



Original Article

Analysis of Factors Affecting Decline in Clinical Patient Visits at the Riau Provincial Health Office Laboratory

^{1*}Indriana Rista, ²Doni Jespisah, ³Sangap Daniel

^{1*}Master of Public Health Sciences Study Program, Hang Tuah University, Pekanbaru

²Academic Supervisor – Master of Public Health Science Study Program, Hang Tuah University Pekanbaru

³Field Supervisor – Health and Environmental Laboratory UPT of the Riau Provincial Health Office

E-mail Corresponding: indrianarista3@gmail.com

Article History:

Submit: December 2025

Accepted: May 2026

Keyword:

Clinical Services,
Service Quality,
Patient Visits,
Health Laboratories,
Patient Satisfaction.



© 2026 Jambi Medical Journal
Published by Faculty of Medicine and Health Science Universitas Jambi.
This is an open access article under the CC BY-NC-SA license
<https://creativecommons.org/licenses/by-nc-sa/4.0/>

ABSTRACT

Background: The decline in clinical patient visits poses a strategic challenge in improving the quality of health laboratory services. Service data from the Health and Environmental Laboratory Technical Implementation Unit of the Riau Provincial Health Office indicates a 43.5% decline in clinical patient visits by 2024, despite an increase in environmental service visits. This study aims to analyze the factors influencing the decline in clinical patient visits.

Method: The research used a qualitative approach through in-depth interviews, observation, and document review. Primary informants included the Head of the Clinical Services Section and Doctors, while supporting informants included Registration Officers and Clinical Patients. Data analysis was conducted using triangulation of sources, methods, and data to ensure the validity of the results.

Result: The decline in clinical patient visits was influenced by a lack of promotion of laboratory services, low communication skills of frontline staff in providing excellent service, uncomfortable waiting rooms, limited digital service facilities, including the lack of an electronic medical record system, and weak referral networks with other healthcare facilities.

Conclusion: Recommended improvement efforts include enhancing clinical service human resource competencies, optimizing service promotion, improving waiting room facilities, developing digital service systems, and strengthening referral networks to restore clinical patient visit numbers and increase community satisfaction with regional laboratory services.

INTRODUCTION

Health development is a systematic and sustainable effort undertaken to improve the overall health of the community. Health laboratories are one of the medical support

facilities that play an important role in enforcing diagnosis, monitoring therapy, and determining public health status. Clinical patient visits as laboratory service users are one of the indicators of service performance

and the quality of health services provided. The higher the level of clinical patient visits, the greater the opportunity for laboratories to contribute to improving public health standards and optimizing evidence-based health services. Therefore, improving the quality of health services is one of the main focuses in efforts to meet the needs and expectations of the community for fast, accurate and quality services¹.

At the Health and Environment Laboratory Unit of the Riau Provincial Health Office, there has been a downward trend in clinical patient visits over the past two years. Service data shows a 43.5% decrease in clinical patient visits in 2024, although environmental service visits have increased in the same period. This condition shows the inequality of service acceptance and the instability of the sustainability of clinical services as one of the strategic services of regional health laboratories. If left untreated, the decline in clinical patient visits can have an impact on low optimization of health services, a decrease in public trust, and a limited contribution of laboratories in supporting the health service system at the provincial level^{2,3}.

The USG method is used to determine problem priority. Urgency, Seriousness, Growth (USG) is a tool for prioritizing issues that must be resolved. This method involves determining the level of urgency, seriousness, and development of an issue on a scale of 1-5 or 1-10. The issue with the highest total score is the priority issue⁴.

Various factors are suspected to affect the decrease in clinical patient visits to health laboratory facilities. Based on the concept of service quality, service quality is influenced by the dimensions of reliability, responsiveness, assurance, empathy, and tangibles. These factors are reflected in the aspects of service practice, human resource competence, facilities, referral networks, and service promotion strategies. The low utilization of digital information facilities, frontliner officer communication, and waiting room facilities has the potential to affect the

patient experience and perception of service quality⁵.

However, until now there have not been many studies that have specifically analyzed the causes of the decline in clinical patient visits at the Regional Health Laboratory at the provincial level. Therefore, this study was conducted to identify the factors that affect the decrease in clinical patient visits at the Health and Environment Laboratory Unit of the Riau Provincial Health Office as the basis for the formulation of a strategy to improve the quality of clinical services. The results of this study are expected to be input for policy makers in designing continuous improvement interventions to increase the number of clinical patient visits and public satisfaction with health laboratory services. Based on this description, this study aims to analyze the factors influencing the decline in clinical patient visits at the Health and Environmental Laboratory Unit of the Riau Provincial Health Office in 2025.

RESEARCH METHODS

This study uses a qualitative approach with a descriptive study design that aims to explore in depth the factors that affect the decrease in clinical patient visits at the Health and Environment Laboratory UPT of the Riau Provincial Health Office. A qualitative approach was chosen to gain a comprehensive understanding of experiences, perceptions, and service dynamics that affect the utilization of laboratory services by clinical patients.

The study was conducted at the Health and Environmental Laboratory Unit of the Riau Provincial Health Office in October 2025, covering all clinical services and units related to the patient care process. Research informants were divided into primary and secondary informants, selected using a purposive sampling technique based on the suitability and sufficiency of information. Primary informants included the Head of the Clinical Services Section and doctors, while secondary informants consisted of

registration officers and clinical patients. The criteria for informants were willingness to be interviewed, good communication skills, understanding of the research problem, and the ability to provide relevant information.

Data Collection in this study was conducted through three main stages: in-depth interviews, observation, and document review. Interviews were conducted using a structured interview guide to obtain information regarding the service process, obstacles, and factors influencing patient visits. Direct observation of the clinical service flow, interactions between healthcare workers and patients, and facility conditions were also conducted. Secondary data was also obtained through official documents such as patient visit reports and institutional profiles to complement the primary data. The secondary data were also collected through relevant reading materials.

Data Analysis

The analysis of data was conducted through a thematic analysis approach, encompassing phases of data condensation, data display, and inference formulation. Thematic codes were generated from interview findings, observational data, and documentary analysis to pinpoint the primary

elements affecting the reduction in clinical patient attendance.

Data Validity Test

Validity tests are carried out through source triangulation, method triangulation, and data triangulation to ensure the validity and reliability of research findings. Clarification of the results of the interview was carried out to key informants to avoid interpretation bias.

RESULT AND DISCUSSION

Result

Based on interviews and observations, several health problems were found based on the analysis of data on the services of the Health and Environment Laboratory UPT, there was a decrease in clinical patient visits in 2024, on the contrary, environmental services have increased, as well as the administrative and reporting system that is still carried out manually, in the focus of laboratory program planning is to improve the quality and scope of health examination services, sometimes the availability of part reagents are often exhausted due to limited budgets, and also limited laboratory human resources in clinical services.

Table 1. Problem Prioritization Matrix at the Health and Environmental Laboratory Unit of the Riau Provincial Health Office

Problem	(U) <i>Urgency</i>	(S) <i>Seriousness</i>	(G) <i>Growth</i>	Sum	Rangking
A significant decrease in the number of clinical patient visits was 43.5%.	5	5	4	14	I
The recording system is still manual	2	3	5	10	II
Availability Some reagents often run out	3	4	2	9	III
Limitations of laboratory human resources in clinical services	2	2	2	6	IV

The problem priority process is carried out by weighting, on each problem by paying attention to the aspects of Urgency (U),

Serious (S), and Growth (G) or ultrasound methods, the priority of the problem is obtained, namely "A significant decrease in

capacity is limited, it is not equipped with facilities that make patients comfortable, and there is no front desk in charge of welcoming and directing patients⁸.

Limitations of digital-based service systems. Service facilities have not been integrated into the digital system, including the absence of electronic medical records and technology-based registration systems. This condition causes the service process to be slow and causes queues⁹.

Weak referral networks with other health facilities Cooperation with health centers, clinics, and hospitals has not been built optimally so that the flow of referrals of clinical patients to laboratories has not gone well¹⁰.

Other supporting findings show that there are limitations and delays in the procurement of tools and reagents in several periods so that clinical examinations cannot be carried out optimally and have an impact on the inhibition of service activities and maintenance of facilities¹¹.



Figure 1. Fish boneAnalysis
Source: Analysis

DISCUSSION

The findings indicate that a single factor does not cause the decline in clinical patient visits, but by a combination of interrelated service factors. The decline in clinical patient visits at the Riau Province Health and Environmental Laboratory Unit (UPT) is influenced by various interrelated factors, namely human resources (human), methods (methods), facilities (machines), funding (money), and the environment. Suboptimal health service promotion is an initial barrier to public access to laboratory services, as evidenced by low patient knowledge of available clinical services. The lack of a public communication strategy results in clinical services not being widely recognized by the public as a trusted facility. Regarding methods, the lack of promotion and a limited referral network led to low service utilization. This indicates that without a good communication strategy, available services will not be optimally recognized by the public^{12,13}.

In terms of facilities, the use of manual systems slows down service delivery and reduces efficiency. According to the authors, digitizing services is essential to improve the speed and accuracy of service¹⁴.

Meanwhile, limited budget (money) and service environment conditions, such as uncomfortable waiting rooms, also influence patient perceptions¹⁵. An unsupportive physical environment can reduce repeat visits. Unresponsive service can create a negative experience that influences a patient's decision not to return to the service. This aligns with the service quality theory (SERVQUAL), which emphasizes responsiveness and empathy as determinants of user satisfaction¹⁶⁻¹⁸.

Uncomfortable waiting room facilities, such as inadequate lighting and other amenities, also contribute to low perceived service quality¹⁹. The physical service environment (tangibles) significantly determines patient comfort and satisfaction, especially in healthcare facilities with tiered service flows, such as clinical laboratories²⁰.

Limited digital facilities, such as the absence of an electronic medical record and registration system, and the lack of use of electronic media for delivering test results, can slow down and inefficient service processes²¹⁻²². Service digitization has been shown to positively correlate with workflow effectiveness and patient satisfaction in modern healthcare²³⁻²⁴.

Limitations and delays in the procurement of equipment and reagents in some periods due to budget constraints prevent optimal clinical examinations from being conducted, impacting service activities and facility maintenance²⁵. Finally, a weak referral network between healthcare facilities reduces the potential for patient visits²⁶. A strong referral system can increase visit volume and strengthen the role of laboratories in the regional health system²⁷. Overall, the results of this study confirm that improving the quality of clinical services must be achieved through a holistic approach, including specialized human resource training for excellent service, complementary facilities, service digitalization, service promotion, early, measurable, and realistic budget planning in line with program priorities, and strengthening referral networks²⁸. Integrated interventions are predicted to increase the number of clinical patient visits and community satisfaction with regional health laboratory services²⁹⁻³⁰.

CONCLUSION

The decline in clinical patient visits at the Health and Environment Laboratory Unit of the Riau Provincial Health Office is influenced by various interrelated factors, including the lack of promotion of clinical services, the limitation of the competence of excellent service of registration officers, the inconvenience of waiting room facilities, the lack of optimal digitization of services, and the weak referral network with other health facilities. Delays in the procurement of tools and reagents or budgets also have an impact on the cessation of some types of

examinations in certain periods, reducing patients' interest in utilizing clinical services. Analysis of the root causes of the problem was conducted using a fishbone diagram approach, grouping factors into the categories of Man, Money, Method, Machine, and Environment. The analysis showed that the root cause did not stem from a single aspect, but rather a combination of various factors contributing to the decline in patient visits.

Alternative solutions focused on improving clinical staff's knowledge regarding excellent service, developing better budgetary planning, developing referral SOPs and expanding referral networks, developing an electronic medical record (EME) system integrated with the National Health Insurance (BPJS), and improving the waiting room for greater patient comfort.

The recommended interventions, outlined in the Plan of Action (POA), include staff training to improve competency, more planned budget allocation, the development and implementation of patient referral procedures, and enhanced health service promotion. The development of an EMR-based recording system, as well as improvements to waiting room facilities and comfort, are also recommended.

Improving the quality of clinical services must be carried out comprehensively and sustainably so that patient visits can increase again and strengthen the role of laboratories in supporting public health services.

SUGGESTION

Efforts to improve service quality at the Health and Environmental Laboratory

Unit (UPT) of the Riau Provincial Health Office need to be comprehensive and sustainable. Improving the competency of clinical staff is a key priority through regular excellent service training to optimize communication skills, professionalism, and service quality. Furthermore, budget planning needs to be realistic from the outset to avoid delays in facility procurement and service operations. Optimizing service promotion also needs to be enhanced by utilizing digital media and widely publishing service information, accompanied by expanding referral networks and outreach to other health facilities.

Furthermore, improvements to waiting room facilities and service support facilities are necessary to create a comfortable environment, including streamlining service flows and deploying responsive front desk staff. Developing digital-based service systems such as online registration and electronic medical records (RME) is also crucial to increase efficiency and speed of service. Furthermore, strengthening monitoring and evaluation mechanisms on a regular basis is necessary to assess service effectiveness, identify emerging obstacles, and formulate sustainable improvements. These steps are expected to improve service quality and impact patient satisfaction and visits..

ACKNOWLEDGMENTS

The researcher would like to thank the Riau Provincial Health and Environment Laboratory and all research informants who have provided support and access during the data collection process.

REFERENCE

1. Arisanti D, Rianto MR, Harimuswarah MR. Analysis of the Effect of Clinical Laboratory Service Quality on Outpatient Satisfaction at Labuang Baji Makassar Hospital in 2019. *PROMOTIF Journal of Public Health*. 2020; 10(1):83–94. doi: <https://doi.org/10.31934/promotif.v10i1.1170>
2. Chandrika FDA, Sampetoding EAM, Pongtambing YS. A Systematic Review of the Effectiveness and Implications of the Implementation of the Health Referral Information System

- (SISRUTE) in Indonesia. *HealthSense J Public Health Perspect.* 2024; 1(1):29–37. doi: <https://doi.org/10.58803/healthsense.v1i1.20>
3. Handayani L. *Quality of Health Services: Theory and Application of the SERVQUAL Method.* Yogyakarta: Deepublish; 2021.
 4. Hazairin L, Berliana N, Parman HP. Analysis of Service Quality and Customer Satisfaction at the UPTD Environmental Laboratory of the Jambi Provincial Environment Agency in 2020. *J Kemmas Jambi.* 2021; 5(1):10–20. doi: <https://doi.org/10.22437/jkmj.v5i1.17638>
 5. Hidayat AW, Setianingsih LE, Kristina HE. Workshop on Strategies for Improving the Quality of Laboratory Services at Pratama Sukaraya Clinic. *J Servant to Masy.* 2025; 8(11):5748–5758.
 6. Ministry of Health of the Republic of Indonesia. Regulation of the Minister of Health of the Republic of Indonesia Number 14 of 2021 concerning Standards for Health Laboratory Service Activities. Jakarta: Ministry of Health of the Republic of Indonesia; 2021.
 7. Ministry of Health of the Republic of Indonesia. Guidelines for Planning and Budgeting for Performance-Based Health Services. Jakarta: Ministry of Health of the Republic of Indonesia; 2022.
 8. Ministry of Health of the Republic of Indonesia. Health Human Resource Development Policy 2023–2027. Jakarta: Ministry of Health of the Republic of Indonesia; 2023.
 9. Ministry of Health of the Republic of Indonesia. The 2023 Health Budget Focuses on Improving the Quality of Health Services. Jakarta: Ministry of Health of the Republic of Indonesia; 2022.
 10. Ministry of Health of the Republic of Indonesia. Transformation of Indonesia's Health System. Jakarta: Ministry of Health of the Republic of Indonesia; 2023.
 11. Larasati PCEI, Ulandari LPS. Barrier of Referral–Back in Secondary Health Facilities: Provider and Patient Perspectives. *Indones J Health Adm.* 2024; 12(2):250–257. doi: <https://doi.org/10.20473/jaki.v12i2.2024.250-257>
 12. Pamungkas G, Aulia N. Analysis of Health Human Resources Competency in Improving Service Quality at PM Clinics. *J GICI.* 2025; 17(1):82–91. doi: <https://doi.org/10.36929/gici.v17i1.1522>
 13. Riau Governor's Regulation Number 46 of 2022 concerning Amendments to Governor's Regulation Number 64 of 2017 concerning the Establishment of Technical Implementation Units at the Riau Provincial Health Office. Pekanbaru: Riau Provincial Government; 2022.
 14. Permenkes. Regulation of the Minister of Health Number 27 of 2023 concerning the Organization and Work Procedures of the Environmental Health Laboratory Center. Jakarta: Ministry of Health of the Republic of Indonesia; 2023.
 15. Pramudito R, Handayani N. The Effect of Budget Planning and Internal Supervision on the Effectiveness of Public Services in the Health Sector. *J Adm Indonesian Public Policy.* 2024; 9(1):45–56. doi: <https://doi.org/10.54373/jakpi.v9i1.127>
 16. Pratiwi DR. *Evaluation of Service Quality with SERVQUAL.* Jakarta: Kencana; 2022.
 17. Profile of the Health and Environment Laboratory of the Riau Provincial Health Office. Pekanbaru: UPT Labkesling of the Riau Provincial Health Office; 2024.
 18. Rahayu E, Supriatin T. The Effect of Physical Evidence and Officer Empathy on Patient Satisfaction in Regional Health Laboratories. *J Health of Masy Andalas.* 2024; 18(2):123–133. doi: <https://doi.org/10.25077/jkma.18.2.123-133.2024>
 19. Sari L, Nuraini H. Development of Health Human Resources Competency through Continuous Training in Government Agencies. *J Management of Indonesian Health Services.* 2023; 7(2):89–100. doi: <https://doi.org/10.31934/jmpki.v7i2.2110>
 20. Siswati S, Syafrawati, Khairunnisa M. Assessment of Electronic Medical Record Implementation Using HOT-FIT Method at Public Health Centers in Padang City. *J Community Health.* 2025; 11(1):64–73. doi: <https://doi.org/10.25311/keskom.v11i1.2680>
 21. A Taste of RH. *Health Service Quality Management.* Jakarta: Mitra Wacana Media; 2019.
 22. Sofian M. *Public Service Management in the Health Sector.* Bandung: Refika Aditama; 2020.

23. Sutha DW, Christine L, Masyfufah L, Faida EW, Wahyuni T, Novianti S, Syalfina AD. The Impact of Use of Electronic Medical Records on the Quality of Health Services and Patient Safety: Review. *Int J Health Inform Syst.* 2025; 3(1):1–11. doi: <https://doi.org/10.56792/ijhis.v3i1.353>
24. Widodo A, Nurhayati M. The Effectiveness of SOPs and Service Promotion on Increasing Laboratory Patient Visits. *J Adm Kesehatan Nusantara.* 2023; 12(3):77–86. doi: <https://doi.org/10.36823/jakn.v12i3.194>
25. Widyaningrum E. *Quality Management in Health Services.* Surabaya: Airlangga University Press; 2020.
26. Wulandari D, Putra A, Safitri R. Implementation of Digital Laboratory Information System in Improving Service Efficiency. *J Information Health Technology.* 2024; 6(1):55–67. doi: <https://doi.org/10.56379/jtki.v6i1.221>
27. Yuliana L. *Quality-Based Health Service Management Strategy.* Malang: Intrans Publishing; 2021.
28. Alwiyah R, Hasanah A, Anwar R. Digitalization of Laboratory Information System to Improve Patient Flow and Service Productivity in Clinical Laboratories. *J Clin Lab Sci Asia.* 2023; 5(2):112–121. doi: <https://doi.org/10.55945/jclsa.2023.112>
29. Thomas N, Kalbuana N, Suherman D. Analysis of Patient Satisfaction and Service Quality in Public Health Laboratory Services Using SERVQUAL. *Int J Public Health Sci.* 2022; 11(4):1490–1498. doi: <https://doi.org/10.11591/ijphs.v11i4.21963>
30. Mustafa S, Herman A, Cahyadi R. Digital Transformation and Health Service Accessibility: Impacts of Electronic Medical Records Adoption in Provincial Health Facilities. *J Health Syst Policy.* 2025; 4(1):44–54. doi: <https://doi.org/10.53127/jhsp.v4i1.507>