

Website-Based Patient Complaint Information System at Hidayah General Hospital, Boyolali

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Abstract: Background: This study aimed to develop a web-based patient complaint information system at Hidayah General Hospital, Boyolali, to support the structured submission, recording, monitoring, and follow-up of patient complaints. **Design/methodology/approach:** This study employed a descriptive method with a cross-sectional approach. Data were collected through observation, interviews, and document review involving Public Relations and Training officers. The system was developed using the Systems Development Life Cycle with the Waterfall model and implemented using PHP and MySQL. **Findings:** The developed system provides complaint submission, automatic complaint-ticket generation, complaint-status tracking, officer responses and follow-up, satisfaction surveys, complaint and satisfaction statistics, master-data management, user-access management, and report generation. **Practical implications:** The system can assist hospital staff in managing complaint data systematically and provide complainants with information about the progress of their complaints. **Limitations:** This study did not quantitatively evaluate changes in response time, complaint-resolution rates, usability, or user satisfaction before and after implementation. **Originality/value:** The study contributes a hospital-specific complaint management system equipped with a tracking feature that enables complainants to monitor the status and follow-up of their complaints.

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Introduction

In today's digital era, public expectations for the quality of healthcare services are increasingly high. Hospitals, as healthcare institutions, are required to provide not only high-quality medical services but also excellent non-medical services (service excellence) to enhance patient satisfaction and the hospital's image in the public eye (Nuraeni et al., 2023). Excellent service is not only related to clinical quality but also encompasses the hospital's ability to receive, handle, and follow up on patient complaints and feedback effectively and efficiently. Complaints are a crucial part of service because they provide input for hospitals in understanding patient issues and can also serve as a basis for service improvements.

The hospital's obligation to provide safe and quality services to the public also relates to providing procedures for patients to submit feedback or complaints regarding the quality of service received (Regulation of the Minister of Health of the Republic of Indonesia, 2018). Hospitals are also required to follow up on every patient complaint and suggestion as part of efforts to improve service quality (Regulation of the Minister of Health of the Republic of Indonesia, 2017), as well as provide effective and well-documented communication and complaint channels as part of the Hospital Minimum Service Standards (SPM) (Regulation of the Minister of Health of the Republic of Indonesia, 2019). Thus, complaint management is not only a means for patients to express dissatisfaction, but also part of the service process that needs to be managed in a structured manner so that complaint information can be used to improve the quality of hospital services.

Problems in complaint management are still found in both in-person and written complaints. In-person complaints are often hampered by manual recording, while written complaints take longer and carry the risk of data loss. This condition can make the complaint handling process less effective and efficient, potentially impacting the quality of service and hospital accreditation. Research by Wensen et al. (2024) in one of the hospitals in Purwokerto showed that the average daily complaint reached three per unit of the 25 units in the hospital, with a resolution time of up to one week. This condition indicates the need for a complaint system that can support a faster and more efficient complaint handling process.

Problems with complaint management were also identified at Hidayah General Hospital in Boyolali. Patient complaints are currently handled directly by staff, via WhatsApp messages, and Google Reviews. Despite utilizing messaging platforms, incoming complaint data is often mixed with other general service information messages, resulting in suboptimal ongoing complaint handling and analysis. This situation results in complaints potentially being missed, lost, or requiring longer processing times. Furthermore, the current complaint handling process is hierarchical, starting with unit or ward staff, then progressing to the head of the facility, department head, and ultimately to the public relations department if the issue remains unresolved. This situation necessitates information management that can support more structured complaint recording and monitoring.

These issues highlight the need to develop a patient complaint information system that integrates the submission, recording, handling, and monitoring of complaints. Rayhan's (2025) previous research on a web-based public complaint application with a complaint status tracking system at the Ministry of Manpower in Jakarta resulted in a system that facilitates public outreach. Meanwhile, Wensen, Setyawati, and Widjayanti (2024) developed a website-based hospital patient complaint system using a prototype method to optimize patient complaint management and improve service quality. Resky and Atika's (2019) research also developed a web-based patient complaint information system using web engineering methods at the Keramasan Community Health Center in Palembang City to facilitate patient complaints without having to visit the community health center and improve staff performance and service in handling patient complaints. This study has similarities with the aforementioned research in the development of a web-based complaint system, but has differences in the research location, research method, system development method, and the existence of a tracking menu that makes it easier for patients to monitor the status and follow-up of complaints. Based on these problems, this study aims to build a website-based patient complaint information system at Hidayah Boyolali General Hospital, with the specific objectives of describing the ongoing patient complaint handling flow, designing a website-based patient complaint information system, and building a website-based patient complaint information system. This research is important because it is expected to help accelerate the response to complaint handling, support more structured complaint data management, and support improving the quality of hospital services and patient satisfaction. The novelty of the research lies in the development of a website-based patient complaint information system at Hidayah Boyolali General Hospital with a

qualitative descriptive approach research method and system development using SDLC with a Waterfall model, and equipped with a tracking menu that allows complainants to monitor the extent to which their complaints have been followed up.

Research Methods

This study employed a descriptive method with a cross-sectional approach. Descriptive methods are used to describe or depict phenomena that occur, while cross-sectional approaches are used by conducting observations and collecting data at a specific point in time (Notoatmodjo, 2018). In this study, this method was used to describe the ongoing patient complaint process at Hidayah General Hospital, Boyolali, and to plan and analyze the patient complaint information system to be designed. Data collection was conducted through observation, interviews, and document review to obtain information regarding the patient complaint handling process, complaint resolution guidelines, and standard operating procedures (SOP) for resolving complaints, conflicts, or differences of opinion.

The research was conducted at Hidayah General Hospital in Boyolali, specifically in the Public Relations and Training department. The research location is on Jl. Searah, Dusun III, Kragilan, Mojosongo District, Boyolali Regency, Central Java. The research was conducted from January to June 2026, with stages including a preliminary study, data collection and analysis, system design, and system testing.

Research instruments are tools used to obtain data related to the observed phenomenon. According to Sugiyono (2019), research instruments can include interview guidelines, observation guidelines, and documentation. In this study, the instruments used were observation guidelines and interview guidelines. The observation guidelines were used to obtain information regarding the ongoing patient complaint system at Hidayah General Hospital, Boyolali. The interview guidelines were used to obtain information through questions and answers with Public Relations and Training officers regarding the patient complaint process, complaint handling flow, and SOP for handling patient complaints.

Data collection techniques consisted of observation, interviews, and document review. Observations were conducted by observing and understanding the patient complaint process and its handling process. Interviews were conducted with Public Relations and Training officers at Hidayah General Hospital, Boyolali to obtain information on the current complaint system, the complaint handling process, and recommendations for developing a patient complaint information system. Primary data was obtained through direct observation and interviews, while secondary data included the patient complaint handling process, complaint resolution guidelines, and SOPs for resolving patient complaints (Sutikno & Hadisaputra, 2020).

The data analysis in this study used descriptive analysis. The collected and processed data were then described and illustrated based on the conditions found in the field. The results of this analysis were used to understand the ongoing patient complaints process and served as the basis for designing a website-based patient complaints information system. The analysis was conducted by outlining field conditions and analyzing the findings to support the design of a system that could assist hospital operations (Notoatmodjo, 2018).

This study did not use a population and sample in the form of quantitative calculations because it employed a descriptive method with a cross-sectional approach. The research subjects were Public Relations officers who handled patient complaints and training officers at Hidayah General Hospital, Boyolali. These subjects served as sources of information regarding the ongoing complaint process and handling of patient complaints. According to Sutikno and Hadisaputra (2020), subjects are data derived from primary data sources that serve as sources of information for researchers.

The research objects are the patient complaint handling process, complaint resolution guidelines, and standard operating procedures (SOP) for handling patient complaints at Hidayah General Hospital, Boyolali. The selection of subjects and objects is tailored to the research objectives, namely to describe the current complaint handling process, design a website-based patient complaint information system, and build a website-based patient complaint information system.

The research procedure began with a preliminary study to identify the current state of patient complaint management at Hidayah General Hospital in Boyolali. At this stage, observations and interviews were conducted to obtain primary data regarding the complaint process and the patient complaint handling process. Next, the researchers collected secondary data in the form of the patient complaint handling process, complaint resolution guidelines, and standard operating procedures (SOPs).

The obtained data were then analyzed descriptively to determine the needs of a website-based patient complaint information system.

The system was developed using the Systems Development Life Cycle (SDLC) method with the Waterfall model. According to Indriyani et al. (2019), SDLC is a method used to develop a system through systematic stages. The first stage is planning, which involves identifying problems and system development objectives. In this study, this stage was carried out by identifying complaint processes that still use WhatsApp, Google Review, and direct submission to officers. The second stage is analysis, which involves analyzing the existing complaint system to systematically map the complaint handling process.

The third stage is design, which involves designing the requirements specifications for a website-based patient complaint information system as the basis for the system design. The fourth stage is implementation, which involves implementing the analyzed and designed system and then testing its functionality and usability. The fifth stage is testing, which involves conducting functional system tests with users to determine whether the system is running optimally and to obtain suggestions and feedback. The final stage is maintenance, which involves maintaining and checking the system to prevent errors and making necessary improvements.

A website-based patient complaints information system was then built using the PHP programming language and a MySQL database. The system development was aimed at supporting a more structured process for submitting and managing patient complaints, tailored to the needs of Hidayah General Hospital, Boyolali.

Results and Discussion

System Implementation

1. Implementation of Complaint System

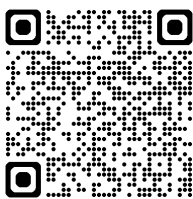


Figure 1. QR-Code

The complainant scans the code above with a mobile phone or smartphone, and is then directed to enter the complaint system.

A. Home Complaint System

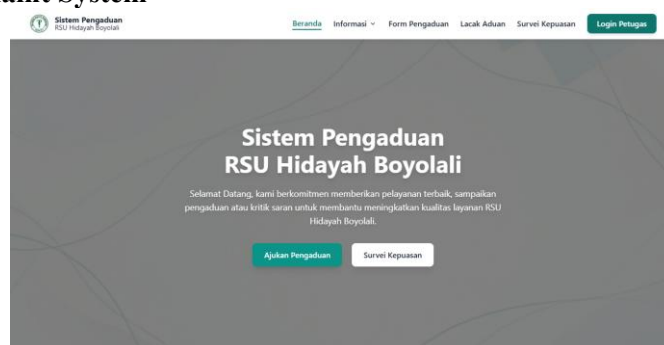


Figure 2. Complaint System Home

The homepage is the first page a complainant accesses. It's designed for ease of use on both a computer and a smartphone. The system displays a welcome message and provides two access buttons for complainants to directly file a complaint or complete a satisfaction survey.

B. Complaint System Information

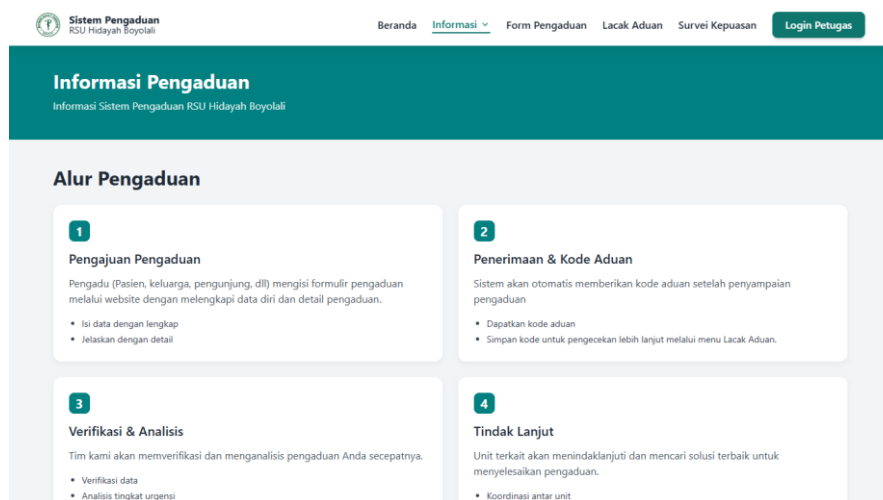


Figure 3. Complaint Flow Menu Information

In the Complaint Flow menu, there is information regarding the Complaint Flow, starting from submitting a complaint, receiving and providing a complaint code, verification and analysis, follow-up, and resolution.

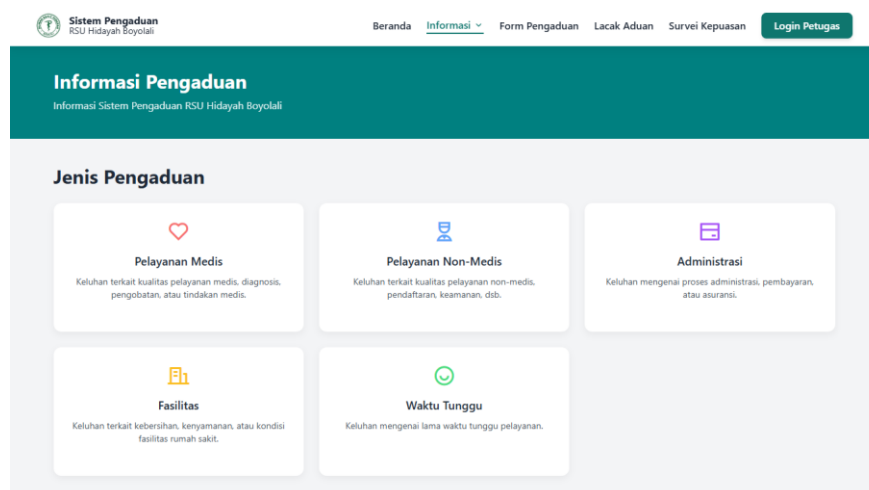


Figure 4. Complaint Type Menu Information

Next, there is information on the types of complaints, there are five types of complaints, namely medical services, non-medical services, administration, facilities, and waiting times.

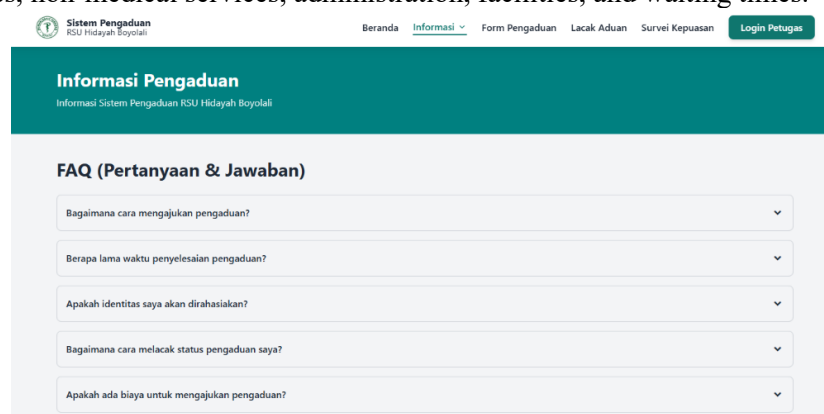


Figure 5. FAQ Menu Information (questions and answers)

Next, there is information about FAQ (questions and answers), there are several questions and answers regarding how to submit and other questions.

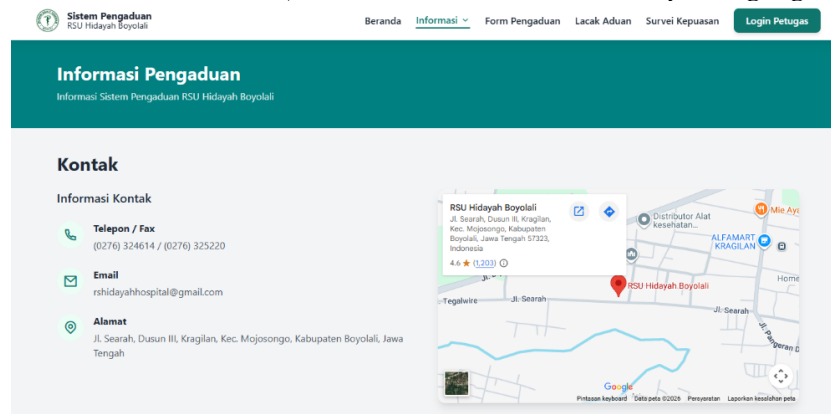


Figure 6. Contact Menu Information

Next, there is information for hospital contacts, including brief information starting from telephone/fax number, email, and address.

C. Complaint Form

Figure 7. Complainant Data Input Form

The first step requires the complainant to fill in their personal details, including their name, telephone/WhatsApp number, and address. If they do not wish to provide personal details, they can select the "Keep My Identity Secret" option for privacy.

Figure 8. Complaint Data Input Form

The second step is continued by selecting and filling in the complaint data which includes the Type of Complaint, Complaint Date (automatic), and Complaint Details, the complaint details here allow the complainant to express their thoughts about the hospital.

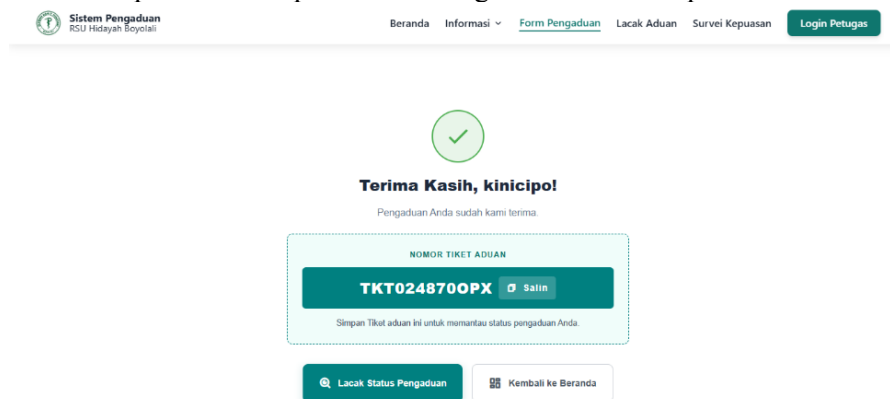


Figure 9. Complaint Ticket Menu

Once all data is completed and sent, the system will automatically provide a complaint ticket complete with a copy button, which can be used in the Track Complaint menu.

D. Complaint Tracking Menu

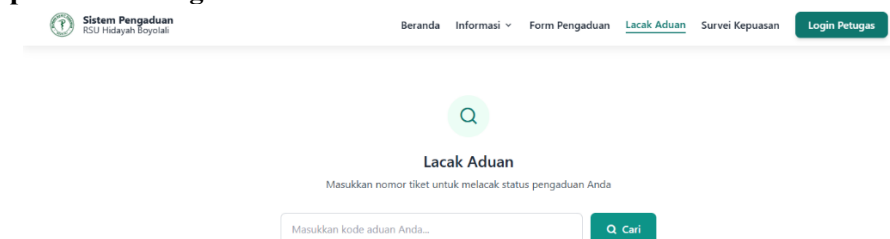


Figure 10. Complaint Tracking Menu

The complainant types the complaint code that has been obtained, after typing the complaint code, the complainant then clicks the search button.

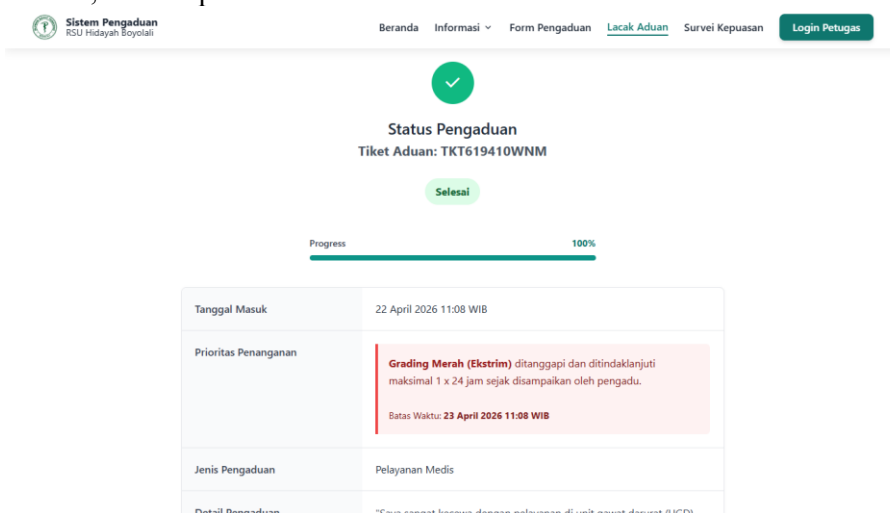


Figure 11. Complaint Tracking (Response) Menu

After submitting a complaint ticket, a progress report will appear, such as "Waiting," "In Process," or "Completed." The complainant will also receive information including the date, complaint type, complaint details, and the officer's response.

E. Satisfaction Survey Menu

Figure 12. Satisfaction Survey Menu

This satisfaction survey form covers Medical Services, Non-Medical Services, Administration, Facilities, and Waiting Time. To make it easier to complete, it's made more engaging by using emoji-based ratings that display five levels of satisfaction: Very Dissatisfied, Dissatisfied, Fair, Satisfied, and Very Satisfied.

2. Implementation of the Officer System

The system starts with the officer opening the available browser application, then typing the link <https://pengaduan.co-id.id> in the search field, and log in the officer.

A. Officer Login Menu

Figure 13. Officer Login Menu

Officers are required to enter the provided username and password. A show/hide password feature is available to minimize typing errors. A warning appears if the username or password is entered incorrectly.

B. Officer Home

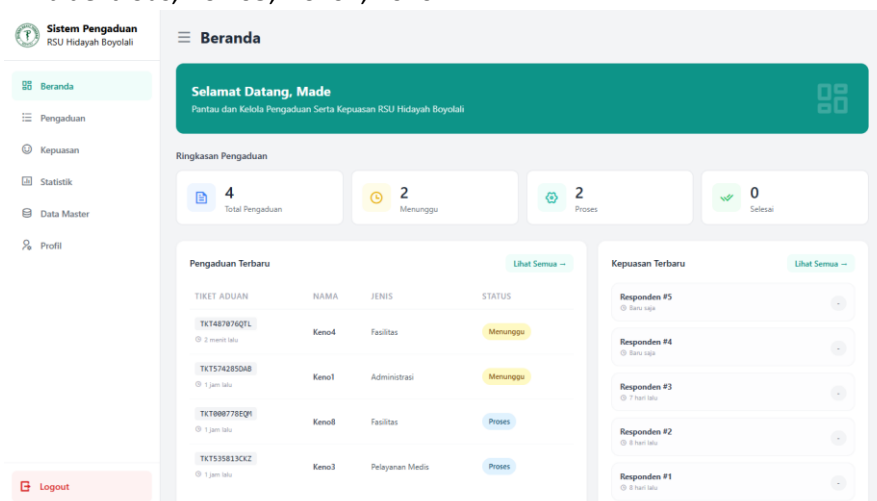


Figure 14. Officer Home

In addition to information about the latest complaints and satisfaction surveys, there is also brief information about the total number of complaints, the number of complaints pending, the number of complaints being processed, and the number of complaints that have been resolved.

C. Complaint Management

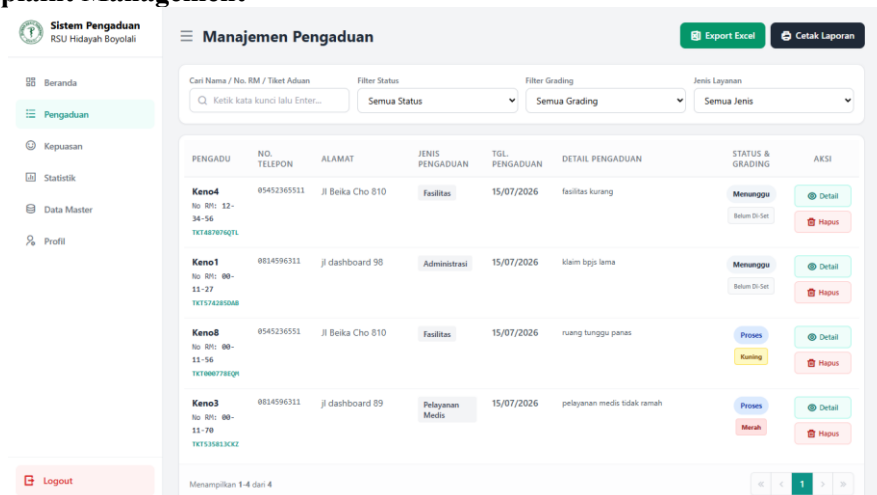


Figure 15. Complaint Management

This system features a search feature for Complaint Names and Codes, as well as data filters based on service type and follow-up status. A supporting menu includes a reporting feature that allows data to be downloaded in Excel or printed in PDF format.

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RUMAH SAKIT UMUM



HIDAYAH

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LAPORAN MANAJEMEN PENGADUAN

No	Data Pengadu	Jenis Pengaduan	Tgl. Pengaduan	Detail Pengaduan	Status & Grading
1	Keno4 No RM: 12-34-56 Telp: 05452365511 Jl Beika Cho 810	Fasilitas	15/07/2026	fasilitas kurang	MENUNGGU [Belum Di-Set]

Boyolali, 15/07/2026
Mengetahui,

Figure 16. Complaint Management Report

Print Complaint Management reports here can be filtered according to the desired service type, for example, print complaint reports based on medical services, the first step is to filter first to the medical service options, then print the report.

Figure 17. Details and Responses Menu

Furthermore, there is a detail and response menu that functions to display the overall complaint details, officers can update the complaint status which includes Waiting, Processing, Completed, as well as features to provide responses and follow-ups to complaints that have been submitted, for supporters it is equipped with Excel export and PDF Report Printing.



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LAPORAN MANAJEMEN TANGGAPAN

Nama : Keno4 No. RM : 12-34-56 No. Telepon : 05452365511 Alamat : Jl Beika Cho 810 Tiket Aduan : TKT487076QTL	Tgl. Pengaduan : 15 Juli 2026 19:00 Jenis Pengaduan : Fasilitas Grading Risiko : Belum ditentukan Batas Penyelesaian : - Status : Menunggu
--	---

Detail Pengaduan / Masukan	Tanggapan / Tindak Lanjut
fasilitas kurang	Belum ada tanggapan/tindak lanjut dari petugas.

Boyolali, 15/07/2026
Mengetahui,

Figure 18. Response Management Report

Print Detail and Response report here to produce a response management report, which contains complete complainant information in the form of Name, Telephone Number, Address, Complaint Ticket, Complaint Type and Complaint Date, then complaint details, and response.

D. Satisfaction Management

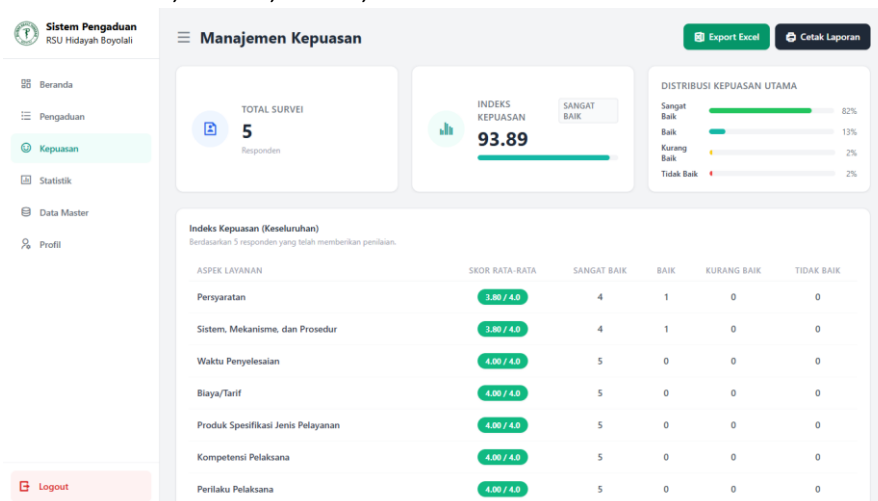


Figure 19. Satisfaction Management

At the top of the page there is a summary in the form of total respondents, percentage of satisfaction index, and main assessment, this system displays two data tables which include an overall satisfaction index menu which contains the average complaint score per type of service, as well as details of all respondent assessments, then there is a print report feature as a supporting menu.

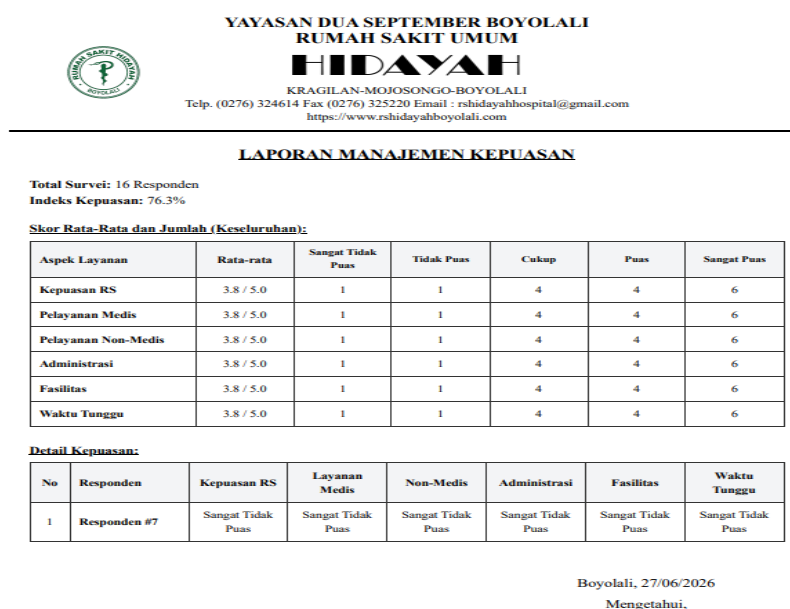


Figure 20. Satisfaction Management Report

E. Statistics Menu

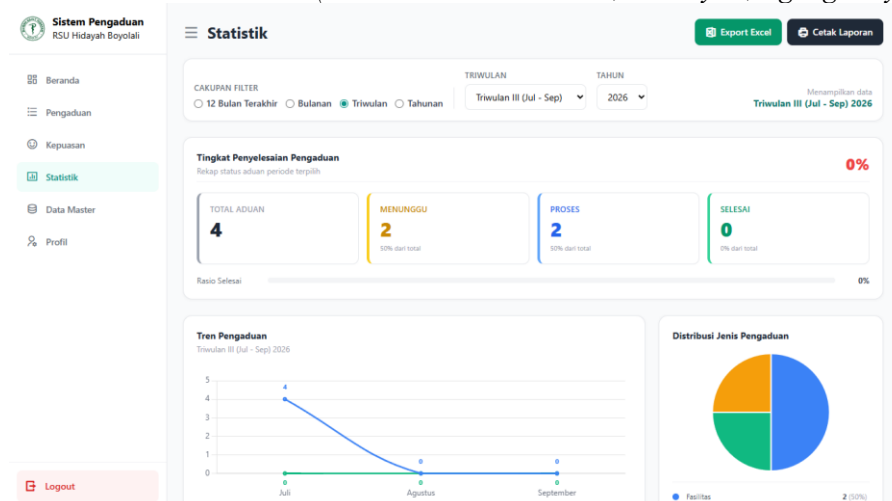


Figure 21. Statistics Menu

Then there is a satisfaction index and satisfaction statistics based on the type of satisfaction level (very dissatisfied, dissatisfied, sufficient, satisfied, very satisfied).

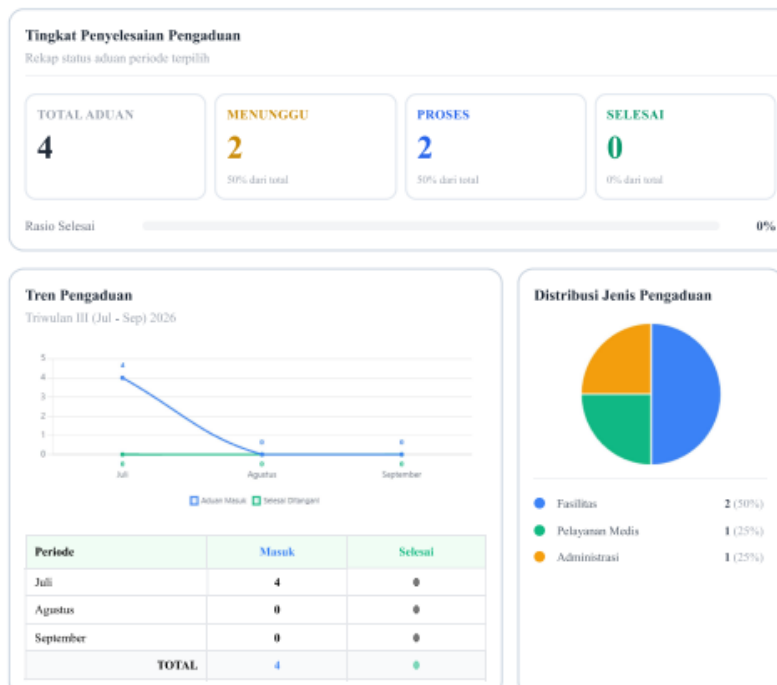
There is a print report button that can be filtered, if you want to print a report based on the last 12 months, filter it first and then print the report, likewise for monthly, quarterly and annually.

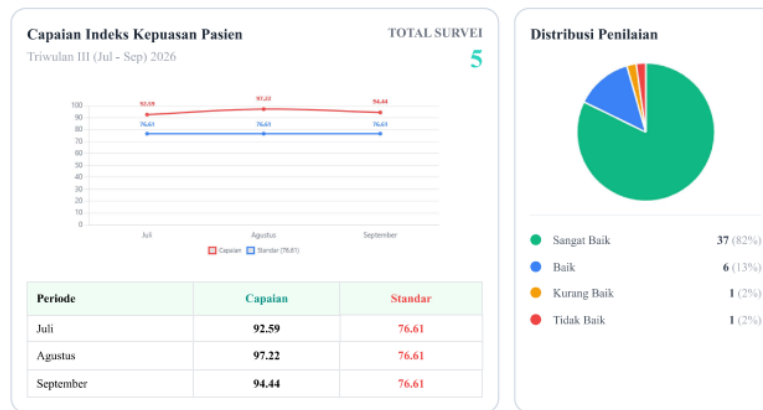


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LAPORAN STATISTIK PENGADUAN DAN KEPUASAN

Periode: Triwulan III (Jul - Sep) 2026





Boyolali, 15/07/2026

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Figure 22. Complaints and Satisfaction Statistics Report

As a support, the automatic system produces documents equipped with the Hidayah Boyolali Hospital Letterhead at the top, followed by the report title, selected period, and tables such as complaint recapitulation, satisfaction index.

F. Master Data Menu

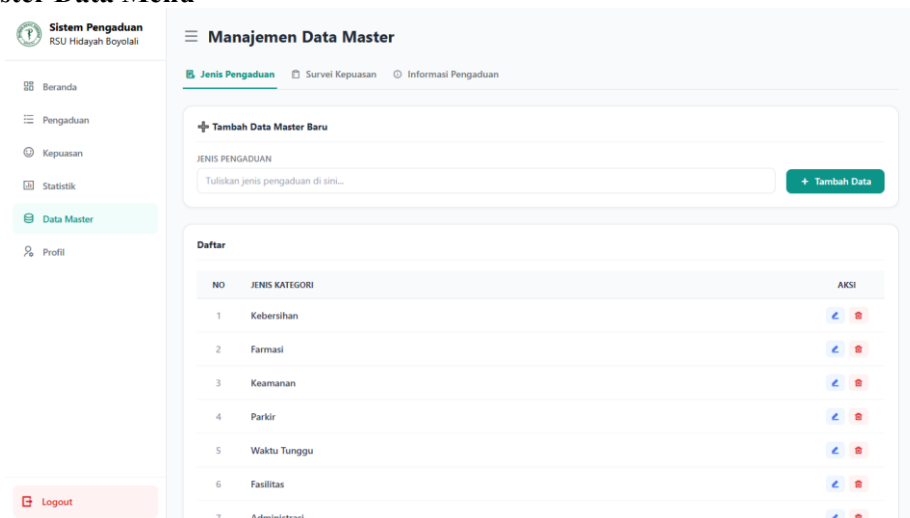


Figure 23. Master Data Menu (Complaint Type)

In the master data system's complaint type menu, staff can add, modify, or delete complaint types according to the hospital's needs and regulations. For deletion, the system first checks the database to see if the complaint type is currently in use within the existing complaint record. If it is, the deletion will be rejected; instead, it can be edited or modified.

NO	JENIS KATEGORI	AKSI
1	Sarana dan Prasarana	[Edit] [Hapus]
2	Penanganan Pengaduan, Saran, dan Masukan	[Edit] [Hapus]
3	Perilaku Pelaksana	[Edit] [Hapus]
4	Kompetensi Pelaksana	[Edit] [Hapus]
5	Produk Spesifikasi Jenis Pelayanan	[Edit] [Hapus]
6	Biaya/Tarif	[Edit] [Hapus]
7	Waktu Penyelesaian	[Edit] [Hapus]

Figure 24. Master Data Menu (Satisfaction Survey)

The Master Data System in the satisfaction survey menu allows you to add new assessment aspects or to modify or replace existing ones. These aspects will be assessed in the hospital service satisfaction survey.

NO	KATEGORI	JUDUL	ISI	AKSI
1	ALUR	Penyelesaian	Solusi diimplementasikan dan Anda akan mendapatkan tanggapan penyelesaian melalui...	[Edit] [Hapus]
2	ALUR	Tindak Lanjut	Unit terkait akan menindaklanjuti dan mencari solusi terbaik untuk menyelesaikan...	[Edit] [Hapus]
3	ALUR	Verifikasi & Analisis	Tim kami akan memverifikasi dan menganalisis pengaduan Anda secara rutin.	[Edit] [Hapus]

Figure 25. Master Data Menu (System Information)

The master data system in the system information menu functions to manage information aimed at complainants or the general public, each piece of information consists of a category, title, and information content that can be added or updated by officers.

G. Profile Menu

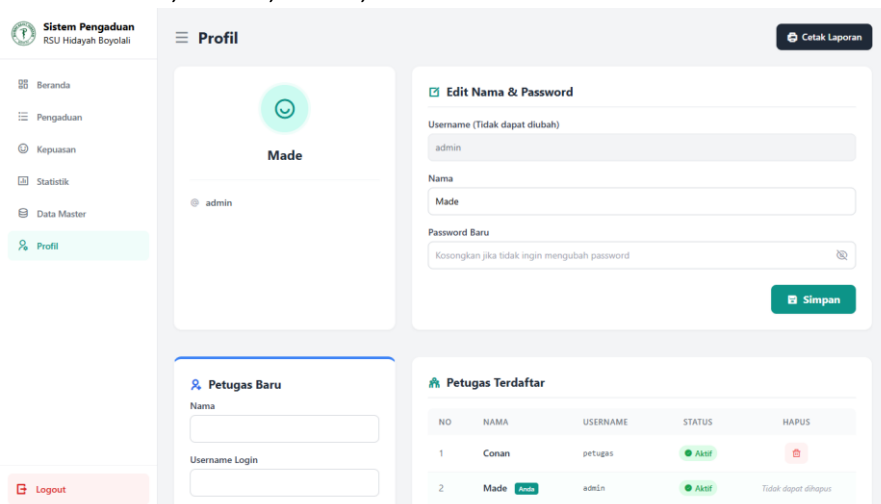


Figure 26. Profile Menu (Officer Data)

To add access rights for a new officer, you need to fill in some information, including their name, login username, and password. A table lists all officers with access rights to the system, complete with an account deletion function.

In the bottom left corner of the system's navigation menu (sidebar), there's a Logout button. Pressing the Logout button automatically cuts off access to the system and redirects the user to the login page.



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LAPORAN DATA PETUGAS

No	Nama	Username	Status
1	Conan	petugas	Aktif
2	Made	admin	Aktif

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Figure 27. Officer Data Report

As a supporting menu, there is a print report menu which functions to print reports on officer access rights data, which contains Name, Username, and Active Status.

Conclusion

This research resulted in a website-based patient complaint information system at Hidayah General Hospital, Boyolali, developed using the Systems Development Life Cycle (SDLC) method with the Waterfall model. The system provides complaint data entry features, automatic complaint ticket creation, complaint status tracking, response delivery and follow-up by officers, emoji-based satisfaction surveys, and management and printing of complaint and satisfaction reports. The system also provides complaint data management features, statistics, master data, and officer access rights. These findings indicate that the system can support the process of submitting, recording, monitoring, and managing complaints in a more structured manner according to the hospital's needs. Practically, the system can be a supporting tool for officers in managing complaints and providing follow-up status information to complainants.

This study has limitations because the system development focused on the complaint management needs at Hidayah General Hospital in Boyolali and did not measure the system's effectiveness based on quantitative indicators such as changes in response time, complaint resolution rate, or user satisfaction before and after implementation. Therefore, further research is recommended to conduct a broader evaluation of the system's use by involving more users and using measurement indicators that can demonstrate the system's effectiveness quantitatively. Further development can also consider feature improvements based on user needs and the results of system usage evaluations. Thus, the results of this study can serve as a basis for the development of a more optimal and sustainable complaint system to support hospital service management.

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