of the standard PDSA cycle of Operational Excellence.⁷

Stage 1, planning (Plan) and waste mapping. The CEP team assisted the hospital in mapping the service value chain to visualize all patient movements and medical record documents from upstream to downstream. At this stage, critical bureaucratic nodes that trigger queue buildup were identified, namely the lack of a barrier separating patient segments at the front counter and passive waiting times created by the circulation of manual prescription sheets carried by patients themselves.

Stage 2, implementation (Do) of a trial physical flow change. Hospital management executed two radical, small-scale physical interventions in the service area. First, the registration counter was strictly separated into two independent lanes: the BPJS Insurance Special Counter and the General Patient Counter. Second, because digital prescriptions were not yet available, an Integrated Prescription Drop-Box system was implemented. Patients were no longer required to carry prescription papers manually to the pharmacy; instead, the prescription papers were collected by polyclinic nurses into a special box that was retrieved periodically every 10 minutes by the hospital's internal courier to the pharmacy depot.

Stage 3, evaluation (Study) of waiting time measurements. The CEP team, together with the unit heads, measured the duration of service delivery using a stopwatch time study method. The evaluation focused on measuring the average waiting time for non-compounded prescription drug services, from the time the prescription file is received by the pharmacy checker until the medication is delivered to the patient. The collected quantitative data was then tabulated to analyze the effectiveness of the reduction.

Stage 4, Standardization (Act) of the new policy. The service flow resulting from the physical modification that proved effective in reducing queues was locked into a permanent operational policy. The CEP team facilitated the drafting of a new Standard Operating Procedure (SOP) regarding separate registration procedures and internal courier prescription document circulation to be approved by the Director of PKU Sekapuk Hospital, Lamongan.

RESULTS AND DISCUSSION

Quantitative Impact of Lean Healthcare Implementation through PDSA Cycle

The physical restructuring of the service flow through the PDSA cycle significantly impacted the operational efficiency of outpatient care at PKU Sekapuk

Hospital. Time studies conducted before and after the intervention revealed a drastic reduction in waiting times, particularly in the registration area and pharmacy. A quantitative comparison of pre- and post-assistance service delivery durations is presented in Table 1.

Table 1. Comparative data on average waiting times for outpatient services

Service flow stages	Pre-intervention duration	Post-intervention duration	Time efficiency is reduced	Ministry of Health MSS Status
Registration counter.	35 minutes	12 minutes	23 minutes (65,7%)	Meet the standards,
Pharmacy depot (ready-made prescriptions).	75 minutes	25 minutes	50 minutes (66,7%)	Meet the standards (≤ 30 minutes)
Total time	110 minutes	37 minutes	73 minutes (66,3%)	Very efficient

Table 1 empirically demonstrates that restructuring workflows, even without the use of expensive digital technology, when designed around waste elimination, can significantly improve the operational performance of private healthcare facilities. The total time spent by patients was reduced by 73 minutes (66.3%), indicating that the hospital successfully restored psychological well-being in the waiting area.

Analysis and Discussion of Bottleneck Elimination

The success of the time reductions presented in Table 1 is analyzed based on two key physical interventions implemented during the PDSA cycle.

First, the separation of service flows (separation of BPJS and general counters). Prior to the CEP intervention, the mixing of patient segments at the registration counter was the primary driver of high wait time variability. The administrative characteristics of BPJS patients, who require verification of document eligibility (Referral Letter and Card), take 3 to 5 times longer than general patients. When these flows are mixed, a domino effect occurs, which is detrimental to general patients.⁸ By establishing a dedicated BPJS Insurance Counter and a General Patient *Jaminan Kesehatan Nasional*/JKN Counter during the Do phase, management successfully separated staff workloads. General counter staff were able to complete transactions quickly (in 12 minutes). BPJS counter staff could focus on validating insurance documents without interrupting other patient queues. This separation of lanes has been proven to reduce bureaucratic inefficiencies and increase initial patient satisfaction upon entering the hospital.

Second, the implementation of a Drop-Box system and internal pharmacy couriers. Under the old system, allowing patients to independently carry prescription papers from the polyclinic to the pharmacy resulted in disorganized queues. Patients often didn't hand in their prescriptions immediately (stopping in the restroom, cafeteria, or waiting room), making it impossible for pharmacists to predict the actual workload. When these prescriptions piled up at the depot counter, a bottleneck occurred, increasing the wait time for non-prepared medications to reach 75 minutes. This waste of movement was physically demanding for patients after their examination.⁹

The integrated Drop-Box system intervention broke the chain of inefficiency. The mechanism for collecting prescription papers by clinic nurses into a special box that is periodically distributed by internal couriers every 10 minutes, transforming the workflow in the pharmacy installation into a streamlined pull model. Pharmacists can record prescriptions early (even while patients are still walking from the clinic to the pharmacy waiting room). The wait time for finished medication preparation was successfully reduced to 25 minutes, meeting the KPI target and falling below the Ministry of Health's Minimum Service Standards threshold.¹⁰

The restructuring of conventional business processes at PKU Sekapuk Hospital successfully addressed the limited managerial capacity of 80% of clinical staff in the operational line by creating SOPs for clear, consistent assignment flows, and oriented towards eliminating non-value-added activities.

CONCLUSION

The application of the Lean Healthcare philosophy, including the four-quadrant PDSA cycle, has been empirically proven to successfully address long queues and bureaucratic red tape at PKU Sekapuk Hospital, Lamongan. This technical assistance significantly reduced outpatient waiting time without requiring large-scale digital technology investments. Two key physical interventions – separating registration channels specifically for BPJS (JKN) patients and general patients – and overhauling medical record circulation through a drop-box mechanism and internal pharmacy couriers – have proven effective in reducing operational bottlenecks. The quantitative impact of this program demonstrates a 66.3% reduction in total outpatient waiting time. Waiting time at the registration counter decreased to 12 minutes, and waiting time at the non-compounding pharmacy depot decreased dramatically to 25 minutes. The final outcome of the assistance met the MSS of the Ministry of Health of the Republic of Indonesia (i.e., ≤ 30 minutes) and also achieved the target of KPIs.

PROGRAM SUSTAINABILITY RECOMMENDATIONS

Reducing patient wait times has successfully boosted patient satisfaction on the front line. The already streamlined operational stability must be protected from the risk of macroeconomic leakage. To ensure the sustainability of the comprehensive

service program, a roadmap for further development has been formulated. First, considering that the majority of patients whose queues have been eased are in the insurance segment, the next service steps must focus on the hospital's downstream business. Assistance is needed regarding the integration of clinical quality management with financial control of healthcare facilities through standardizing the Clinical Pathway to reduce the number of pending/disputed BPJS claims. Second, the board of directors of PKU Sekapuk Hospital is advised to use the SOP for internal prescription drop-box couriers as a transitional bridge to the full implementation of the Digital Prescription Module in the existing *Sistem Manajemen Rumah Sakit* (SIMRS) in the future, to permanently secure time efficiencies.

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