

Feasibility Study on the Implementation of Clinic SIM and ERM integrated Pcare as a BPJS Kesehatan Application at Udayana University Clinic

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Abstract

The development of an information system and communication technology has an impact on the health service sector in the form of electronic-health or e-health. One of the e-health applications is a Clinic SIM and electronic medical records. Not only provides information for the academic communities, but Udayana University Clinic also serves BPJS Kesehatan patients since 2014. After occupying a new building, there have been various obstacles related to the implementation of the management information system. Which it is still being done manually and limited space to store medical record files. One of the efforts to overcome this problem is by implementing a Clinic SIM and ERM. Before the implementation of these activities, a feasibility study was proposed on the application of CSIM and ERM integrated BPJS Healthcare. The purpose of this study was to determine the feasibility of implementing Clinic SIM and ERM which are integrated with Pcare-BPJS at Udayana University Clinic. This study used a qualitative research design. Data collection was started between December 2019 and January 2020 using the in-depth interview method on 9 informants. This study informs that the application of Clinic SIM and ERM integrated BPJS Kesehatan meets the feasibility aspect based on acceptance, demand, integration, and practicality. Conclusion: the obstacles in this study are related to the implementation aspect due to lack of human resources, infrastructure, implementation methods, budget, and minimal application of Clinic SIM and ERM.

Keywords: *feasibility study, Clinic SIM, ERM, Pcare BPJS Kesehatan*

Abstrak

[Studi Kelayakan Penerapan SIM Klinik dan ERM terintegrasi
 Pcare BPJS Kesehatan di Klinik Universitas Udayana]

Perkembangan teknologi informasi dan komunikasi memberikan dampak pada bidang pelayanan kesehatan dalam bentuk *electronic-health* atau *e-kesehatan*. Salah satu penerapan *e-kesehatan* adalah SIM klinik dan elektronik rekam medik. Klinik Universitas Udayana selain melayani civitas akademika juga melayani peserta BPJS Kesehatan mulai 2014. Sejak dilakukan perpindahan gedung ke lokasi baru, menemui berbagai masalah terkait pelaksanaan sistem informasi manajemen yang masih dilaksanakan secara manual dan keterbatasan ruang penyimpanan berkas rekam medik. Salah satu upaya untuk mengatasi permasalahan tersebut adalah dengan penerapan SIM klinik dan ERM. Sebelum pelaksanaan kegiatan tersebut dilaksanakan studi kelayakan penerapan SIM klinik dan ERM yang terintegrasi Pcare BPJS Kesehatan. Tujuan penelitian ini adalah untuk mengetahui kelayakan penerapan SIM klinik dan ERM yang terintegrasi dengan Pcare BPJS Kesehatan di Klinik Universitas Udayana. Penelitian ini menggunakan rancangan penelitian kualitatif. Pengumpulan data dilaksanakan dari Desember 2019 hingga Januari 2020 dengan metode wawancara mendalam terhadap 9 orang informan. Hasil penelitian menemukan penerapan SIM klinik dan ERM yang terintegrasi dengan Pcare BPJS Kesehatan di klinik memenuhi aspek kelayakan jika dilihat aspek penerimaan, permintaan, integrasi dan kepraktisan. Kesimpulan : masalah yang ditemui dalam studi kelayakan ini adalah menyangkut aspek implementasi karena terkendala faktor SDM, sarana prasarana, metode penerapan, anggaran dan aplikasi SIM klinik serta ERM.

Kata Kunci: *studi kelayakan, SIM klinik, ERM, Pcare BPJS Kesehatan, integrasi*

BACKGROUND

Since 2014, Indonesia has implemented the National Health Insurance (JKN) system through the Health Social Security Implementing Agency (BPJS Kesehatan). This system applies the Pcare concept which must be implemented by the First Level Health Facilities (FKTP) in collaboration with BPJS Kesehatan.

The Udayana University Clinic since 2014 has expanded its services, not only for internal campus needs but also for BPJS Kesehatan patients. The clinic is open 24-hour service that includes examinations for general practitioners, dentists, and midwives as well as simple laboratory examinations. The clinic has started occupying a new building since May 2018 with the same working hours.

However, this clinic has obstacles related to the management information system which is still being done manually. The registration process and record of patient visits as well as the financial transactions are still being done manually. This causes difficulties in making patient visit reports. The application of a remuneration system for clinical staff based on a manually generated logbook creates problems itself. The recording system in the pharmacy department is still being done manually thus there is a discrepancy between the drugs coming out and in.

Meanwhile, the high number of patients causes a problem in the medical record files storage system which is still using paper-based. Since the storage racks for medical record files are full, it is difficult for the officers to find patient medical rec-

ord files, thus making patients wait longer to get service due to the tightness of the medical record space, many files of the medical record are torn or detached. This of course causes the patient's health data incomplete so that it interferes with service to patients.

Based on these conditions, implementing a Clinic Management Information System (Clinic SIM) and Electronic Medical Records (ERM) which is integrated with BPJS Kesehatan is needed. A feasibility study was conducted on the application of Clinic SIM and ERM which is integrated with Pcare in BPJS Kesehatan system at Udayana University Clinic. The feasibility study in this research uses the Bowen method.¹

METHOD

The study is qualitative research with a case study approach and utilizes a purposive sampling technique. This study involved nine informants from the management of the Unud Hospital (RS), the IT coordinator of the Unud Hospital, and the staff coordinator of the Udayana Clinic. They were then divided into 3 groups. Data collection was carried out with in-depth interview techniques, activity observation, and literature study.

RESULTS

1. Characteristics of informants

Information was collected by conducting in-depth interviews with 9 informants. The characteristics of the informants are shown in table 1.

Table 1. Characteristics of informants

Informant's initials	Age	Gender	Educational Background	Occupation	Length of employment
KK	55	F	S2	Head of finance	
KS	50	M	S1	Head of planning department	6
IT	33	F	S1	IT coordinator	4
DRU	28	M	Medical doctor	Coordinator of general practitioner	2
DRG	31	F	Dentistry	Dentist coordinator	1
PRW	25	F	Nurse	Nurse coordinator	1
BI	27	F	D3	Midwife coordinator	1
RM	27	F	S1	RM coordinator	1
ADM	23	F	D1	Administration staff	1

1. Feasibility study based on acceptance aspect

The aspect of acceptance in this study was reviewed by focusing on the suitability between the planning system and the applicable budget system. Since the clinic is part of the university, if a new program will be developed, a proposal needs to be submitted to obtain a University agreement.

“pimpinan klinik merencanakan untuk pembuatam SIM klinik maupun ERM. Kalau sudah disusun perencanaan baru kita sesuaikan nanti anggarannya, Dari pihak rektorat pasti akan membantu kalau memang dibutuhkan.,”(KK)

Since 2015, Udayana University is implementing a digitalization system for its information management by a build up a system called “I MISS U” (Integrated Management Information System the Strategic of Udayana). Through this system, all existing information systems have been integrated, including the staffing system and the financial system. Remuneration based on attendance is paid based on electronic attendance which is integrated with the system. The performances of the employees are assessed from the performance achievement reports which are uploaded into the system every six months. Meanwhile, temporary employees receive remuneration based on information in the logbook that

shows their performance each month.

2. Feasibility study based on the implementation aspect

The implementation aspect of this feasibility study includes the facilities that support the application of SIM and ERM. Those facilities are including human resources, computer facilities, internet networks, generators, and the availability of SIM and ERM. The clinic does not yet have human resources as an IT expert, so if there is an error related to IT, the clinic has to contact the IT staff at Unud Hospital.

“harusnya ada tim IT yang standby di klinik karena kita kan ndak tahu kalau sewaktu-waktu ada error. Memang harus punya tim IT khusus yang fokus di klinik”(IT)

Currently, there are only four computers available at the clinic. Thus, not every room is equipped with a computer to use this program. The internet network is also not sufficient since it comes only from one source.

“jumlah computer sih kayaknya belum cukup. Harusnya semua ruangan itu harusnya sudah ada komputer. Cuma masalah di sarana prasarana saja sih“ (DRG) (BI)

“untuk pelaksanaan SIM klinik dan ERM itu yang pertama adalah jaringan

internet tidak hanya satu tapi harus lebih supaya tidak ketergantungan pada satu provider saja, karena untuk input Pcare akses internet harus tetap stabil “ (IT)

The implementation of Clinic SIM and ERM as apart of it requires a stable internet network, also it depends on the availability of electricity supply. The clinic does not have a backup power supply if the power is cut by PLN.

“kita juga perlu genset, karena kita pernah mati lampu disini dan kita ndak bisa ambil pasien. “(BI,DRG,DRU).

3. Feasibility study based on demand aspect

Patients that visit the clinic, both BPJS patients and non-BPJS patients, have significantly increased every month. This also increases the number of medical record files specific to each patient. Based on our observation, currently, the storage room for medical record files is no longer able to accommodate more medical record files.

“ kalau dilihat dari jumlah berkas dengan besarnya ruangan itu kurang seimbang. Mau menambah jumlah berkas yang ditaruh disana juga sudah susah karena resikonya berkas jadi banyak yang robek. Solusinya yang paling bagus sih dengan menggunakan elektronik rekam medik.,” (RM)

Registration process including making a list of patients visit and drug dispensing have been done manually. The staff needs to fulfill several logbooks (such as the general practitioner-patient logbook, the dentist-patient logbook, the KIA logbook, and the medical ward logbook) to records patient information. Some of these logbooks are used as guidelines when making reports of patient visits and to review staff performances.

When the patient pays for the medical treatment by cash, the staff then recorded it. The administrative officer periodically makes a financial recapitulation and submits it to the finance department of the Udayana Hospital.

Temporary employees create a logbook containing information related to the number of patients that can obtain from the pa-

tient register book. Each month the logbook is collected at the Unud Hospital. Meanwhile, civil servants report employee performance manually based on the patient register book which is then uploaded to I MISS U.

4. Feasibility study based on the integration aspect

Udayana University Clinic has served BPJS patients since 2014. Type of health treatments is inputted into Pcare application in BPJS Kesehatan system. The appearance of this application continues to improve. Currently, when checking the BPJS Kesehatan patients, medical staff must input the patient's medical record number at the clinic.

The process of submitting claims for non-capitation services such as ANC and family planning services (KB), only use the e-claim system. Patient referrals from FKTP to referral hospitals have also used an online referral system. BPJS Kesehatan also provides an online registration system through the JKN mobile application. However, due to limited facilities and low usage of the JKN mobile application among patients, the online registration system at Udayana clinic has been suspended temporarily.

From this condition, the informants argued that an integrated system between Clinic SIM and ERM as well as BPJS Kesehatan was needed.

“ lebih bagus sih kalau semua langsung terintegrasi, jadi kita langsung masuk ke SIM kliniknya langsung lihat data rekam mediknya dan juga kita input ke Pcare. Jadi harapannya antrean online langsung ngelink ke SIM klinik jadi dia sudah daftar di antrean online dia langsung masuk ke SIM klinik dan Pcare itu.” (RM)

BPJS Kesehatan is currently implementing an online tiered referral system. When the Udayana University clinic makes referrals through Pcare, the referral hospital that appears in the application is the hospital that is closest to the clinic and one of them is the Udayana University Hospital. The informants mentioned since

they are from the same institution, it would be better if the ERM applied in the clinic is integrated with ERM implemented at the Udayana University Hospital.

“ kalau menurut saya sih sebaiknya semuanya terintegrasi. Kalau pakai. BPJS kan semuanya harus terurut, dari faskes satu, faskes dua dan seterusnya. Sebenarnya kalau sistem seperti itu seharusnya sistem rekam mediknya juga seperti itu, sinkron,” (DRG)

The remuneration for temporary employees is calculated by the financial department of the Unud Hospital by looking at the employee's performance as can be seen in the logbook. The informants assumed that to make the calculation easier, the Clinic SIM that is applied in the clinic can be integrated with the SIM that is implemented in the hospital.

5. Feasibility study based on the practical aspect

The practical aspect of this study is related to the efficiency and effectiveness that are expected to occur through the application of Clinic SIM and ERM which are integrated with BPJS Kesehatan system. The informants expected that creating the medical patient records and employee logbook will be easier when Clinic SIM is applied.

“ kalau di perawat sendiri itu kan kita punya buku register pasien umum dan register di ruang tindakan jadi setiap kita jaga kan harus nulis lagi harus isi diagnosa lagi, siapa dokternya yang mengerjakan sehingga nambah beban kerja, “ (PRW)

“ saya berharap karena sekarang semua menuju arah digital tentu akan lebih efisien kalau kita memakai SIM dan ERM karena kebutuhan kertasnya dan ruangan untuk menyimpan berkas juga akan lebih

sedikit.” (KS)

“ dengan adanya sistem pasti semua kita harapkan lebih bagus. Pertama mungkin respon time nya terhadap pasien di pelayanan akan lebih cepat Kemudian ke depannya kami sebagai tim remunerasi pasti akan lebih gampang untuk menilai kinerja dari sistem untuk logbooknya “ (KK)

In the process of calculating the medical costs, it will also be faster and more precise if the cost is systematically calculated. The integrated system helps to make drug data available therefore the doctor can check the availability of the drugs before making a prescription. This of course will reduce the workload in the pharmacy department in delivering drugs to patients. Electronic prescribing will reduce the risk of errors in reading the prescription.

“ karena tidak ada sistem yang terintegrasi kita tidak tahu berapa jumlah obat, Kalau secara computer kan lebih gampang kita ngeresepin, dan karena secara elektronik petugas di farmasi juga gampang dalam memberikan obat, “ (DRG)

“ Karena kita meresepkan manual kadang-kadang tidak tahu stok. jadi harus balik lagi ke kita kalau obat habis sehingga menambah jumlah waktu tunggu pasien. Belum lagi petugas ragu-ragu baca tulisan resep, terkadang akhirnya dokter langsung ke farmasi biar sesuai dengan obat yang diberikan dengan yang kita resepkan, “ (DRU)

DISCUSSION

There are several themes related to the feasibility study including aspects of acceptance, implementation, demand, integration, and practicality as shown in the following figure.

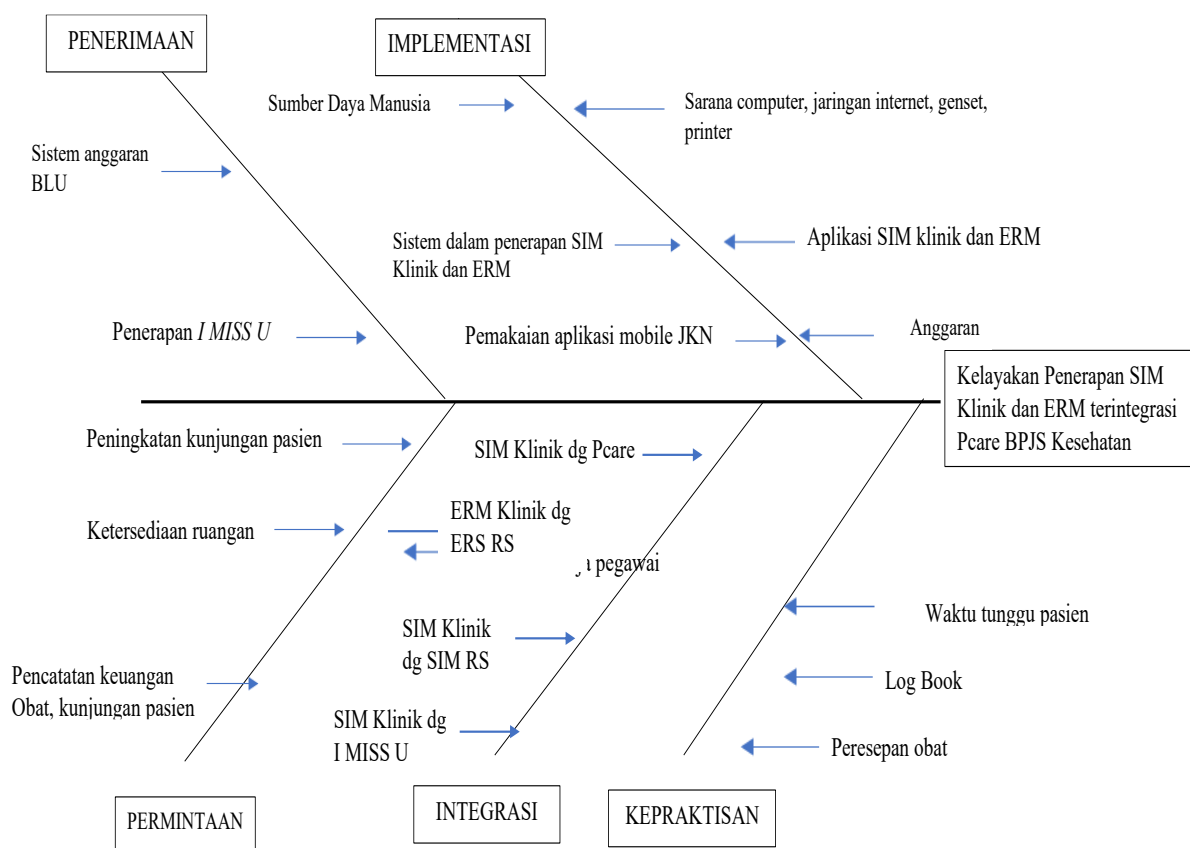


Figure 1. Feasibility Study analysis on the Application of Clinic SIM and ERM integrated Pcare in BPJS Kesehatan system

Feasibility study according to the acceptance aspect

Since Udayana University Clinic is part of Udayana University, in process of compiling a new program, it must follow the financial system at Udayana University which is a Public Service Agency (BLU). therefore, in managing finances, it must refer to the applicable laws related to the regulation of performance-based budgeting at State Universities (PTN). The implementation of this system requires budget formulation and execution which is not only based on inputs and processes, but it also needs to be output-oriented (performance results). Each BLU must have a Business and Budget Plan (RBA) at the beginning of each fiscal year by referring to the Strategic

Plan of State Ministry/Agencies (Renstra-KL). Moreover, the BLU can utilize the APBN that has been approved by the DPR and also the government. The APBN is used as the basis for RBA adjustments which has been submitted and becomes the definitive RBA.²

Using the system applied to the I MISS U application, various employment information can be generated electronically. The employee attendance system is recorded with an integrated face scan so that the percentage of employee attendance can be evaluated each month. Employee performance achievements can also be displayed through the employee information system. This system also helps the employees in the finance department. They will have a fea-

ture in the application to input financial activities at their work unit.

Feasibility study according to implementation aspects

When planning to implement SIM and ERM in the clinic, the management must consider the readiness of the clinic in terms of human resources, facilities, and infrastructure as well as the available budget. In the early stages of planning, staff can be involved to determine the appearance of the SIM and ERM as needed. Before it is fully implemented, it is necessary to conduct training which also covered the introduction for the staff who will use it. Training and socialization must be done regularly, therefore the system can be improved.^{3,4}

Various studies related to the application of ERM and Clinic SIM stated that before implementing an information technology into a health facility system, an adaptation process from manual to electronic systems is required. During the training, it is also possible to identify the appearance of the Clinic SIM and ERM to suit the clinical needs. This is intended that the application of this technology can increase the effectiveness and efficiency of services and does not impose additional burdens on clinical staff.⁵⁻⁷

The availability of computers is important to applied Clinic SIM and ERM integrated Pcare-BPJS Kesehatan. The computers must have specifications needed to avoid errors or a long loading process. Not only a computer, but this system also requires a stable internet network especially when one system is integrated into another system. Therefore, a stable internet connection is a must when we want to integrate the local health facilities system with the national system implemented by BPJS Kesehatan (8, 9).

To improve the quality of services in the clinic, it is necessary to have a more concise ERM display and contain various important things regarding the patient's condition that can be obtained quickly. For

this reason, an adaptation between the needs of doctors and the available system is needed to suit the needs of doctors in providing health services. (7)

Several health facilities mentioned financial reasons as a barrier to adopting electronic systems in health care facilities. Besides that, there is a concern that the adaptation process of this system will decrease work productivity. Thus, it will be a huge consideration when the management decides to provide a certain budget for procurement of electronic-based ERM and SIM.¹⁰

The use of ERM is not limited to its benefit in treating patients by the doctors. Research in Rio de Janeiro uses ERM as the basis for management performance appraisals and professional performance payments every three months. Besides, ERM can also be a basis for verifying the implementation of health service policies at the primary level. (12)

Since Udayana Clinic collaborates with BPJS Kesehatan, this clinic must input data required into Pcare for every patient who achieved medical consultation and/or medical treatment in Udayana Clinic. Therefore, the integration of the Clinic SIM with the Pcare-BPJS Kesehatan will reduce the workload of the staff at the FKTP. The implementation of integration between the two systems will result in more effective and efficient patient care. Besides, it will facilitate the recording and reporting of health services to the Health Office and other related agencies.^{13,14}

ERM as a platform for a health information system is a solution for doctors in tracking the patient's medical history, previous examination history, another additional examination as well as a history of allergies and drug contraindications. The integration between ERM applied in a clinic and ERM applied in other subsystem services such as laboratories and hospitals or advanced health services, becomes necessary, as an effort to improve service effi-

ciency and to strengthen coordination between health care facilities.^{5,12}

Meanwhile, the electronic system for calculating performance achievements has begun to be widely implemented through e-performance. A study found that the application of e-performance has a positive and significant effect on the improvement of employee performance. By performing a better e-performance application, each employee will be fully responsible for their main duties. The employees will also improve their quality of work by providing excellent service to the community and working hard to be able to achieve better work quantity.^{15,16}

The use of Clinic SIM in primary services such as Puskesmas helps speed up, increasing the fluency and accuracy when it comes to making patient visit reports. The integration between the SIM applied in FKTP and Pcare will make it easier for staff to input patient information. When an input is made at the clinic system, it is automatically added to the Pcare system and vice versa. Therefore, it does not impose additional burdens on clinic staff since it does not require double input.^{13,17}

The Pcare system which is integrated with the SIM and ERM applied in the clinic causes efficiency in better data input. When we input the BPJS Kesehatan number of the patient, it will automatically display the number of the patient's medical record which shortens the time consuming to search the patient's medical record file. If ERM is simultaneously applied, it will automatically display the previous patient's health data. This will improve the performance of the medical staff. The application of a quick and accurate Clinic SIM system will assist the management when planning a clinical operational system.^{3,13,14,18}

The development of health information technology also has an important role to improve the workflow of pharmacists. The use of technology such as electronic prescribing helps pharmacists to reduce errors in reading drug prescriptions, therefore minimize the risk of giving inappropriate drugs to patients. Meanwhile, from a management point of view, the ap-

plication of this system will assist management in planning to procure medicines according to patients' needs.^{19,20}

Utilizing TIK in health services is not only beneficial for the patient by increasing the quality of health services but also for the management of health care itself. Various information obtained accurately and quickly from the system can be used as material for consideration by policymakers to develop better health services in the clinic. In general, if this information is integrated with various health services, it would support the government in policy development regarding the health sector with community-based.

CONCLUSION

From the results of this feasibility study on the application of Clinic SIM and ERM integrated with BPJS Kesehatan at Udayana Jimbaran University Clinic, it can be concluded:

The application of Clinic SIM and ERM is feasible when reviewed from various aspects, including the acceptance, demand, practicality, integration, and implementation. Besides, fulfillment regarding human resources and better infrastructure of healthcare facilities are needed.

To implement a Clinic SIM and ERM integrated with the Pcare, it requires cooperation with the BPJS Kesehatan as the owner of Pcare application.

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