

Quantitative Analysis of Medical Records In Hospitals

Dony Setiawan Hendyca Putra¹, Athiyyah Yumna², Atma Deharja³

¹Program Studi Manajemen Informasi Kesehatan, Jurusan Kesehatan, Politeknik Negeri Jember, Indonesia, dony_shp@polije.ac.id

²Program Studi Manajemen Informasi Kesehatan, Jurusan Kesehatan, Politeknik Negeri Jember, Indonesia, tyumtyum3@gmail.com

³Program Studi Manajemen Informasi Kesehatan, Jurusan Kesehatan, Politeknik Negeri Jember, Indonesia, atmadeharja@polije.ac.id

ABSTRAK

Ketidaklengkapan rekam medis banyak terjadi di setiap rumah sakit khususnya di bagian rawat inap. Hal ini masih belum memenuhi standar pelayanan minimal rumah sakit bahwa pengisian rekam medis harus lengkap 100%. Ketidaklengkapan pengisian berkas rekam medis akan mengakibatkan rekam kesehatan pasien yang termuat menjadi tidak sinkron serta informasi kesehatan pasien terdahulu sulit diidentifikasi. Tujuan penelitian untuk mengidentifikasi kelengkapan pengisian berkas rekam medis dan faktor penyebab ketidaklengkapan pengisian berkas rekam medis pasien rawat inap. Metode yang digunakan yaitu literature review. Pemilihan literature berdasarkan kriteria inklusi dan eksklusi dari database seperti Google Scholar, Crossref, e-Library Politeknik Negeri Jember, dan Portal Garuda. Literatur yang digunakan sebanyak 19 artikel. Hasil penelitian terkait ketidaklengkapan nama pasien, tanggal lahir, usia, alamat, jenis kelamin, nama dokter, tanggal pelaksanaan asuhan pasien, ketidakkelengkapan laporan penting, ketidakkelengkapan autentifikasi berkas rekam medis rawat inap menunjukkan hasil yang cukup tinggi. Ketidaklengkapan tersebut dikarenakan ketidakdisiplinan petugas, minimnya pengetahuan tentang manfaat kelengkapan rekam medis, kurangnya pelatihan petugas tentang pengisian rekam medis, kurangnya monitoring dan evaluasi dalam pengisian rekam medis. Petugas yang berperan dalam pengisian rekam medis adalah tenaga medis meliputi dokter penanggung jawab pasien, dokter IGD, perawat IGD, perawat di rawat inap, serta petugas unit rekam medis yang mengontrol kelengkapan pengisian rekam medis. Sehingga saran pada penelitian ini yaitu pentingnya meningkatkan kedisiplinan dokter dan perawat dalam pengisian rekam medis rawat inap, memberikan reward dan punishment terkait kelengkapan pengisian rekam medis.

Kata kunci: ketidaklengkapan, rekam medis, rumah sakit

ABSTRACT

Incomplete medical records often occur in every hospital, especially in the inpatient department. This still does not meet the hospital's minimum service standards, namely that filling in medical records must be 100% complete. Incompleteness in filling out medical record files will result in the patient's health records being loaded out of sync and the patient's previous health information being difficult to identify. The aim of the research is to identify the completeness of filling in medical record files and the factors that cause incomplete filling in of inpatient medical record files. The method used is a literature review. Literature selection is based on inclusion and exclusion criteria from databases such as Google Scholar, Crossref, Jember State Polytechnic e-Library, and Garuda Portal. The literature used was 19 articles. The research results related to incomplete patient names, date of birth, age, address, gender, doctor's name, date of implementation of patient care, incomplete important reports, incomplete authentication of inpatient medical record files showed quite high results. This incompleteness is due to indiscipline of officers, lack of knowledge about the benefits of complete medical records, lack of training for officers regarding filling out medical records, lack of monitoring and evaluation in filling out medical records. Officers who play a role in filling out medical records are medical personnel including doctors in charge of patients, emergency room doctors, emergency room nurses, inpatient nurses, as well as medical record unit officers who control the completeness of filling in medical records. So the suggestion in this research is the importance of increasing the discipline of doctors and nurses in filling out inpatient medical records, providing rewards and punishments regarding the completeness of filling in medical records.

Keywords: incompleteness, medical records, hospital

* Korespondensi Author : Dony Setiawan Hendyca Putra, Politeknik Negeri Jember, dony_shp@polije.ac.id dan 082334805207

I. BACKGROUND

The regulation of Ministry of Health No 269/MENKES/PER/III/2008 defines medical records as notes and documents associated with patient identity, examination, treatment, action, and other services administered to patients. The proviso of Ministry of Health No. 129 of 2008 regulated the minimum service standards for hospitals which state that medical record has to be filled no longer than 24 hours after the completion of medical service. This aims to ensure service continuity and patient safety as two crucial indicators of health workers' responsibility in administering complete medical records. In this regard, 100% of medical record has to be filled in no longer than 24 hours after a patient is approved to go home to improve the quality of hospital services¹.

To improve the service quality and administration of medical records in hospitals, measures to control the filling of medical records are undeniably required on regular basis. The quality of medical records also determines the quality of hospital services. Medical record analysis is divided into quantitative and qualitative analyses. Quantitative analysis is aimed to assess the completeness and accuracy of inpatient and outpatient medical records at a healthcare facility². Complete follow-up data in health services can optimize the quality of health services and maintain service compliance with health service standards³.

Based on the results of researchers' review of several articles, there are still many cases of incompleteness in filling out medical record files, especially for inpatient care, around 30 to 40 %. This means that the completeness of inpatient medical record files is around 60 to 70 %. This is still far from perfect. because according to the hospital's minimum service standards, medical records must be 100 % complete.

Filling in medical records that have yet to meet 100% completeness as required by the government remains a huge issue for hospitals. One rationale for this is the accuracy and completeness of medical records significantly influence the quality of health services provided by healthcare facilities to patients; the higher the

level of completeness and accuracy of medical records, the higher the quality of services provided. The impact of incomplete filling out of medical records will hinder the patient's release of rights to the contents of the record medical conditions, complicates the process of classification and coding of diseases, hampers the preparation process reports, making legal case evidence, and submitting insurance requests. Incompleteness Filling in medical records affects the quality of medical record services and impacts continuity of service and patient safety because the doctor's responsibilities have not been explained in the medical record information Incompleteness in filling out medical records affects the quality of medical record services and has an impact on service continuity and patient safety because the doctor's responsibilities have not been described in the medical record information. When left unaddressed, incomplete medical records are likely to adversely affect the quality of hospital services, while also reducing patient satisfaction. In this scenario, this research delves into the quantitative analysis of inpatient medical record files at hospitals through a literature review.

II. METHODOLOGY

This research employed a literature review of 19 selected articles that reported quantitative analysis of inpatient medical records. These articles were obtained from several databases, namely Google Scholar, Crossref, and Garuda, by using the following

keywords: "quantitative analysis", "inpatient", and "medical records". Upon searching, these keywords were combined by using the conjunction "AND". Article selection criteria and stages use inclusion and exclusion selection criteria. Condition the inclusion criteria are articles with qualitative research type, the research results are relevant to research objectives, articles published within the last 10 years (2011-2021), articles in the form of journals or thesis, while the exclusion criteria are incomplete articles, articles cannot be downloaded, and the source of the article is unclear.

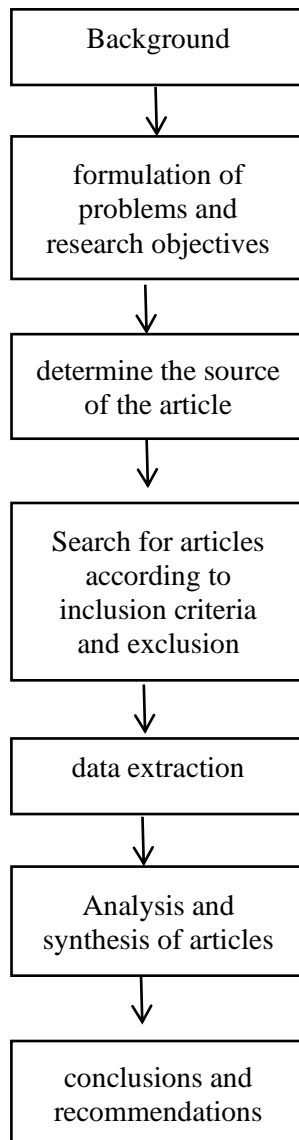


Figure 1. Review Procedure

The image above shows the research procedure using the literature review method, which is described in the following explanation :

- a. Background: In this study, the background explains the problems underlying the incompleteness of medical record files for inpatients in hospitals.
- b. Formulation of the problem and research objectives. In determining the problem formulation and research objectives, the researcher used the PICO method, namely the population was the medical record files of inpatients, the factor causing incompleteness was intervention, there was no comparison; and the outcome is the completeness of the medical record file.

- c. Determine the source of the article. At this stage, the researcher determines the source of the article that will be analyzed in the research. The sources for articles in this research use databases that provide free access or open access, namely Google Scholar, Garuda Portal, Jember State Polytechnic e-Library, and Crossref.
- d. Search for articles according to inclusion and exclusion criteria. Researchers search for articles that match the research topic based on predetermined criteria. Article searches were carried out using the keywords "Causing Factors" AND "Incompleteness" AND "Medical Records".
- e. Data extraction. The results of the search for articles/literature that meet the criteria are presented using a table containing a summary of the article consisting of the author's name and journal identity, research title, article form, research method, research subject, data collection method, and research results.
- f. Data analysis and synthesis. At this stage, researchers carry out analysis by comparing, looking for similarities, finding differences, providing comments, summarizing articles and identifying factors that result in incomplete filling in of inpatient medical record files based on selected articles. This includes the researcher's arguments for articles submitted freely, briefly and logically in accordance with the problem formulation and research objectives.
- g. Conclusions and recommendations. Provide conclusions based on the results of the discussion in the analyzed article. Then provide suggestions as input and evaluation material for hospitals regarding incomplete filling in of inpatient medical record files

III. RESULTS AND DISCUSSION

Table 1. Inpatient Medical Record Based on Patient Identification

Articles	Authors and year of publication	Completeness of medical record details					
		Patient name (%)	Reference of medical records (%)	Date of birth (%)	Age (%)	Address (%)	Sex (%)
Article 1	Giyatno, Maysyarah Yolla Rizkika (2020)	56	56	56			28
Article 2	Septi Nur Rahayu, Sri Sugiarsih, M. Arief TQ (2013)	78,57	76,78		68,61		
Article 3	Indah Pranata, Wagiran (2019)	89	86		83	93	91
Article 4	Annisa Febri Kusuma Wardani, Sri Sugiarsi (2016)	91,14	91,14	84,28			
Article 5	Selvia Juwita Swari, Gamasiano Alfiansyah, Rossalina Adi Wijayanti, Rowinda Dwi Kurniawati (2019)	100	100	100		100	100
Article 6	Nugraheni Pratiwi, Ahmad Ahid Mudayana (2019)	100	100				
Article 7	Bima Yunus Dzulhanto (2018)	92,33	87,44		92,32		
Article 8	Marsum, Elise Gamelia, Edy Susanto, Rizky Febri Nugroho (2018)	100	99	99			
Article 9	Irmawati, Ahmad Danuri, Sudiyono, Fauzia Rahmawati (2018)	81,21	69,21				
Article 10	Made Karma Maha Wirajaya, Ni Made Umi Kartika Dewi (2019)	93,53		87,07	1,72	88,79	87,07
Article 11	Eny Yuniati, Ahmad Rifa'i (2020)	100	100				
Article 12	Ajeng Nurliani, Imas Masturoh (2017)	100	100		100	100	100
Article 13	Yoma Treacilla Helvia Putri (2020)	100	100		100		100
Article 14	Fitri Hastuti, Sri Sugiarsi, Riyoko (2011)	100	100				
Article 15	Miftachul Ulum, Niken Sekarningrum (2015)	30	20				
Article 16	Susanti, Sri Sugiarsi, Harjanti (2013)	81,06	78,16		70,71		
Article 17	Artha Adi Listyana, Sri Sugiarsi, Harjanti (2014)	69,25	63,42		63,42		43,9
Article 18	Aprilia Dwi Anggraini, Harjanti, Bambang W. (2014)	80,61	73,21		78,3		56,63
Article 19	Rini Damayanti, Sri Sugiarsi, Riyoko (2012)	88,33	87,33		78,67		

The based on table 1 above, it can be interpreted regarding the completeness of the patient's name, date of birth, age, address, gender, that overall completeness of the patient identification has not reached 100% because of multiple incomplete details. In addition, most articles do not analyze the completeness of the patient's name and medical record number. This disregards the proviso of Ministry of Health No. 129 of 2008 concerning Minimum Hospital Service Standards where medical records have to be filled out within 24 hours after a service is completed ²². In congruence, in the study of ⁴ argues that each medical record at least has to include the patient's identity, such as the patient's name, medical record number, date of birth, and gender. Any medical record without complete details on the patient's identity needs

immediate rechecking and tracing. A medical record is said to be complete when it has documented all essential data as required by the hospital (Hatta, 2013). A complete record of patient identification aims to ensure that the medical record as administrative data provides the necessary demographic information for supporting the generation of the statistical database, research, and the planning of hospitals and health services ⁴.

The completeness of the patient's identity in the medical record can affect patients and related healthcare facilities. Besides, it helps to minimize the risk of missing or mixed files. The complete medical record helps to better identify the patient's identity and administer the required treatment more accurately ⁸.

Table 2. Inpatient Medical Record Based on Authentication

Article	Authors and year of publication	Completeness of medical record details		
		Doctor's name (%)	Doctor's signature (%)	Date and time (%)
Article 1	Giyatno, Maysyarah Yolla Rizkika (2020)	31	42	
Article 2	Septi Nur Rahayu, Sri Sugiarsih, M. Arief TQ (2013)	84,9	68,07	
Article 3	Indah Pranata, Wagiran (2019)	95	97	
Article 4	Annisa Febri Kusuma Wardani, Sri Sugiarsi (2016)	84,24	84,96	
Article 5	Selvia Juwita Swari, Gamasiano Alfiansyah, Rossalina Adi Wijayanti, Rowinda Dwi Kurniawati (2019)	91,18	91,18	
Article 6	Nugraheni Pratiwi, Ahmad Ahid Mudayana (2019)	97,71	100	
Article 7	Bima Yunus Dzulhanto (2018)	88,63	85,79	
Article 8	Marsum, Elise Gamelia, Edy Susanto, Rizky Febri Nugroho (2018)	74	74	96
Article 9	Irmawati, Ahmad Danuri, Sudiyono, Fauzia Rahmawati (2018)	66,19	73,35	
Article 10	Made Karma Maha Wirajaya, Ni Made Umi Kartika Dewi (2019)	79,31	96,12	89,66
Article 11	Eny Yuniati, Ahmad Rifa'i (2020)	93	85	
Article 12	Ajeng Nurliani, Imas Masturoh (2017)	75,62	85,22	
Article 13	Yoma Treacilla Helvia Putri (2020)	92,8	98,4	
Article 14	Fitri Hastuti, Sri Sugiarsi, Riyoko (2011)	80,25	78,57	
Article 15	Miftachul Ulum, Niken Sekarningrum (2015)	75	82	
Article 16	Susanti, Sri Sugiarsi, Harjanti (2013)	68,75	90,62	
Article 17	Artha Adi Listyana, Sri Sugiarsi, Harjanti (2014)	43,17	65,86	
Article 18	Aprilia Dwi Anggraini, Harjanti, Bambang W. (2014)	66,78	75,45	
Article 19	Rini Damayanti, Sri Sugiarsi, Riyoko (2012)	76,8	97	

Based on table 2 above, it can be interpreted as completeness of the doctor's name, doctor's signature, date and time, that referring to the Regulation of the Minister of Health of the Republic of Indonesia No. 269/MENKES/PER/III of 2008 in article 5 paragraph 4, every detail in a medical record needs to include the name, time, and signature of doctor and/or certain health workers who provide health services directly to the patient. Noting that authentication reviews can be in the form of names or stamps, signatures, and professional/academic degrees. Every medical record needs to inform everyone in charge ⁴.

The completeness of medical record authentication has not been 100% complete. Although all 19 articles document the completeness of the doctor's name and signature, only two articles analyze the completeness of the date and time of services provided to patients. This overlooks the regulation stipulated by the Minister of Health of the Republic of Indonesia No. 269 of 2008 concerning medical records, which specifies that every doctor is required to make a medical record immediately after a patient receives a specific treatment or service. The regulation

requires complete details involving time as well as the name and signature of the doctor or health worker who provides health services. The Medical Practice Act No. 29 of 2004 in paragraph 3 also explains that each medical record must inform the name, time, and signature of the officer providing a medical service or action. When the name of the person in charge is missing, this will make it difficult for the other officer to determine who is responsible for a certain treatment given to a patient ²². Meanwhile, if a medical record does not contain the signature of the person in charge of a specific service, the record is then deemed invalid or illegal, which eventually prevents health workers or other staff from treating a patient ².

The complete authentication of a medical record holds an essential role, considering its legality value as valid evidence in a trial. In this case, any medical record without a specified doctor's name or signature is viewed as illegal by law, and this will make it difficult for the hospital to be accountable for the doctor's actions and decisions during treatment ²³.

Table 3. Inpatient Medical Records Based on Important Reporting

Article	Authors and years of publication	Completeness of important reporting (%)
Article 1	Giyatno, Maysyarah Yolla Rizkika (2020)	51,83
Article 2	Septi Nur Rahayu, Sri Sugiarsih, M. Arief TQ (2013)	95,66
Article 3	Indah Pranata, Wagiran (2019)	97,3
Article 4	Annisa Febri Kusuma Wardani, Sri Sugiarsi (2016)	59,47
Article 5	Selvia Juwita Swari, Gamasiano Alfiansyah, Rossalina Adi Wijayanti, Rowinda Dwi Kurniawati (2019)	93,02
Article 6	Nugraheni Pratiwi, Ahmad Ahid Mudayana (2019)	57
Article 7	Bima Yunus Dzulhanto (2018)	99,53
Article 8	Marsum, Elise Gamelia, Edy Susanto, Rizky Febri Nugroho (2018)	77,37
Article 9	Irmawati, Ahmad Danuri, Sudyono, Fauzia Rahmawati (2018)	82,53
Article 10	Made Karma Maha Wirajaya, Ni Made Umi Kartika Dewi (2019)	89,99
Article 11	Eny Yuniati, Ahmad Rifa'i (2020)	51
Article 12	Ajeng Nurliani, Imas Masturoh (2017)	61,99
Article 13	Yoma Treacilla Helvia Putri (2020)	92,87
Article 14	Fitri Hastuti, Sri Sugiarsi, Riyoko (2011)	83,84
Article 15	Miftachul Ulum, Niken Sekarningrum (2015)	44,9
Article 16	Susanti, Sri Sugiarsi, Harjanti (2013)	100
Article 17	Artha Adi Listyana, Sri Sugiarsi, Harjanti (2014)	77,33
Article 18	Aprilia Dwi Angraini, Harjanti, Bambang W. (2014)	60,21
Article 19	Rini Damayanti, Sri Sugiarsi, Riyoko (2012)	100

Based on table 3 above, the completeness of important reports in medical records in the majority of hospitals has still not reached 100%. this gives the meaning that incomplete filing of important reports will delay the administration of medical records. This can have an impact on delays in filing financial claims if the patient is a participant in health insurance ¹⁹. The payment system is carried out based on the patient's diagnosis so that the hospital receives the payment based on the costs of treatment for a disease ². That it is important to note that each reporting record includes a date and time. This is closely related to the regulations for filling medical records as the basis to trace an incident. Incomplete reporting, such as dates and hours, can interfere with the calculation of treatment length for a patient ¹⁵.

Incomplete writing makes it difficult for a medical record officer to code the actions given by a doctor ²⁰. Ministry of Health (2008)

further highlights the importance of medical records as evidence of the implementation of nurses' work. Every nurse must record any actions taken according to the doctor's recommendation. This enables the doctor to monitor the results of recommended actions and to determine the next course of treatment. It can also be used for legal evidence in an unexpected event that occurs to the patient ²².

The complete filling of important reports is useful for health services in tracking the length of treatment for patients. In this case, a health worker can find out the treatment history of a patient at a healthcare facility, so that when the patient returns for treatment, the health worker will easily find out the patient's history. Another detail in the important report is the patient's diagnosis. Equally essential is that this report aids in the examinations of patients as the basis to file financial claims¹⁴.

Table 4. Inpatient Medical Record Based on Proper Documentation

Article	Authors and Years of publication	Completeness of proper documentation			
		Fixed lines	Correction (%)	Readable texts (%)	Abbreviation (%)
Article 1	Giyatno, Maysyarah Yolla Rizkika (2020)		44	69	72
Article 2	Septi Nur Rahayu, Sri Sugiarsih, M. Arief TQ (2013)	34,53	28,57	89,29	
Article 3	Indah Pranata, Wagiran (2019)	97	83,5		
Article 4	Annisa Febri Kusuma Wardani, Sri Sugiarsi (2016)	58,7	16,66	94,66	
Article 5	Selvia Juwita Swari, Gamasiano Alfiansyah, Rossalina Adi Wijayanti, Rowinda Dwi Kurniawati (2019)		12,79	83,72	
Article 6	Nugraheni Pratiwi, Ahmad Ahid Mudayana (2019)		98,86	98,86	
Article 7	Bima Yunus Dzulhanto (2018)	41,86	89,53	92,56	
Article 8	Marsum, Elise Gamelia, Edy Susanto, Rizky Febri Nugroho (2018)		100		
Article 9	Irmawati, Ahmad Danuri, Sudiyono, Fauzia Rahmawati (2018)		100		
Article 10	Made Karma Maha Wirajaya, Ni Made Umi Kartika Dewi (2019)		59,31	4,31	
Article 11	Eny Yuniati, Ahmad Rifa'i (2020)		75,5		
Article 12	Ajeng Nurliani, Imas Masturoh (2017)	94,8	100	72,42	
Article 13	Yoma Treacilla Helvia Putri (2020)			75,2	99,2
Article 14	Fitri Hastuti, Sri Sugiarsi, Riyoko (2011)		100	43	
Article 15	Miftachul Ulum, Niken Sekarningrum (2015)	100	74		
Article 16	Susanti, Sri Sugiarsi, Harjanti (2013)	64,12	78,93	95,83	

Article	Authors and Years of publication	Completeness of proper documentation			
		Fixed lines	Correction (%)	Readable texts (%)	Abbreviation (%)
Article 17	Artha Adi Listyana, Sri Sugiarsi, Harjanti (2014)		68,74	69,18	
Article 18	Aprilia Dwi Anggraini, Harjanti, Bambang W. (2014)		0	95,67	95,2
Article 19	Rini Damayanti, Sri Sugiarsi, Riyoko (2012)			70	100

Huffman states that a line needs to be made to a space to prevent any addition of inaccurate notes from irresponsible parties²³. According to the regulation of the Ministry of Health, No. 269/MENKES/PER/III/2008 in article 5 paragraph 5, an error in a medical record can be corrected by crossing it out without removing the corrected record. This correction needs to be completed with the initials of the doctor or certain health worker. This is in line with Sudra RI (2013) who states that incorrect, illegible, or lost record requires no correction¹. Hatta (2008) also states that medical records need to report accurate alphabets and numbers which may correspond to the chronology or stages of visits and/or treatment². Sudra RI (2013) explains that a review of medical records requires clear and accurate writing that must be re-read properly to prevent any bias. The detail in medical records must be written using permanent and black ink so that it does not fade easily. Furthermore, the writing should use standard and registered terms, abbreviations, and symbols so that readers can understand them easily (24).

The regulation issued by the Ministry of Health No 269/MENKES/PER/III of 2008 in article 2 of paragraph 1 states that medical records consist of writings generated electronically, which needs to be complete and clear¹. Ministry of Health of the Republic of Indonesia (2006) states that all diagnoses are written correctly. These details, involving diagnoses and surgeries, should comply with standard terminology and be reported in the final resume. Any incorrect or incomplete diagnosis will lead to inaccurate coding affecting filling in the disease index and hospital reports¹⁴. The completeness of inpatient medical records on the correct documentation component as a whole has not reached 100% due to multiple

incomplete or missing details. Decent documentation of medical records will impact the quality of services provided by healthcare facilities. Likewise, medical officers need to immediately log any given services to patients in the medical record¹⁴.

IV. CONCLUSION AND SUGGESTIONS

The incomplete patient name, date of birth, age, address, gender, doctor's name, date of implementation of patient care, incomplete important reports, incomplete authentication of inpatient medical record files showed quite high results. Officers who play a role in filling out medical records are medical personnel including doctors in charge of patients, emergency room doctors, emergency room nurses, inpatient nurses, as well as medical record unit officers who control the completeness of filling in medical records.

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