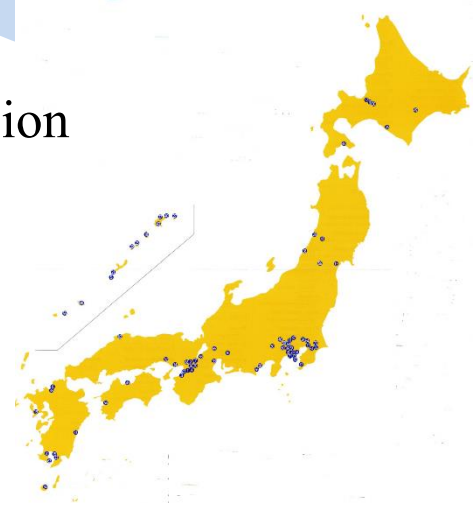
Tokushukai
Medical Group

Tokushukai Medical Group
Third Stage
Hospital Peer Review
-Monthly and Emergency-

Operation Manual

Reduced version



2021

Tokushukai Medical Group
Executive Committee

Page Index

1. Introduction of the president ・・P.4
2. From the executive committee for enforcement of peer review ・・P.5
3. From the secretariat for enforcement of peer review ・・P.6
4. Manual related to peer review operations ・・P.7
5. What is peer review of Tokushukai Medical Group? ・・P.8
6. Survey for surgical results ・・P.9,10
7. With the conditions of the target hospital ・・P.11
8. Target hospitals and clinical departments ・・P.12-14
9. Evaluation items and method ・・P.15
10. Evaluation of surgery and endovascular treatment ・・P.16
11. Method of registration and calculation of postoperative complications ・・P.17,18
12. Difficulty score and evaluated point of surgery ・・P.19
13. JHIFS operation index score ・・P.20
14. Degree of difficulty master manual (an excerpt from JHIFS tentative plan 2020) ・・P.21-25
15. Registration of post-operative complications ・・P.26
16. Operative procedure without applicable JHIFS tentative plan ID ・・P.27
17. Registration rules of postoperative complications ・・P.28
18. Score of postoperative complications ・・P.29
19. Wound Infection* ・・P.30
20. Flow chart of postoperative complications ・・P.31
21. The role of doctor, medical clerk, and medical information management officer ・・P.32
22. Presence or absence of blood transfusion ・・P.33
23. Changes in ADLs between admission and discharge from the hospital ・・P.33
24. Average length of hospital stay ・・P.34
25. Outcome (mortality) and re-admission ・・P.34
26. Schedules of survey processing each month ・・P.35
27. Flow of remote connection. Process of advice and guidance for solution ・・P.36
28. Run of remote access ・・P.37
29. Flow chart of report discussion ・・P.38, 39
30. Outline of peer review in case of emergency ・・P.40
31. Report A1 and A2 ・・P.41, 42
32. Transition of the results (each department) ・・P.43
33. Report of the results of the relevant department to the Evaluation Committee ・・P.44

34. Distribution of the results to each hospital-Report B1 ・・P.45
35. Results of each clinical department (hospital anonymization -Report-B2 ・・P.46
36. Simple data evaluation method ・・P.47, 48
37. Breakdown of complications (2018.4-2021.3) ・・P.49-51
38. Transition of complications in all target facilities ・・P.52
39. Transition of various complications in all target hospitals ・・P.53
40. Transition of all complications at each clinical department ・・P.54
41. Transition of the rate of hospital with death case ・・P.55
42. Complication scores (2018.4-2021.3) ・・P.56-77
43. Results of peer review from transition of monthly complications (1),(2) ・・P.78-79
44. Number and rate of complications by year in the nine departments ・・P.80
45. Three years general comment ・・P.81
46. Contact for peer review ・・P.82
47. Postscript ・・p.83-89

Introduction



The Tokushukai Medical Group (TMG) first started Peer Review System in 2017 in Japan as part of an approach to medical safety. Although usual peer review system being performed by overseas medical institutions is the one in which colleagues, doctors, and/or other medical staff evaluate the medical practice of a doctor, the present peer review system is different from the conventional system. In the present peer review system, each evaluation committee of nine departments evaluate the respective department as a third party and then, the president of the hospital make efforts to improve latent problems, thereby analyzing their overall scores derived from the seven evaluation items. When overall scores below the average of Group hospitals last more than three months or a clinical urgent problem is reported, the chairman of the evaluation committee of the respective department follow-up the cause by analyzing the various kinds of data collected by remote access through Tokushukai Information System (TIS), which summarizes the database of Tokushukai Medical Group hospitals. On finding any problem, he reports the details to the president of the respective hospital.

In the United States of America, the American Surgeon Association developed a Hospital certification program, which led to the Joint Commission on Accreditation of Health Care Organization (JACAHO) to improve medical safety in 1918, and the hospitals need the certification of JACAHO as a hospital covered by public medical system and private medical insurance for hospital management. Hence, medical facility and group medical care organizations are required for various kinds of measures and actions for securing medical quality and are obligated to prepare a peer review system. On the other hand, in Japan, trends towards medical safety and quality was growing, and peer review system became a prerequisite to acquire the certification of special function hospital notified by the Ministry of Health, Labour and Welfare to follow the TMG attempt.

A specific peer review initiative began in 2017 in the Department of Neurosurgery after one year preparation period and the number of involved departments has since increased to nine (surgery, cardiovascular surgery, orthopedics, urology, obstetrics and gynecology, ophthalmology, cardiovascular medicine, and digestive organ internal medicine). During these three years, the problems were solved in few hospitals. In 2019, the executive office moved to Tokushukai Headquarters, and the peer review system was improved not only to be easier to understand by reducing the burden of clerks-in-charge such as nurses, medical information management officers, and medical clerks, but also to be evaluated rapidly.

TMG would progress by seeking improvement in medical safety and quality while considering the quality of medical care, although we are tackling the coronavirus disease (COVID-19), which brings a sense of uncertainty to future medical care.

Hisaaki Abuso, M.D.

Hisaaki Abuso

President
Tokushukai Medical Group

Peer Review Practice

It has been 4 years since we started a tentative peer review plan with the TMG. During this period, we solved various kinds of problems that occurred at hospitals and have tried to reduce the time of medical staff to help. We would also improve our own peer review based on the hospitals' suggestions, although we know that the present peer review system still has many problems to be solved.

In the present peer review system, the data on problems occurring at hospitals and information such as medical records are obtained promptly through remote access to Tokushukai Information System, and the problems can be dealt with in the early stages. The present peer review system was permitted by an Ethical Review Board, and accelerated the resolution of issues by easy retrieval of pertinent information and data.

The current peer review format is different from that previously implemented in Europe and America, wherein evaluations are conducted in a one-on-one setting, namely a doctor's direct evaluation of the medical practice. Although the law protects the evaluator from any lawsuit (the Health Care Quality Improvement ACT and Medical Staff By-Laws from 1986) in the U.S. and Europe, no such laws exist in Japan. Further, peer review is standardized, consisting of 7 evaluation items that do not rely on an evaluator's personal judgment. Therefore, the present peer review system is performed in only TMG and is focused only to the scores of 7 evaluation items.

Here, a hospital is visited by the peer review execution committee, and discussions regarding "repeated problematic affairs such as the poor surgical results" with hospital executives and departments are conducted. Solutions and suggestions are given in order to facilitate improvement across the whole department. Therefore, problems, such as operative indications for a disease, treatment policy, treatment course, and other issues (e.g., power harassment) within the medical team are not included and evaluated. These problems should be a component of the evaluation, but are not currently considered.

Executive Committee

Hidemitsu Nakagawa, M.D.
Mitsugu Fukuda, M.D.
Nobuaki Shinozaki, M.D.
Shinichi Higashiue, M.D.
Yasuyoshi Fukushima, M.D.
Director Hisaaki Abuso, M.D.

Implementation details from Peer Review Secretariat

It has been 3 years in April this year since hospital peer review across 9 departments started and would have passed 4 years when the pioneered peer review at neurosurgical department is added. There are many hospitals which received various indications based on the results obtained from the 7 evaluation items, and some doctors were forced to stop surgery. However, it is no exaggeration to say that medical staff including medical doctors were going to turn their eyes towards medical quality and safety. When we listed the problems, there were many important problems: various problems of evaluation items, especially consideration for differences in circumstances between emergency and stand-by surgery, difference in questionnaire collection rate among hospitals, lack of man power or staff in charge, collecting data on the reason for the longer duration to complete surgery, lack of information on the case when the chairman of evaluation committee of each department judges, and corresponding action when emergency problems are reported. In order to improve these matters, we modified the system. First, it became possible to collect data of medical records rapidly by remote access through TIS under the permission of Tokushukai Ethical Committee. Second, we removed the questionnaire because of differences in collection rate among hospitals. Third, we separately evaluated the emergency from stand-by surgery at three departments (cardiovascular surgery, surgery, and neurosurgery) considering the difference in circumstances between emergency and stand-by surgery. Thus, we revised it to impart a high degree of perfection.

Last, we have a request to doctors. It is important to describe the medical record, especially the presence or absence of complications and their contents when complications exist.

Management department of Medical safety and quality
General incorporated association Tokushukai
Kenta Nishihira

Medical Corporation Tkokushukai, Nozaki Hospital
Mitsuru Yatani
Hideto Kanazawa
Hidemitsu Nakagawa

Tokushukai Information System
Ai Inagaki
Ai Shiragami
Atsushi Manabe

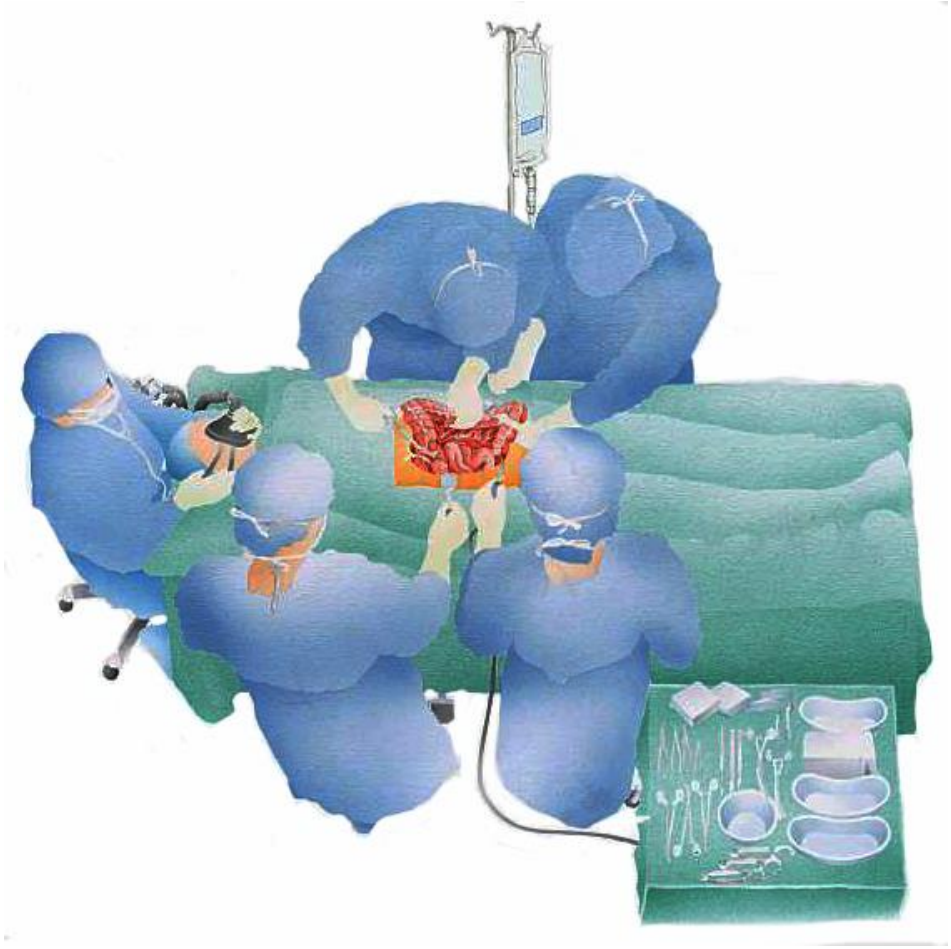
Manual related to peer review operations

1. What is peer review?
2. Target hospital for the peer review
   (1) Target hospital for each medical department
3. How to evaluate surgical results (intravascular and endoscopic surgery are included) in monthly peer review
   Nine medical departments dealing with surgery and intravascular and endoscopic surgery:
   neurosurgery
   orthopedics
   obstetrics & gynecology
   cardiovascular surgery
   cardiovascular medicine
   urology
   general surgery
   digestive organ internal medicine
   ophthalmology
   (1) Operation time and master manuals outlining degree of difficulty for a surgical technique: Expert from the JHIFS (Japanese Health Insurance Federation for Surgery), tentative plan (2016)
   (2) Registration of postoperative complications
   Ten selected complications
   Method for not overlooking surgical complications
   (3) With or without blood transfusion
   (4) Difference in activities of daily living (ADLs) between pre- and post-surgery
   (5) Rate of readmission within 2-weeks post-discharge
   (6) Outcome (mortality within one-month after discharge)
   (7) Average length of hospital stay

4. Report peer review results to the executive committee, the evaluation committee, and the hospitals in monthly peer review
5. Peer Review in case of an emergency

1. What is peer review?

We present a hospital peer review (monthly and emergency) for the purpose of improving medical safety and care quality by focusing on invasive treatment outcomes at each TMG hospital. The aim of this peer review is not to promote competition between hospitals but to find latent problems that can be solved in order to improve care quality and safety when making comparisons based on TMG benchmarks.



Peer Review

Surveys for surgical results (every month and emergency)

The survey is performed using daily medical records. This survey is performed in conformance with the guideline established by Ministry of Health, Labour and Welfare and Labor and the Ministry of Education, Culture, Sports, Science and Technology, including the *Ethical Guidelines for Medical and Health Research Involving Human Subjects* established on December 22, 2014. We act to publicly release information about the survey's purpose and methods instead of obtaining each targeted patient's consent. No information or data that may identify a specific individual is published or presented in meetings.

1. Survey targets

The survey targets those patients who undergo (or have undergone) invasive surgeries between April 2019 and March 2024 in nine departments of target hospitals; their medical care records will also be used for investigation.
Nine relevant departments: Neurosurgery, Surgery, Obstetrics and Gynecology, Urology, Cardiovascular medicine, Orthopedics, Cardiovascular surgery, Ophthalmology, Gastroenterology.

2. Purpose and methods

Patients' medical records are investigated through the Tokushukai Information System and the results derived from all patients of the nine departments in each hospital are evaluated by comparing them to the benchmark set by Tokushukai Medical Group Hospitals.

The time period is specified as being between the date that permission was received from the director of the general incorporated association Tokushukai and June 2024.

3. Refusal for utilization of information

The survey using information from medical records does not use information regarding those patients who do not consent, or whose proxy does not consent, to their records being included for survey data. Please feel free to contact for details and inquiries regarding refusal of participation. Patients who refuse participation will not suffer any detriment related to their refusal.

4. Specific included patient record data

The specific patient data used for survey purposes includes admission date, discharge date, readmission date, disease or condition treated, postsurgical complications, ADL on admission and discharge, surgical records, nursing records, and image recordings.

5. Protection of data

Provision of patient data through the TIS Co., Ltd. (the company that manages the medical records of each hospital), to those persons in charge of survey data is performed in such a manner that a third party, except for a specified person concerned with a constituent, can not access the medical records.

6. Reference

Please directly contact us by telephone.
The planning worksheet and related materials are open within the limits of protecting personal information and intellectual property

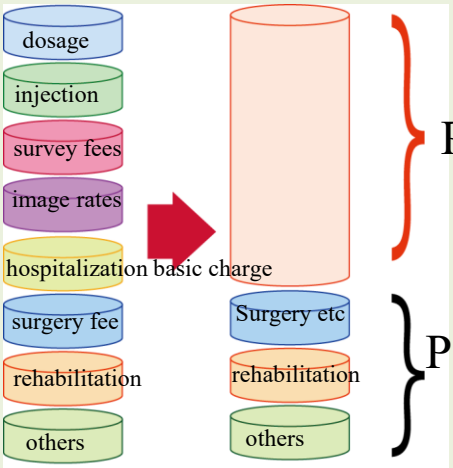
Kenta Nishihira
Department of Medical Safety and Quality
General Incorporated Association Tokushukai
3-1 kudan-minami 1-Chome, Chiyoda-Ku, Tokyo, 102-0074 Japan
14th Floor, Chiyoda Building
Telephone: 03-3262-3133

7. Investigation Activities

Person in charge: Hidemitsu Nakagawa, M.D., Ph.D.
Managing Director
Tokushukai Medical Group

2. Target hospitals for the peer review

Hospitals were chosen if the following 3 conditions were met: a DPC hospital, which included an electronic medical record system, and where surgical operations are performed.



Paied by DPC

Paid on a piecework basis

DPC hospitals



An electronic medical record system



Invasive treatments (surgical operations, intravascular and endoscopic surgeries)

(1) Target Hospitals

Neurosurgical Department: 29 hospitals	Surgical Department: 48 hospitals	Obstetrics and Gynecology: 25 hospitals
Matsubara	Sapporo	Sapporo
Nozaki	Sapporohigashi	Kyoaikai
Kishiwada	Kyoaikai	Chiba
Yao	Obihiro	Chibanishi
Nanbu	Shonaiamarume	Shonankamakura
Fukuoka	Sendai	Shonanfujisawa
Uji	Chiba	Shonanatsugi
Shonanfujisawa	Chibanishi	Chigasaki
Yamato	Yotsukaido	Hanyu
Sapporo	Kamagaya	Uji
Hanyu	Yamato	Nozaki
Sapporohigashi	Naritatomisato	Matsubara
Sendai	TokyonishiMusashino	Yao
Nagoya	Shonankamakura	Kishiwada
Chiba	Shonanfujisawa	Suita
Nagasakikita	Shonanatsugi	Izumishiritsu
Chubu	Chigasaki	Kobe
Shonankamakura	Hanyu	Takasagoseibu
Chibanishi	minano	Ikomashiritsu
Shonaiamarume	Koga	Izumo
Nase	Haibara	Fukuoka
Shirane	Shirane	Nase
Tokyonishi	Ogaki	Tokunoshima
Yotsukaido	Nagoya	Yakushima
Izumo	Omikusatsu	Nanbu
Kamagaya	Uji	
Ogaki	Nozaki	
Suita	Matsubara	
Naritatomisato	Yao	
	Kishiwada	
	Suita	
	Izumishiritsu	
	Takasagoseibu	
	Ikomashiritsu	
	Kobe	
	Uwajima	
	Izumo	
	fukuoka	
	Nagasakikita	
	Kagoshima	
	Nase	
	Tokunoshima	
	Osumikanoya	
	Yakushima	
	Chubu	
	Nanbu	
	Miyakojima	

Urology Department: 29 hospitals	Cardiovascular Medicine: 40 hospitals	Cardiovascular Surgery Department: 24 hospitals
Sendai	Matsubara	Sapporohigashi
Chiba	Yao	Shonaiamarume
Chibanishi	Sapporo	Sendai
Kamagaya	Sapporohigashi	Chiba
Naritatomisato	Obihiro	Chibanishi
Tokyonishi	Shonaiamarume	Kamagaya
Musashino	Sendai	Tokyonishi
Shonankamakura	Chiba	Shonankamakura
Shonanfujisawa	Chibanishi	Shonanfujisawa
Shonanatsugi	Kamagaya	Shonanatsugi
Chigasaki	Yamato	Hayama heart center
Hanyu	Naritatomisato	Haibara
Haibara	Tokyonishi	Nagoya
Nagoya	Musasino	Uji
Uji	Shonankamakura	Nozaki
Nozaki	Shonanfujisawa	Matsubara
Matsubara	Shonanatsugi	Yao
Yao	Hayama heart center	Kishiwada
Kishiwada	Hanyu	Suita
Suita	Minano	Kobe
Izumishiritsu	Koga	Fukuoka
Ikomashiritsu	Shizuoka	Osumikanoya
Uwajima	Haibara	Chubu
Fukuoka	Ogaki	Nanbu
Kagoshima	Nagoya	
Tokunoshima	Nozaki	
Chubu	Uji	
Nanbu	Kishiwada	
Miyak ojim	Suita	
	Izumishiritsu	
	Kobe	
	Takasagoseibu	
	Ikomashiritsu	
	Uwajima	
	Fukuoka	
	Kagoshima	
	Tokunoshima	
	Osumikanoya	
	Chubu	
	Nanbu	

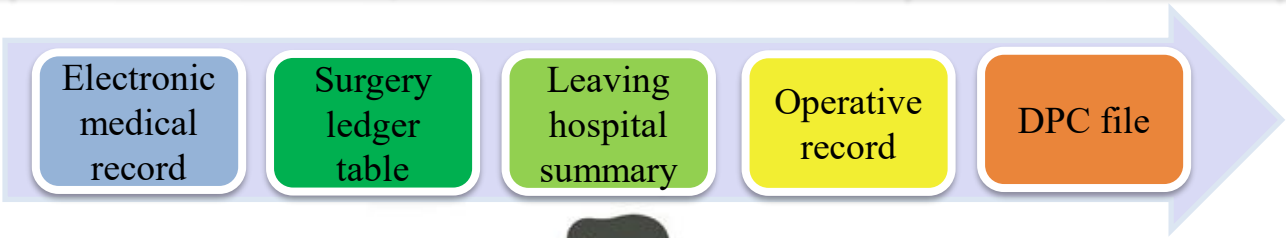
Orthopedics Department: 47 hospitals	Digestive organ internal medicine Department: 44 hospitals	Ophthalmology Department: 22 hospitals
Sapporo	Sapporo	Sapporo
Sapporohigashi	Sapporohigashi	Sapporohigashi
Kyoaikai	Kyoaikai	Sendai
Obihiro	Obihiro	Chibanishi
Shonaiamarume	Sendai	Kamagaya
Sendai	Chiba	Shonankamakura
Chibanishi	Chibanishi	Shonanfujisawa
Yotsukaido	Kamagaya	Hanyu
Kamagaya	Naritatomisato	Koga
Yamato	Tokyonishi	Ogaki
Naritatomisato	Musashino	Nagoya
Tokyonishi	Shonankamakura	Uji
Musasino	Shonanfujisawa	Nozaki
Shonankamakura	Shonanatsugi	Matsubara
Shonanfujisawa	Chigasaki	Yao
Shonanatsugi	Yajmato	Suita
Chigasaki	Hanyu	Takasagoseibu
Hanyu	Minano	Fukuoka
Minano	Koga	Nase
Koga	Shizuoka	Tokunoshima
Shizuoka	Haibara	Yakushima
Haibara	Ogaki	Chubu
Shirane	Nagoya	
Ogaki	Uji	
Nagoya	Nozaki	
Ohmikusatsu	Matsubara	
Uji	Yao	
Nozaki	Kishiwada	
Matsubara	Suita	
Yao	Izumishiritsu	
Kishiwada	Takasagoseibu	
Suita	Ikomashiritsu	
Izumishiritsu	Uwajima	
Kobe	Fukuoka	
Takasagoseibu	Nagasakikita	
Ikomashiritsu	Kagoshima	
Uwajima	Nase	
Izumo	Tokunoshima	
Fukuoka	Osumikanoya	
Nagasakikita	Yakushima	
Kagoshima	Chubu	
Nase	Nanbu	
Tokunoshima	Miyakojima	
Osumikanoya		
Chubu		
Nanbu		
Miyakojima		

3. Evaluation items

There are 7 evaluation items, and data is extracted from the TIS (Tokushukai Information System).

*Degree of patient satisfaction (Patient's evaluation of the hospital stay) is deleted from the evaluation item in April 2019.

Evaluation item		Evaluation content	Data source
1	Surgery	Degree of difficulty and surgical time	Electronic medical record (the hospital-surgery ledger table)
	Endovascular treatment	Degree of difficulty	
2	Postoperative complications Existence or non-existence	Frequency of complications	Electronic medical record (Hospital summary)
3	Existence or non-existence of blood transfusion	Frequency of unnecessary use	Electronic medical record (The operative-record)
4	Difference in activities of daily living (ADL) between pre- and post- surgery	Evaluation of treatment results	Electronic medical record (The DPC file)
5	Average length of stay	Evaluation during the treatment period	Electronic medical record (The DPC file)
6	Outcome (mortality rate)	Evaluation of treatment results	Electronic medical record (The DPC file)
7	Rate of re-admission	Evaluation of treatment results	Electronic medical record (The hospital table)





(1) Operations and endovascular treatment

An evaluation of operations was performed based on degree of difficulty (JHIFS score) and required time for each technique. However, for endovascular treatment, the evaluation only included degree of difficulty (JHIFS tentative plan, 2018: Japanese Health Insurance Federation for Surgery). Day surgery is not evaluated.

Calculation Method

The evaluation unit for the data's origin is based on the electronic medical record (the operation ledger table; each technique is labeled as 1).

The evaluation point for the surgery is obtained from two items: surgical time and degree of difficulty (derived from the JHIFS tentative plan, 2018)
As for endovascular treatment, the data origin is the electronic medical record (the operation ledger table).

Point calculation: Add up all points for the operation and endovascular treatment; the total points during a one-month period are divided by the number of surgeries. The obtained value is expressed as the evaluation point for operations and endovascular treatment.

*Required operation time.

A calculation method is created as the average required time directed near the median of 12 months from the previous month in question for every example group (JHIFS, 2018). The standard for the required surgical time is determined as follows:20% above or below the median time. The case excluding twice the average at one's own hospital or equal to or less than 1/2 of the "coming-off value" were also determined to be evaluated on April, 2019, and we do not ask anymore each hospital about the longer or shorter operation time from the peer review secretariat because of this change. Outliers are determined based on the standard deviation of the mean surgical time (5=shorter than standard; 3 = standard; 0 = longer than standard).

Method of registration and calculation of postoperative complications

Evaluation item No.2. , “postoperative complications” is defined as complications that occur during surgery and/or within one month post-surgery.

Plurality of hospital registration—processing only one summary per one admission

A. Input rule

- For patients who underwent surgeries in several medical departments, input only one complication for each department.
- For patients having only one surgery but who were moved to several departments, input one complication only in the department where the patient underwent surgery and input “no surgery” for the each of the other departments.
- For patients who underwent multiple surgeries, please input only one complication of the main surgery.

B. Input examples

Case 1 : During one admission, a patient underwent surgeries in two departments: neurosurgery and orthopedics.

- The surgical complications in the department of neurosurgery were “permanent sequela” and “re-operation;” the in the department of orthopedics there was “no complication”

Therefore, one complication is to be reported for each department: Please input “permanent sequela” for the department of neurosurgery; input “no complication” for the department of orthopedics.

Case 2 : During one admission, a patient underwent only one surgery at the department of neurosurgery, although the patient was moved to another department.

- Therefore, as one surgery occurred in one department even though the patient moved to another department: Please input the one complication for the department of neurosurgery; input “no surgery” in the other department.
- Be aware of registering a maximum of one complication for each department.

Case 3 : Only one surgery was performed during admission.

- For patients who experienced more than one complication but only one surgery: Please input only the worst of the two complications.

・Please note: You may input only one complication for one surgery

Case 4 : Multiple surgeries were performed during admission to the same department.

・For patients who underwent several surgeries in only one department: Please input only one complication of the main surgery.

※the degree of difficulty (score)

First, we set the degree of difficulty (score) based on the table of medical fee points prescribed by Japanese health insurance system

(Thus far, the degree of difficulty score is based on a medical remuneration point table (equal to or less than 5,000 is 0; 5,000 to 10,000 is 2; 10,000 to 50,000 is 3; 50,000 to 100,000 is 4; and more than 100,000 is 5).

We decided to set the degree of difficulty (score) based on the operation index (degree of difficulty of the technique based on a master manual) from 3,386 published techniques (JHIFS, 2020) as follows:

Difficulty score and evaluated point	
0～1.99	1 point
2～5.99	2 points
6～29.99	3 points
30～39.99	4 points
40～	5 points

Set scores based on the operation index from the JHIFS tentative plan (2020) are as follows:

	Set score	JHIFS operation index score
One point:	0	1.99
Two points:	2	5.99
Three points:	6	29.99
Four points:	30	39.99
Five points:	40	

JHIFS operation index score

The JHIFS operation index is used based on actual requirements set by the DPC hospital group in 2012. The medical service fee calculation at every facility depends on a basic coefficient and the function evaluation coefficient (I, II). A basic coefficient is calculated under the basic function and role at each facility within every hospital in DPC I, II, III. That is, I is a group at a university hospital, and 80 facilities are equivalent; group II is aligned with a hospital that has a treatment density based on a university hospital with a certain function; 99 facilities correspond throughout the country at present. Group III is a DPC hospital, except for groups I and II, and includes 1,406 hospitals in Japan. On average, the basic coefficient increases (group I: 1.1351; group II: 1.0629; group III: 1.0276) as you move from I, to II, to III. With the exception of university hospitals, entering group II is favorable for management.

Four actual requirements are specified for transitioning to group II: (1) medical density (average mark of a yield per day within the inclusion range), (2) implementation of doctor medical training (number of employed doctors in the clinical practice per bed), (3) implementation of advanced medical technology, and (4) able to treat patients' serious conditions (the complex index). When all requirements are satisfied, a hospital can enter group II.

A JHIFS operation index for every operation (i.e., a JHIFS operation index for every DPC bed calculation) is used to (3) implement advanced medical technology. Thus, a JHIFS operation index is utilized to accomplish the aforementioned transition.

The method for calculating a JHIFS operation index for each operation technique is as follows: summing and calculating each object surgery aggregated and weighted, taking into account the operation hours relative to personnel expenses based on the number of surgeons specified in the 8.2 edition of the JHIFS tentative plan (Chart 6-1). It is meaningful that the JHIFS tentative plan is utilized as an index of advanced medical technology, and the JHIFS is publicly recognized as highly reliable.

Degree of difficulty master manual

The surgical techniques related to each medical department are described in the master manual.
It is impossible to do a correct evaluation when the surgical technique does not correspond to a subscription (or registered by manual input) without selecting the correct technique.

Degree of difficulty master manual
An applicable surgical procedure for each clinical department is registered in the master manual. When an applicable surgical procedure is not correctly selected, when it comes time for a summary registration, and a manual input is performed without selecting the correct surgical procedure, an accurate evaluation cannot be performed.

Master manual for neurosurgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Neurosurgical Procedures	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K176 1	clipping of inflow blood vessel for cerebral aneurysm, one place	82,730	5	necessary	42.5
K166	total removal of brain tumor	36,500	3	necessary	28.4
K164 3	intravascular embolization of cerebral aneurysm	47,020	3	unnecessary	28.4
K160-2	microvascular decompression in the cranial fossa	43,920	4	unnecessary	31.86
K174 2	surgery of hydrocephalus. shunt	24,310	4	unnecessary	10.62

Master manual (limited to neurosurgical departments) for intravascular surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Intravascular surgical procedures	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K178 3	intravascular surgery, with stenting	82,850	5	unnecessary	41.09
K178-31	In the case of a cerebral blood vessel, percutaneous selective intravascular cerebral thrombolysis	36,280	3	unnecessary	14.16
K178-4	percutaneous intravascular thrombectomy	33,150	3	unnecessary	14.16
K615-3	percutaneous intravascular embolozation	18,620	3	unnecessary	15.2

Master manual for the orthopedic surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures in orthopedics	Points	Degree of difficulty (score)	Blood transfusion necessary?	Opera-tion index
K037-2	surgery of Achilles tendon rupture*	8,7100	3	unnecessary	7.082
K081 1	artificial head bone replacement surgery	19,500	3	necessary	10.62
K048 2	removal of foreign body in bone. hip	7,870	3	unnecessary	7.08
K044 1	Non-invasive reduction surgery for a bone fracture▪ humerus	1,600	2	necessary	2.48
K046 2	fracture open surgery-antebrachial bone	15,980	3	necessary	14.16

Master manual for obstetrics and gynecology surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures in obstetrics and gynecology	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K895	Perineum (vulva) incision and perineum suture (at the time of delivery)	1,530	1	unnecessary	0.64
K851 2	perineum plastic surgery (extending to the muscular layer)	6,910	2	unnecessary	4.98
K849	removal of external genitalia tumor	2,340	1	necessary	1.66
K888 1	removal of uterine adnexal tumor(bilateral) by abdominal surgery	17,080	3	unnecessary	14.16
K879 2	laparoscopic surgery of uterus malignancy	70,200	4	necessary	36.8

Master manual for cardiovascular surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures of cardiovascular surgery	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K562 2	surgery of patent ductus arteriosus surgical closure of patent ductus arteriosus) (open surgery)	22,000	2	necessary	5.37
K560 7	aortic aneurysm resection (anastomosi, or graft)	52,000	4	necessary	35.4
K567 3	Surgery of aortic transection (for complex heart malformations)	173,620	5	necessary	114.66
K569	Tricuspid valve surgery (“EPUSUTAIN” malformation)	103,640	5	necessary	76.44

Master manual for urology surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures in urology	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K7732	nephrectomy	18,760	3	necessary	14.32
K773 2	Removal of malignant tumor of kidney and ureter by laparoscopic surgery	64,720	4	necessary	36.8
K804	removal of urachal	10,950	3	necessary	7.16
K794-2	Transurethral resection of ureterocele	15,500	2	unnecessary	3.77
K843-4	Laparoscopic surgery of prostate tumor	95,280	4	necessary	31.86

Master manual for general and visceral surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures in general and visceral surgery	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K672-2	laparoscopic cholecystectomy	21.5000	3	unnecessary	14.162
K477	incision of chest wall abscess	700	1	unnecessary	0.25
K478	costal osteomyelitis or costal caries surgery	8.950	3	unnecessary	7.16
K521 1	induction surgery for esophagus abscess incision (open chest)	28.210	3	necessary	21.24
K657-2	total gastrectomy・malignant tumor surgery	69.840	4	unnecessary	36.8

Master manual for gastroenterology surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures in gastroenterology	Points	Degree of difficulty (score)	Blood transfusion necessary	Operation index
K522 1	endoscopic esophageal stricture dilatation	9.450	2	unnecessary	2.76
K664	endoscopic gastrostomy	6,070	3	unnecessary	9.12
K653 1	endoscopic treatment of gastric ・duodenum poly endoscopic mucosal resection (early malignant tumor)	6.460	2	unnecessary	2.76
K688	endoscopic biliary stenting	11.540	3	unnecessary	12.98

Master manual for ophthalmology surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2018)

K cord	Procedures in Ophthalmology	Points	Degree of difficulty (score)	Presence or absence of blood transfusion necessary	Operation index
K229	removal of orbital foreign body (superficial)	8,240	2	－	4.56
K230 1	removal of orbital foreign body (deep seated), orbital apex	27.460	3	－	21.24
K235	Removal of orbital tumor (deep seated)	45,230	4	－	35.22
K242 1	strabismus surgery(advancement)※ 5)	4,280	1	－	1.66

master manual for cardiology surgical degree of difficulty (extracted partly from the JHIFS tentative plan, 2020)

K cord	Procedures in cardiology	Points	Degree of difficulty (score)	Blood transfusion necessary?	Operation index
K546 1	percutaneous coronary angioplasty・acute myocardial infarction	32.000	3	—	17.7
K549 2	percutaneous coronary stent graft implantation・for unstable angina	24.380	3	—	14.16
K551 1	coronary angioplasty (thromboendarterectomy)・for one place	76.550	5	—	42.48
K616	angioplasty･limbs	22.590	3	—	14.16

Gaihoren is the Japanese Health Insurance Federation for Surgery (JHIFS:Japanese Health Insurance Federation for Surgery).
The JHIFS is an organization that attempts to rationalize medical service fees on an empirical basis. The JHIFS comprised 96 societies as of December 2018.
The JHIFS tentative plan is determined by members of the surgical societies based on health insurance treatment provisions by calculating scores that consider various kinds of factors through scholarly discussions.

2. Registering post-operative complications.

The presence of post-operative complications was assessed within 1-month post-surgery. In the present peer review, the list of surgical complications is unique from those determined by the JCI and consists of the following:

1. Death
2. Permanent sequela
   Neurosurgery: higher-order mental dysfunction, aphasia, paresis, cerebral infarction, etc.
   Obstetrics and gynecology: infertility, sexual dysfunction, urinary tract change.
   Cardiovascular surgery: cerebral infarction, renal insufficiency, cardiac insufficiency, spinal nerve impairment.
   Urology: nephrectomy due to massive bleeding from the kidney or vascular injury, permanent renal failure from acute renal failure, ureterocutaneous fistula caused by surgical ureter trauma, urinary diversion after a bladder prostate urethral injury during surgery
   General surgery: paralysis of recurrent nerve in the respiratory surgery area, short bowel syndrome after bowel resection, colostomy, malnutrition and glucose intolerance after pancreatectomy in the gastrointestinal surgery area.
   Ophthalmology: impaired vision (visual acuity, visual field, the double vision, etc.)
   Gastroenterology: stenosis and passing failure
   Orthopedics: sensory and motor palsy caused by nerve impairment, destruction of joint that accompanies a nerve disorder
3. Re-operation
4. Medical safety problems (damage caused by human error, etc.)
5. Infection: wound infection (acute infection in the surgical wound, expanding infection)
   *With reddish wounds, if it is improved by removing stitches without prescribing an antibiotic, it is not included.
6. Deep infection (meningitis, mediastinitis, sepsis, etc.)
7. Post-operative bleeding
8. Ejection bleeding (ophthalmology)
9. Rupture of vessels (cardiovascular medicine)
10. Post-operative thrombosis, pulmonary embolism, multiple organ damage
11. Post-ERCP pancreatitis
12. Perforation (gastroenterology)

Operative procedure without applicable JHIFS tentative plan ID

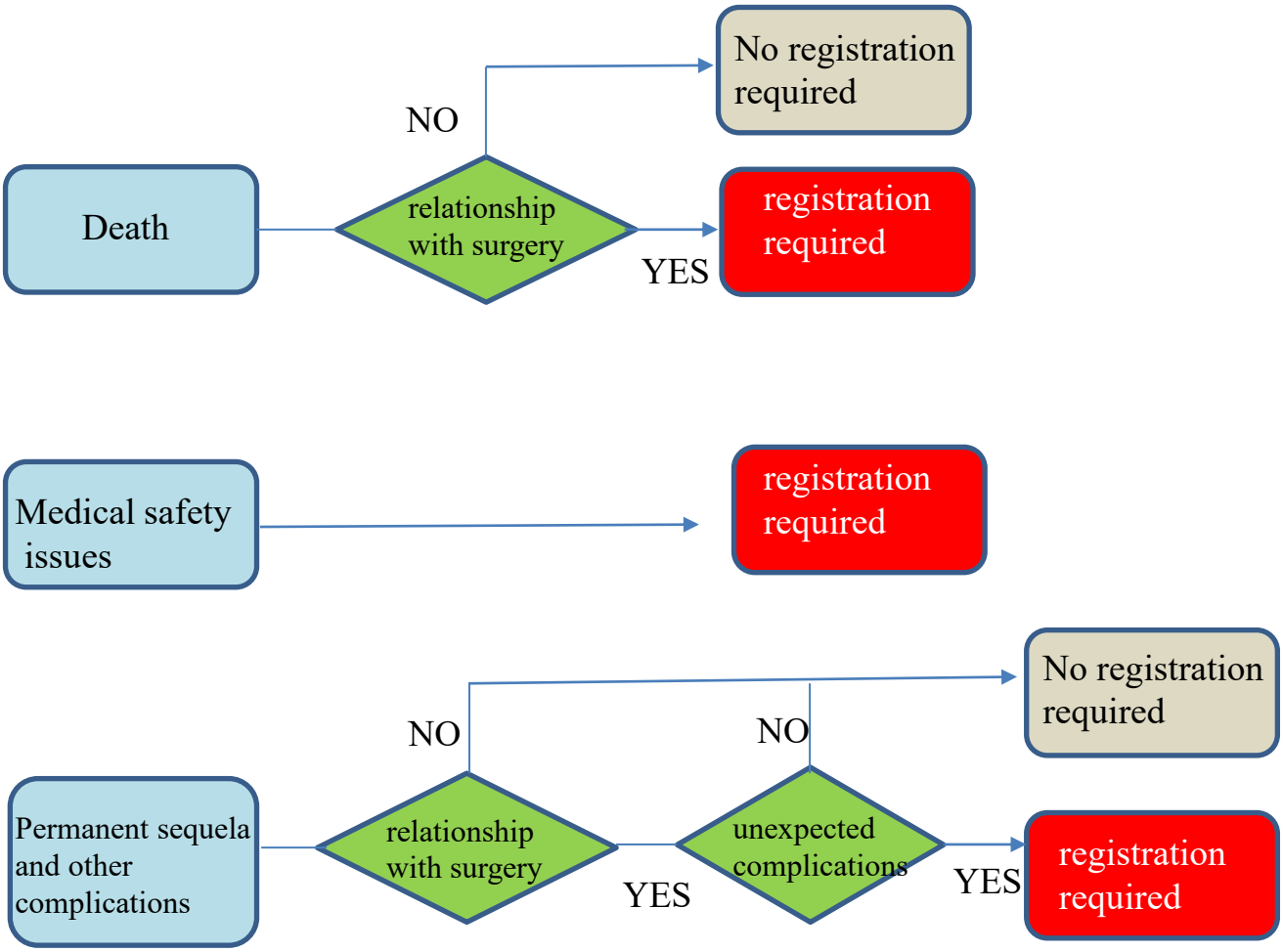
Peer review is performed by using JHIFS tentative plan and operative procedure defined by operative K cord is replaced by JHIF ID. However, there is some procedures whose operative K cord are matched to JHIF ID.

For example

Operative K cord K617-6 (endovascular embolization of varicose veins of the lower extremities) matched to JHIFS ID does not exist.

In this case, it is necessary to register similar ID (similar operative procedure as much as possible) on the selection screen of operative procedure of the peer review management screen. When it just doesn't work , exclusion from evaluation is determined.

Registration rules of postoperative complications



Medical Safety issues imply body damage such as bone fracture, trauma, and fall caused by human error.
Postsurgical complications should be registered regardless of the timing of occurrence.
When the effects of surgery are recognized in the case of death, the case is registered under postoperative complications.
Only unexpected complications are registered in permanent sequela and other complications.

Score of post-operative complications

(adapted to all clinical Departments)

Death	minus 20 points
Permanent sequela	minus 20 points
Re-operation	minus 10 points
Medical safety problems	minus 10 points
Infection	
Deep infection	minus 10 points
Post-operative bleeding	minus 10 points
Ejection bleeding	minus 10 points
Rupture of vessels	minus 10 points
Post-operative thrombosis, pulmonary embolism, multiple organ damage	minus 10 points
Post-ERCP pancreatitis	minus 10 points
Perforation (gastroenterology)	minus 5 points

No complications : 0 points

Wound Infection*

Wound infections are defined below

Acute infection in a surgical wound

Typical signs and symptoms:

- de novo or worsening pain
- localized sensation of heat
- swelling
- purulent discharge
- fever
- delay of recovery of the affected part of the skin
- abscess
- bad smell

Expanding infection

In addition to the appearance of local infection:

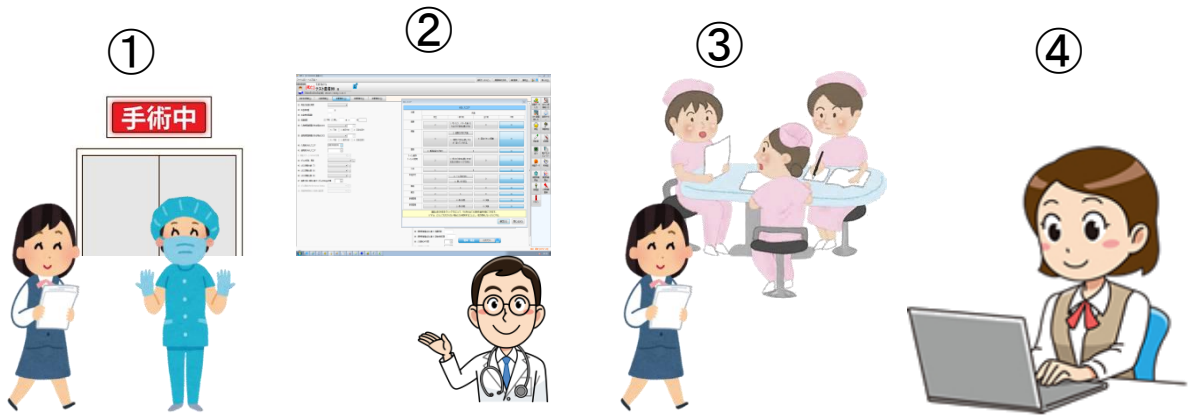
- extension of erythema
- Lymphangitis
- crepitus of soft tissue
- rupture of wound▪wound dehiscence

*This complication does not include cases of wounds that only heal after removal of stitches without administration of antibiotics.

Flow Chart of registration of postoperative complications

The doctor registers postoperative complications on discharge summary, and medical clerk checks for deficiencies. Subsequently, she reports the fact to medical information management officer. In this way, they work together.

Medical clerk (medical assistant) → Doctor → Medical clerk (medical assistant) → Medical information management officer



① Medical clerk collects information about complications of each surgery performed on the previous day from the nurse.

② The doctor registers the complications on discharge summary

③ The medical clerk reconfirms the presence or absence of complications

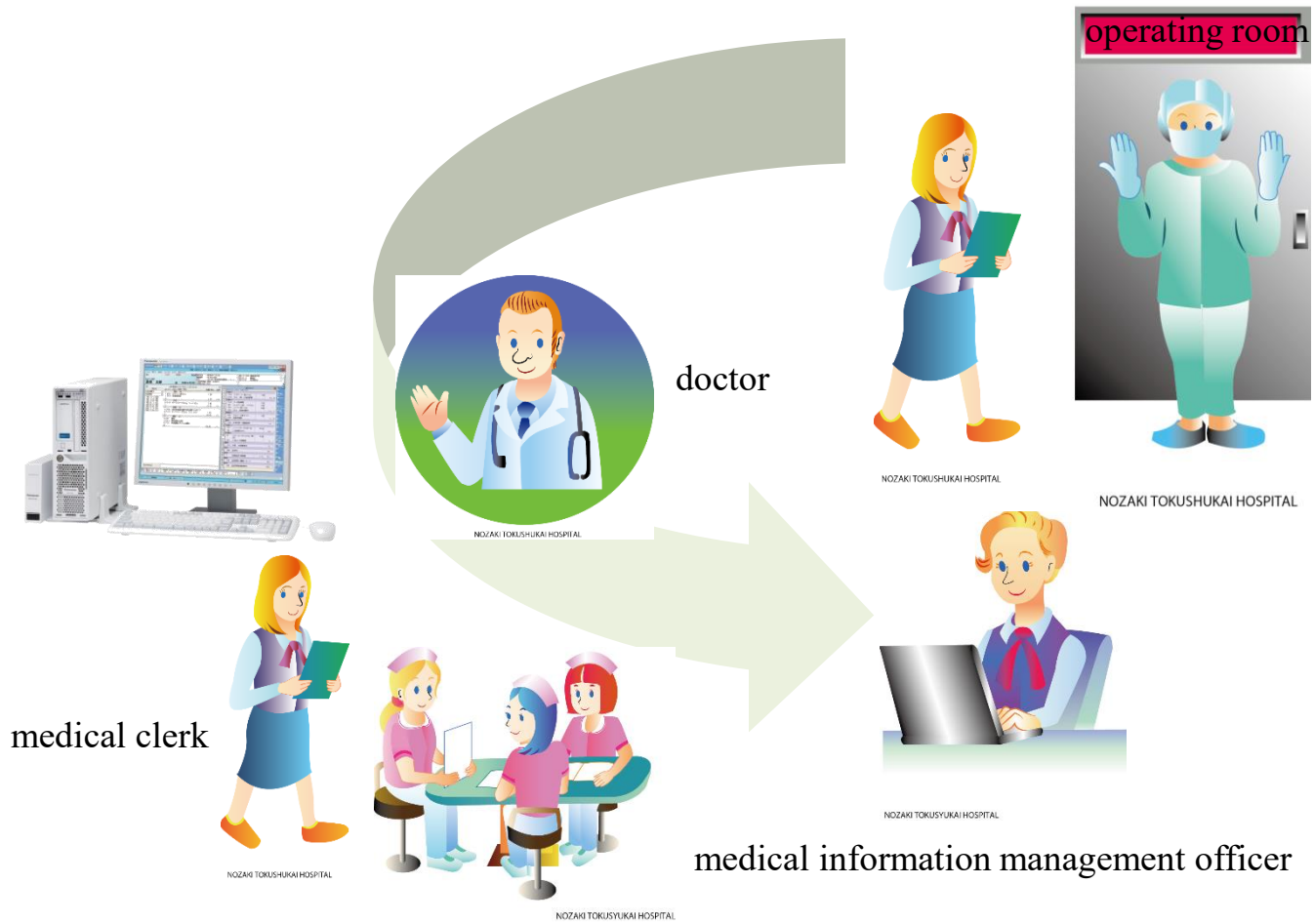
④ The medical information management officer confirms the complications in the office

*The Clavien-Dindo classification is closely related to the postoperative-course and is a handy and excellent grading system. In the future, we suggest using grades with reference to the JCOG (Japanese Clinical Oncology Group) post-operative complication standards through the Clavien-Dindo I~V grading system.

* The registration of post-operative complications is demonstrated in a flow chart

We employed a double-check system so as to avoid overlooking any post-operative complications. Doctors will typically register post-operative complications in the discharge summary. Moreover, the medical clerk confirms whether or not there is a lack of content and cooperates with the medical information management officer. The medical clerk will try to obtain information regarding complications during all surgeries performed on the previous day from relevant nurses.

First, the doctor checks for post-operative complications using a diagnostic management screen from the discharge summary housed within the electronic medical record. Next, the medical clerk confirms whether a complication is present to the nurse in charge of the patient. A report to the medical information management officer is produced if/when new post-operative complications arise .



3. Presence or absence of a blood transfusion

The frequency of the unnecessary implementation of a blood transfusion was also evaluated.
Data origin: Electronic medical record (operative-note)
Evaluation unit: each surgery
A blood transfusion is deemed necessary or unnecessary based on the surgical technique master manual (Gaihoren tentative plan: JHIFS tentative plan , 2016). Five points are added if a blood transfusion was not used despite it being necessary and no points are added if the blood transfusion was done as necessary (or was not done and unnecessary). Minus 5 points is added if the blood transfusion was performed unnecessarily.
A blood transfusion is necessary if there if a specific surgical technique that requires the use of a transfusion.

It is necessary, but it was not performed.	**5**
It was performed and was necessary or it was not necessary and was not performed.	0
It is not necessary but was performed.	-5

*When the surgical technique from the operative note corresponds to neither the existence nor non-existence of a transfusion (the operation), an evaluation is not possible.

4. Changes in ADLs (activities of daily living) between admission and discharge from the hospital

In terms of changes to ADLs between admission and discharge, treatment results are evaluated. This change reflects the grade of improvement related to convalescence and post-operative prognosis. Changes to ADLs are evaluated during hospitalization.
Data origin: Electronic medical record (DPC form 1)
Evaluation unit: 1 patient per admission
Don't use Check box 9, “unclear.”
It is not possible to properly evaluate.
When the ADL score changes, correct as follows:
Transferring/walking 3 = 2 points, 1 or 2 = 1 point, 0 = 0 points
Cosmetic cleaning, bathing 1 = 2 points, 0 = 0 points
higher than 5 points = 10 points, 1~4 points = 5 points, 0 point = 3、minus = 0 points



5. Average length of hospital stay

Average length of hospital stay is evaluated during the treatment period.
A median period of stay (as a standard value) is calculated for each disease group (6 digits of the DPC) from the past 12 months.
Five points are added if the stay is 20% shorter than the standard, and 0 points are given if the stay is longer than 20% of the standard.
Cases that are twice (or equal or less than ½) the standard average were to be also included from April, 2019..



NOZAKI TOKUSHUKAI HOSPITAL

6. Outcome (mortality)

Mortality outcomes are evaluated as treatment results.
Data origin: electronic medical record (DPC form 1) admission-discharge table, operation ledger table-DPC file, and patient master table
Evaluation unit: one-by-one
Death within 1-month is a 0, and 10 points are given if still alive.

7. Re-admission rate

Re-admission rates are evaluated as treatment results.
Data origin: electronic medical record (admission-discharge table)
Evaluation unit: each admission
Zero points when re-hospitalized within 2 weeks to the same department;
10 points are given if not re-admitted.
The total points are divided by the number of patients.
*A true re-hospitalization is the object of this peer review;
outpatient re-hospitalizations (example: radiation therapy, chemotherapy, etc.) are excluded.
All re-hospitalizations are based on information from the secretariat of each department.

Schedules of survey processing each month

First to 10th day of every month

Extraction of the data at TIS. The data that is delivered to the website is dedicated for peer review. Each hospital revises the data during the first two weeks.

Two weeks after the beginning of survey

Each confirmation process is carried out after the completion of the data revision at each hospital (it is no longer possible to revise the data from the hospital after this point). Thereafter, the results are sent to all targeted hospitals.

Around the 20th day of every month

The final results are delivered in a sequence to each person in charge of the evaluation committee for each department in which the data is completed. The final results are also delivered to the members of the executive committee.

Around the end of every month

When the office of peer review receives feedback from the person in charge of the evaluation committee of each of the departments, this assessment is reported to the executive committee.

Flow of remote connection
Process of advice and guidance for solution

Evaluation Committee	(1) Once the evaluation committee chair decides to investigate in detail because of warning signs received from various kinds of scores and the results of data, he requests a survey to the office of head quarters.
Office of Headquarters	(2) The office of headquarters performs remote access to the medical record of the target hospital after a request from the Evaluation Committee Chair, and prepares documents of collected medical information. The documents are sent to the Evaluation Committee.
Evaluation Committee	(3) The Evaluation Committee conducts a reassessment, and reports its results to the Executive Committee
Executive Committee	(4) The Executive Committee provides feedback based on the evaluation to the target hospital.
Survey target hospital	(5) The target hospital attempts to solve the problem at their own hospital. In some cases, the evaluation committee chair will provide guidance on the solution.

Run of remote access

Once the chairperson of the evaluation committee from each department determines a need to investigate the details, judging from the data of peer review, he/she requests an investigation from the headquarters.

This system was approved by Tokushukai's Ethical Review Board

The peer review office at headquarters collects data via remote access to the medical records through the TIS and prepares the materials for investigation.

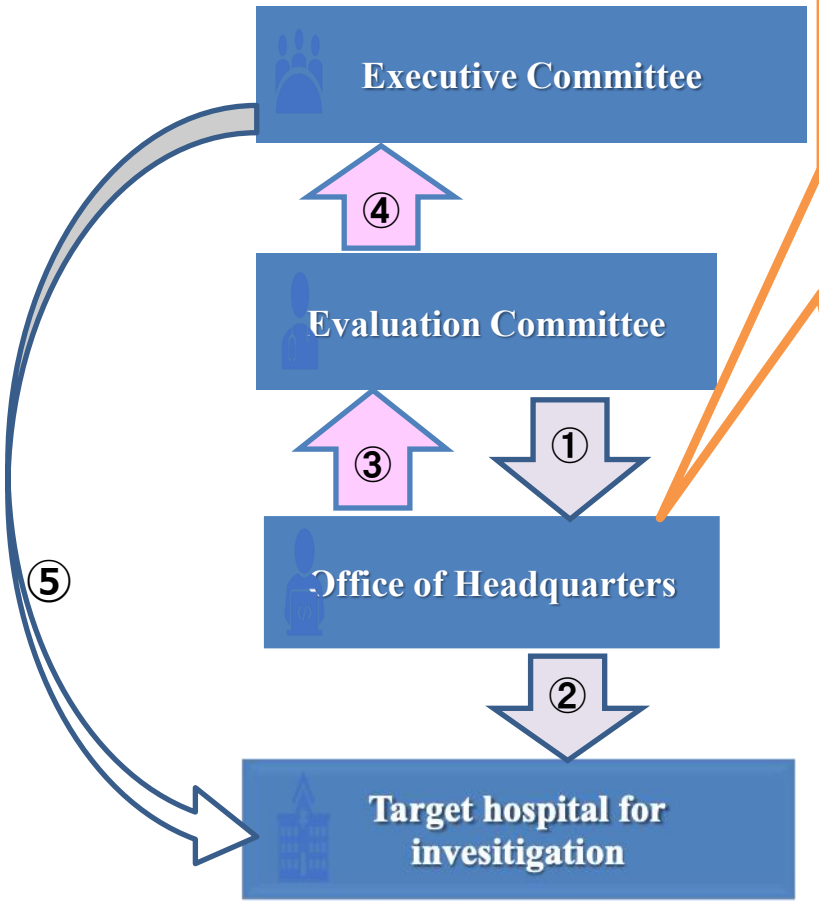
A specially assigned ID is used when referring to the medical records. Data are collected using print screen command because they cannot be printed directly.

The chairperson of each evaluation committee determines whether there is a problem in the department.

It is also the chairperson's responsibility to ensure appropriate disposal of the materials used in the investigation.

The chairperson of the evaluation committee reports the results to the headquarters and the executive committee of TMG.

Flow chart of report discussion



When the chairperson of the evaluation committee has no time to evaluate the scores because of prior commitments, the peer review office of the Nozaki Tokushukai Hospital can report the research results to the chairperson of the evaluation committee at the request of the chairperson.

① The chairperson of each evaluation committee requests the headquarters to collect the medical records of the referenced cases upon finding, after analysis, that a low score (below the benchmark) has lasted longer than 3 months in a hospitals or hospitals.

② The peer review office uses remote access to acquire the referenced medical records of a hospital and collect the relevant information regarding medical care.

③ The peer review office sends the information from the medical records obtained by remote access to the chairperson of the evaluation committee.

④ When the chairperson of the evaluation committee finds the problems in the medical care of the referenced hospital, he/she reports the findings to the executive committee.

⑤ Principally, the problems should be solved by the referenced hospital internally. When circumstances permit, the chairperson may advise the hospital as to what to do and how.

Report discussion

The peer review is executed by three committees:

(1) A joint organization of the peer review execution committee, secretary-general, and secretariat
(2) The peer review evaluation committee (establishment of the peer review evaluation committee within each of 9 departments from the Tokushukai Medical Group); and the
(3) Hospital exploratory committee based on peer review results; this committee is composed of the vice president, director of nursing, relevant department director, related and relevant chief nurse.

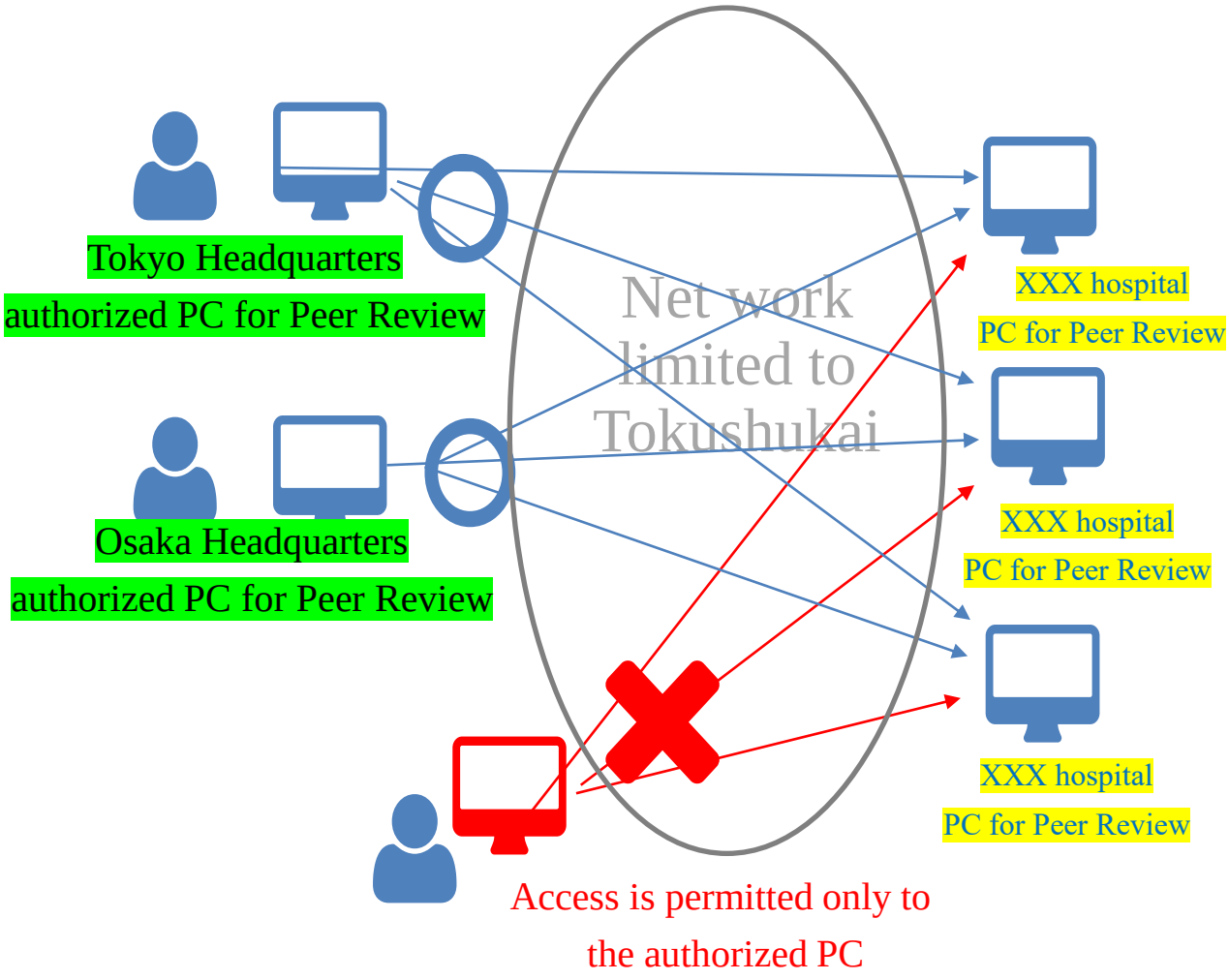
The full peer review process

This joint organization of the peer review execution committee, secretary -general, and secretariat analyze the data and identify any problems. These are then reported to the peer review evaluation committee for the relevant department. They judge whether or not the problem(s) should be addressed. If the matter(s) need to be solved, a report is given to the relevant hospital exploratory committee. The hospital exploratory committee discusses solutions with the peer review execution committee, secretary-general, and secretariat. This joint organization visits the concerning hospital and supervises the issue(s).

outline

Peer review in case of emergency

(remote access when getting information which can not be ignored)



A person in charge of the access sources (Tokyo and Osaka Headquarters) uses an authorized PC and special access tool, and measures are taken to prevent the other staff from entering. The authorized PC for Peer review placed at each hospital is set only to get access to a given IP address. This system is governed by the IP address. Please feel free to ask the TIS in case of an occurrence of a replacement in the terminal.

4. Report of the results to the Executive committee and target hospitals

(1) Two results reports are submitted every month.
① Result from all hospitals (summing all departments)
(hospital name entry) A-1
② Results of all hospitals (divided by departments)
(hospital name entry) A-2

A1-report

				○○Hospital								○○Hospital					
			Over all mean	neurosurg	General &	Obesterics	urology	cardiology	cardiovasc	orthopedics	gastroentero	ophthalmol	General &	obestetrics	urology	orthopedics	ophthalmology	cardiology
Evaluation items	1	Surgery・Endovascular treatment	5.8	7.0	5.9	4.2	4.5	9.0	6/3	7.8	4.2	5.0	8.2	7.0	5.3	6.5	5.5	4.3
	2	Postoperative complications	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.6	10.0	10.0
	3	Existence or non-existence of blood transfusion	1.5	0.8	1.5	0.0	2.5		1.7	4.0	0.0		2.4	0.2	1.1	1.2	1.7	1.9
	4	Difference in activities of daily living (ADL) between pre- and post-surgery	5.0	2.0	4.8	5.8	7.5	0.0	5.8	5.8	5.8	2.1	4.3	5.2	5.8	6.3	5.6	4.9
	5	Average length of stay	2.1	0.6	1.9	0.0	5.0	4.4	1.0	1.3	0.0	4.8	1.3	1.4	1.3	2.5	3.3	1.3
	6	Outcome (mortality rate)	9.7	9.4	10.0	8.3	10.0	0.0	10.0	10.0	8.3	1.0	10.0	10.0	9.3	9.5	9.0	10.0
	7	Rate of re-admission	9.6	9.4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.4	9.6	10.0	9.5	9.0	10.0
		Evaluation sum	43.5	44.0	49.0	43.0	54.0	43.0	49.0	54.0	43.0	43.0	50	48	47	49	49	46
		Average of each hospital	48.4	46.9									48.2					
		Number of surgeries	105.0	21.0	17.0			2.0	10.0	29.0	5.0	6.0	8.0	20	26	16	28	15	10

Evaluation sum is divided by the number of clinical departments

A-2 report: Results of each clinical department (The name of the hospital described)（sample）

Peer Review office distribute the list of the evaluation results of each of the clinical department of all target hospitals.

(9 clinical departments: General & visceral surgery・Orthopedics・Obstetrics and gynecology・urology・neurosurgery・cardiovascular surgery・ophthalmology・gastroenterology・cardiology)

2019.11

surgery

Number of target hospitals 48

Evaluation items		最高	最低	平均	1002										
	DPC				○	△	△	△	△	△	△	△	△	△	△
					XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
1-1	Surgery・Endvascular treatment		5.0	6.4	6.4	6.3	6.4	6.6	6.9	6.0	5.5		7.0	6.1	5.6
1-2	Endoscopic surgery	3.0	1.0	2.2	2.3	2.0		1.9	2.0	1.8	1.3		2.5	2.0	1.8
2	Postoperative complications	0.0	-6.0	-0.4	0.0	-0.2	0.0	0.0	-0.4	-0.3	0.0		-0.5	-0.3	0.0
2-1	Emergency-complication	0.0	-10.0	-0.9	0.0	-0.2			0.0		0.0		-4.0	-0.3	0.0
2-2	Elective-complication	0.0	-1.1	-0.2	0.0	-0.2	0.0	0.0	-0.6	-0.4	0.0		-0.2	-0.2	0.0
3	Existence or non-existence of blood transfusion	0.1	-1.2	-0.3	-0.2	-0.4	-0.6	0.0	-0.4	-0.3	0.0		-0.5	-0.4	-0.6
4	Difference in activities of daily living (ADL) between pre- and post-surgery	5.3	0.0	3.7	4.7	3.9	4.8	3.8	3.4	4.3	3.6		3.6	4.0	3.6
5	Average length of stay	3.2	0.0	1.4	1.1	2.3	0.0	1.2	0.0	1.1	0.4		0.6	0.4	0.3
6	Outcome (mortality rate)	10.0	8.0	9.8	10.0	9.9	10.0	10.0	9.6	9.4	10.0		9.5	10.0	10.0
7	Rate of re-admission	10.0	9.0	9.9	9.8	9.9	10.0	10.0	9.3	10.0	9.6		9.5	9.9	10.0
	Evaluation sum	36.3	24.0	32.1	34.0	33.8	30.5	33.5	30.5	32.0	30.3		31.9	31.7	30.7
Number of surgery		169	0	36.8	29	169	8	13	24	10	20	0	48	74	13
Number of endoscopic surgery		23	0	6.2	12	3	0	8	4	8	7	0	15	1	4
Total surgery + endoscopic surgery)		172	1	43.1	41	172	8	21	28	18	27	0	63	75	17

Scores lower than the average of Tokushukai hospitals

Transition of the results (each department of the target hospitals (exp. S hospital)

Example : S Hospital

Surgical Department

Evaluation items		4月		5月		6月		7月		8月		9月		10月		11月	
		平均	藤沢	平均	藤沢	平均	藤沢	平均	藤沢	平均	藤沢	平均	藤沢	平均	藤沢	平均	藤沢
1-1	Surgery・Endvascular treatment	5.7	5.5	5.7	5.7	5.7	5.5	5.8	5.6	5.7	5.6	6.4	6.4	6.4	6.4	6.4	6.1
1-2	Endoscopic surgery	2.1	2.0	2.1	2.4	2.2	2.5	2.2	1.9	2.2	1.8	2.2	2.4	2.2	1.8	2.2	2.3
2	Postoperative complications	-0.5	-0.2	-0.7	-0.3	-0.4	-0.4	-0.5	-0.2	-0.6	-0.2	-0.6	-0.4	-0.5	0.0	-0.4	-0.5
2-1	Emergency-complication	-0.4	0.0	-0.5	-0.5	-0.6	-0.4	-0.8	-0.1	-1.1	-0.2	-0.4	0.0	-0.7	0.0	-0.9	-0.6
2-2	Elective-complication	-0.8	-0.3	-0.6	-0.2	-0.6	0.0	-0.5	-0.4	-0.8	-0.2	-0.6	-0.7	-0.2	0.0	-0.2	-0.2
3	Existence or non-existence of blood transfusion	-0.3	-0.3	-0.3	-0.0	-0.4	-0.2	-0.2	-0.3	-0.2	-0.4	-0.2	-0.2	-0.3	-0.4	-0.3	-0.2
4	Difference in activities of daily living (ADL) between pre- and post-surgery	3.9	3.3	3.9	3.2	3.9	3.2	3.7	3.3	3.8	3.2	3.9	3.1	3.7	2.9	3.7	3.2
5	Average length of stay	1.4	2.1	1.3	2.5	1.2	2.1	1.5	2.0	1.3	2.4	1.3	1.8	1.3	2.5	1.4	2.2
6	Outcome (mortality rate)	9.8	9.9	9.9	10.0	9.9	9.9	9.8	10.0	9.8	9.8	9.8	9.9	9.9	9.8	9.8	9.9
7	Rate of re-admission	9.8	9.9	9.8	9.8	9.8	9.7	9.9	9.7	9.9	9.8	9.9	9.6	9.9	9.7	9.9	9.9
	Evaluation sum	31.5	32.1	31.1	33.1	31.3	32.2	31.6	32.0	31.6	32.2	32.2	32.6	31.9	32.7	32.1	33.0
Number of surgery		37.5	133	32.8	113	36.0	115	38.1	139	37.7	109	34.7	111	38.6	128	36.8	122
Number of endoscopic surgery		6.1	6	5.5	8	5.2	11	6.1	7	6.1	5	5.3	10	6.9	4	6.2	7
Total (surgery + endoscopic surgery)		43.7	139	38.3	121	41.2	126	44.2	146	43.9	114	40.0	121	45.5	132	43.1	129

Scores lower than the average of Tokushukai hospitals

(2) Report of the results of the relevant department to the Evaluation Committee

※Peer Review office send the results of the month before the previous month until tenth of the month

Evaluation of each department of all target hospitals (The name of the hospital described) (sample)

Neurosurgery

			Highest point	Lowest point	average	○○HP	○○HP	○○HP	○○HP	○○HP	○○HP
Evaluation items	1	Surgery・Endvascular treatment	9.0	4.2	6.1	6.5	7.0	7.0	5.9	4.5	6.1
	2	Postoperative complications	10.0	9.7	10.0	10.0	10.0	10.0	10.0	10.0	9.7
	3	Existence or non-existence of blood transfusion	5.0	-0.2	1.5	0.9	0.8	-0.2	1.5	2.5	0.3
	4	Difference in activities of daily living (ADL) between pre- and post-surgery	7.5	2.0	5.4	4.8	2.0	6.7	4.8	7.5	6.6
	5	Average length of stay	5.0	0.0	1.6	0.0	0.6	2.1	1.9	5.0	0.8
	6	Outcome (mortality rate)	10.0	8.3	9.8	10.0	9.4	10.0	10.0	10.0	9.5
	7	Rate of re-admission	10.0	9.0	9.9	10.0	9.4	10.0	10.0	10.0	9.5
	Evaluation sum		54.4	30.0	46.7	45	44	50	49	54	47
	Number of surgery		43	0	13.4	13	21	24	17	2	30

（3）Distribution of the results to each hospital・・・

Peer review office distribute two results described below every month

① The results of the entire target hospital (all clinical departments) (hospital anonymization) B-1
②The results of the entire target hospital (each clinical department) (hospital anonymization) B-2

※Peer Review office send the results of the month before the previous month until tenth of the month

B-1 report. Results of all departments of each hospital (hospital anonymization)（sample）

				Own hospital									A Hospital						B Hospital				
			average	neurosurg	general &	obstetrics	urology	cardiology	cardiovasc	orthopedics	gastroent	ophthalmol	general &	obstetrics	urology	orthopedics	ophthalmol	cardiology	general &	urology	orthopedics	gastroent	cardiology
Evaluation items	1	Surgery・Endovascular treatment	5.8	7.0	5.9	4.2	4.5	9.0	6.3	7.8	4.2	5.0	8.2	7.0	5.3	6.5	5.5	4.3	6.6	4.0	5.8	5.3	8.0
	2	Postoperative complications	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.6	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	3	Existence or non-existence of blood transfusion	1.5	0.8	1.5	0.0	2.5		1.7	4.0	0.0		2.4	0.2	1.1	1.2	1.7	1.9	3.0	1.7	3.8	0.7	0.0
	4	Difference in activities of daily living (ADL) between pre- and post-surgery	5.0	2.0	4.8	5.8	7.5	0.0	5.8	5.8	5.8	2.1	4.3	5.2	5.8	6.3	5.6	4.9	4.2	5.3	4.8	6.9	10.0
	5	Average length of stay	2.1	0.6	1.9	0.0	5.0	4.4	1.0	1.3	0.0	4.8	1.3	1.4	1.3	2.5	3.3	1.3	1.3	2.5	2.5	2.5	
	6	Outcome (mortality rate)	9.7	9.4	10.0	8.3	10.0	0.0	10.0	10.0	8.3	1.0	10.0	10.0	9.3	9.5	9.0	10.0	10.0	10.0	10.0	10.0	10.0
	7	Rate of re-admission	9.6	9.4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.4	9.6	10.0	9.5	9.0	10.0	10.0	10.0	10.0	10.0	10.0
	8	Evaluation sum	43.5	44.0	49.0	43.0	54.0	43.0	49.0	54.0	43.0	43.0	50	48	47	49	49	46	50	48	51	50	52
		Average of each hospital	48.4	46.9									48.2						50.2				
		Number of surgeries	105.0	21.0	17.0	6.0	2.0	10.0	29.0	5.0	6.0	8.0	20	26	16	28	15	10	27	3	5	19	1

B-2 report. Results of each clinical department (hospital anonymization)（sample）

Peer review office distribute the each medical department content of their own hospital.

Neurosurgery

Peer Review			Highest point	Lowest point	average	Own hospital	A	B	C	D	E
Evaluation items	1	Surgery・Endvascular treatment	9.0	4.2	6.1	6.5	7.0	7.0	5.9	4.5	6.1
	2	Postoperative complications	10.0	9.7	10.0	10.0	10.0	10.0	10.0	10.0	9.7
	3	Existence or non-existence of blood transfusion	5.0	-0.2	1.5	0.9	0.8	-0.2	1.5	2.5	0.3
	4	Difference in activities of daily living (ADL) between pre- and post-surgery	7.5	2.0	5.4	4.8	2.0	6.7	4.8	7.5	6.6
	5	Average length of stay	5.0	0.0	1.6	0.0	0.6	2.1	1.9	5.0	0.8
	6	Outcome (mortality rate)	10.0	8.3	9.8	10.0	9.4	10.0	10.0	10.0	9.5
	7	Rate of re-admission	10.0	9.0	9.9	10.0	9.4	10.0	10.0	10.0	9.5
	Evaluation sum		54.4	30.0	46.7	45	44	50	49	54	47
		Number of surgery	43	0	13.4	13	21	24	17	2	30

Simple data evaluation method by Evaluation Committee Chair

When you want to evaluate the data of peer review, please assess mainly the list of complications such as death, permanent sequelae, and medical safety issues.
Evaluate the data by carefully attending the two points described below.

① Points to pay attention to

- The cases which showed a problem of complications such as death, permanent sequelae, and medical safety issues lasting for three months or longer.

Number of death / Number of surgeries

	2019.4		Detal	2019.5	Detail	2019.6	Detail	2019.7	Detail	2019.8	Detail	2019.9	Detail	2019.10	Detail	2019.11	Detail	2019.12	Deta
A	1.8%	E	1/27	0.0%	0/18	4.4%	2/26	0.0%	0/11	0.0%	0/24	0.0%	0/16	6.4%	3/21	0.0%	0/10	3.4%	0/
		S	0/29		0/36		1/42		0/41		0/33		0/22		0/26		0/26		2/
B	0.0%	E	0/3	0.0%	0/13	0.0%	0/9	0.0%	0/6	4.4%	0/3	0.0%	0/3	3.2%	1/5	0.0%	0/8	5.1%	0
		S	0/26		0/25		0/18		0/21		2/42		0/17		0/26		0/33		2/
C	0.8%	E	0/20	0.0%	0/13	2.2%	0/9	1.2%	0/20	2.2%	0/17	1.3%	0/10	2.2%	1/16	0.0%	0/15	1.0%	0/
		S	1/98		0/60		2/80		1/64		2/75		1/69		1/74		0/59		1/
D	0.0%	E	0/28	0.0%	0/10	0.9%	0/22	0.0%	0/32	0.0%	0/24	0.0%	0/16	0.0%	0/20	0.0%	0/13	0.0%	0/
		S	0/79		0/82		1/94		0/101		0/94		0/76		0/90		0/88		0/
E	2.0%	E	1/6	4.8%	1/6	7.1%	0/6	2.1%	0/10	0.0%	0/9	4.7%	0/2	0.0%	0/1	0.0%	0/4	0.0%	0
		S	0/43		1/36		3/36		1/37		0/31		2/41		0/36		0/44		0/
F	2.4%	E	1/40	2.7%	2/28	0.0%	0/32	1.2%	0/30	1.1%	0/33	2.2%	0/37	1.1%	1/39	0.0%	0/33	1.2%	1/
		S	1/44		0/47		0/50		1/51		1/59		2/55		0/52		0/42		0/
G	0.0%	E	0/15	0.0%	0/19	0.0%	0/9	0.0%	0/24	0.0%	0/17	0.0%	0/16	0.0%	0/23	0.0%	0/24	0.0%	0/
		S	0/61		0/47		0/64		0/45		0/57		0/41		0/66		0/53		0/
H	0.7%	E	0/50	0.8%	1/55	1.6%	1/57	0.7%	0/74	0.0%	0/52	0.0%	0/44	0.0%	0/61	1.6%	1/59	0.0%	0/
		S	1/89		0/66		1/69		1/72		0/62		0/77		0/71		1/70		0/
I	4.0%	E	0/7	0.0%	0/8	0.0%	0/11	0.0%	0/6	0.0%	0/5	0.0%	0/6	0.0%	0/4	0.0%	0/4	0.0%	0
		S	1/18		0/28		0/35		0/36		0/28		0/25		0/36		0/34		0/
J	0.0%	E	0/15	0.0%	0/16	1.9%	1/18	3.8%	2/22	0.0%	0/13	0.0%	0/10	0.0%	0/19	1.8%	1/21	3.4%	1/
		S	0/44		0/39		0/35		0/31		0/47		0/33		0/38		0/35		1/
K	0.0%	E	0/8	0.0%	0/5	0.0%	0/5	0.0%	0/5	0.0%	0/3	0.0%	0/5	0.0%	0/10	3.8%	1/3	0.0%	0
		S	0/31		0/24		0/37		0/36		0/35		0/26		0/24		0/23		0/
L	0.0%	E	0/24	0.0%	0/27	2.2%	1/21	0.0%	0/18	3.7%	1/20	2.3%	1/21	4.3%	2/14	0.0%	0/18	0.0%	0/
		S	0/26		0/27		0/24		0/31		1/34		0/22		0/32		0/37		0/
M	3.8%	E	1/20	0.0%	0/32	0.0%	0/19	0.0%	0/23	4.5%	3/32	3.2%	0/30	3.2%	2/33	0.0%	0/26	2.1%	0/
		S	1/33		0/32		0/28		0/24		0/34		2/33		0/30		0/27		1/

E: emergency; S: scheduled

As points to pay attention to, one of the complications mentioned above has occurred continuously for 3 months or longer as red frames shown in the table. Furthermore, please pay attention to the number of emergency and scheduled surgeries separately in the three departments (surgery, cardiovascular surgery, and neurosurgery), and scrutinize the content especially when the number of deaths in the scheduled surgery is remarkable. Although hospitals with more number of surgeries may relatively have more number of deaths in the scheduled surgery, please request a survey to the headquarters if it continues.

② Points to pay attention to

AG	25.0%	E	0/1	9.1%	0/2	12.5%	0/3	0.0%	0/5	0.0%	0/3	10.0%	1/4	0.0%	0/	30.0%	1/2	0.0%	0/3	0.0%	0/1	0.0%	0/2	0.0%	0/1
		S	2/7		1/9		1/5		0/7		0/		0/6		0/		2/8		0/8		0/8		0/6		0/10
AH	0.0%	E	0/9	0.0%	0/3	0.0%	0/8	5.6%	1/5	0.0%	0/2	0.0%	0/2	0.0%	0/5	0.0%	0/4	0.0%	0/3	0.0%	0/8	0.0%	0/4	0.0%	0/11
		S	0/12		0/12		0/10		0/13		0/21		0/7		0/11		0/14		0/12		0/13		0/15		0/14
AI	0.0%	E	0/	50.0%	0/0	0.0%	0/	18.2%	0/0	11.1%	0/0	0.0%	0/0	0.0%	0/	10.0%	0/0	0.0%	1/	10.0%	0/0	0.0%	0/	16.7%	0/0
		S	0/		2/4		0/		2/11		1/9		0/7		0/		1/10		9/		1/10		0/6		4/24

E: emergency; S: scheduled

Second, the problem of the high rate of complications seen monthly regardless of the number of last few months

Although there is no fact that the complications (death, permanent sequelae, and medical safety issues) last for more than complications, high rate of complications is remarked despite low number of surgery, please think about requesting a survey because of possibility of latent problem involved.

In this case, a request for a survey should be done when the high rate of death is seen in the scheduled surgery.

As described above, it is a simple method of peer review evaluation, and the points table and specifications should be checked when scrutinizing in detail.

Neurosurgery

Points table

			Highest point	Lowest point	average	OOHP	OOHP	OOHP	OOHP	OOHP	OOHP
Evaluation items	1	**Surgery・Endvascular treatment**	9.0	4.2	6.1	6.5	7.0	7.0	5.9	4.5	6.1
	2	**Postoperative complications**	10.0						10.0	10.0	9.7
	3	**Existence or non-existence of blood transfusion**	5.0								
	4	**Difference in activities of daily living (ADL) between pre- and post-surgery**	7.5								
	5	**Average length of stay**	5.0								
	6	**Outcome (mortality rate)**	10.0								
	7	**Rate of re-admission**	10.0								
		Evaluation sum	54.4								
		Number of surgery	43								

specification

		最病名	名称
2021/3/15	2021/3/22	8 pituiyary tumor	no complications
2021/2/10	2021/3/17	36 SAH due to rupture of rt. IC aneurysm	no complications
2020/12/17	2021/3/12	86 SAH due to rupture of rt. MCA aneurysm	no complications
2021/1/18	2021/3/5	47 Normopressure hydrocephalus	no complications
2021/2/9	2021/3/8	28 cervical spondylotic myelopathy	no complications
2021/2/22	2021/3/10	17 ac… subdural he…	no complications
2021/2/21	2021/3/31	39 bi…	no complications
2021/2/25	2021/3/15	19 br…	no complications
2021/1/21	2021/3/3	42 SAH due to rupture of rt.ICPC aneurysm	no complications
2021/1/21	2021/3/10	49 SAH due to rupture of rt. MCA aneurysm	no complications
2021/2/8	2021/3/17	38 cervical spondylosis	no complications
2021/3/2	2021/3/7	6 lt. chronic subdural hematoma	no complications
2021/3/9	2021/3/11	3 aspiration pneumonia	no complications
2021/2/12	2021/3/24	41 acute epidural hematoma・combined with a open wound reaching in the skull	no complications
2021/3/15	2021/3/30	16 post operation of the subcortical hemorrhage in the lt. temporal lobe	no complications
2020/12/17	2021/3/17	91 metastatic brain tumor	no complications
2021/2/4	2021/3/15	40 metastatic brain tumor	no complications
2021/2/13	2021/3/30	46 lt.putaminal hemorrhage	no complications
2021/2/16	2021/3/23	36 SAH due to rupture of rt. IC aneurysm	no complications
2021/2/23	2021/3/6	12 skull fracture	no complications
2021/2/25	2021/3/12	16 cervical spinal cord injury	no complications
2021/3/1	2021/3/31	31 multiplr cerebral infarction	no complications

Breakdown of complications (2018.4-2019.3)

Neurosurgery	
Death	58
Permanent sequelae	52
Medical safety issues	5
Re-surgery	35
Wound infection	15
Other infection	5
Postoperative bleeding	11
Number of surgeries at all facilities	2930

Obstetrics & gynecology	
Death	2
Permanent sequelae	2
Medical safety issues	8
Re-surgery	8
Wound infection	5
Other infection	5
Postoperative bleeding	11
Post-operative thrombosis, Pulmonary embolism, Multiple organ damage	4
Number of surgeries at all facilities	3048

Cardiovascular surgery	
Death	209
Permanent sequelae	110
Medical safety issues	6
Re-surgery	60
Wound infection	46
Other infection	26
Postoperative bleeding	15
Number of surgeries at all facilities	4948

Surgery	
Death	286
Permanent sequelae	52
Medical safety issues	24
Re-surgery	135
Wound infection	382
Other infection	16
Postoperative bleeding	51
Number of operations at all facilities	22693

Orthopedics	
Death	61
Permanent sequelae	17
Medical safety issues	17
Re-surgery	102
Wound infection	90
Other infection	14
Postoperative bleeding	23
Number of operations at all facilities	17620

Digestive organ internal medicine	
Death	58
Permanent sequelae	1
Medical safety issues	7
Re-surgery	14
Wound infection	1
Other infection	7
Postoperative bleeding	51
Number of operations at all facilities	6954

Urology	
Death	23
Permanent sequelae	3
Medical safety issues	5
Re-surgery	24
Wound infection	12
Other infection	37
Postoperative bleeding	12
Number of surgeries at all facilities	6296

Cardiovascular medicine	
Death	122
Permanent sequelae	31
Medical safety issues	20
Re-surgery	13
Wound infection	3
Other infection	0
Rupture of vessels	22
Postoperative bleeding	0
Number of surgeries at all facilities	14719

Ophthalmology	
Death	1
Blindness	0
Permanent sequelae	0
Medical safety issues	1
Re-surgery	13
Wound infection	0
Number of surgeries at all facilities	5190

Breakdown of complications (2019.4-2020.3)

Neurosurgery		Obstetrics & gynecology		Cardiovascular surgery	
Death	42	Death	1	Death	154
Permanent sequelae	27	Permanent sequelae	1	Permanent sequelae	89
Medical safety issues	1	Medical safety issues	3	Medical safety issues	1
Re-surgery	25	Re-surgery	3	Re-surgery	42
Wound infection	13	Wound infection	5	Wound infection	28
Other infection	8	Other infection	7	Other infection	19
Postoperative bleeding	19	Postoperative bleeding	10	Postoperative bleeding	9
		Post-operative thrombosis, Pulmonary embolism, Multiple organ damage	6		
Number of surgeries at all facilities	2889	Number of surgeries at all facilities	3328	Number of surgeries at all facilities	4610
Surgery		Orthopedics		Digestive organ internal medicine	
Death	259	Death	43	Death	38
Permanent sequelae	32	Permanent sequelae	8	Permanent sequelae	1
Medical safety issues	129	Medical safety issues	24	Medical safety issues	7
Re-surgery	129	Re-surgery	107	Re-surgery	20
Wound infection	351	Wound infection	100	Wound infection	0
Other infection	0	Other infection	0	Other infection	8
Postoperative bleeding	51	Postoperative bleeding	19	Postoperative bleeding	45
Number of surgeries at all facilities	23302	Number of surgeries at all facilities	17706	Perforation Number of surgeries at all facilities	29 8083
Urology		Cardiovascular medicine		Ophthalmology	
Death	11	Death	93	Death	0
Permanent sequelae	1	Permanent sequelae	22	Blindness	0
Medical safety issues	4	Medical safety issues	7	Permanent sequelae	0
Re-surgery	14	Re-surgery	10	Medical safety issues	1
Wound infection	19	Wound infection	5	Re-surgery	4
Other infection	16	Other infection	0	Wound infection	0
Postoperative bleeding	12	Rupture of vessels	20	Other infection	1
		Postoperative bleeding	0	Postoperative bleeding	0
Number of surgeries at all facilities	5933	Number of surgeries at all facilities	14968	Number of surgeries at all facilities	4530

Breakdown of complications (2020.4-2021.3)

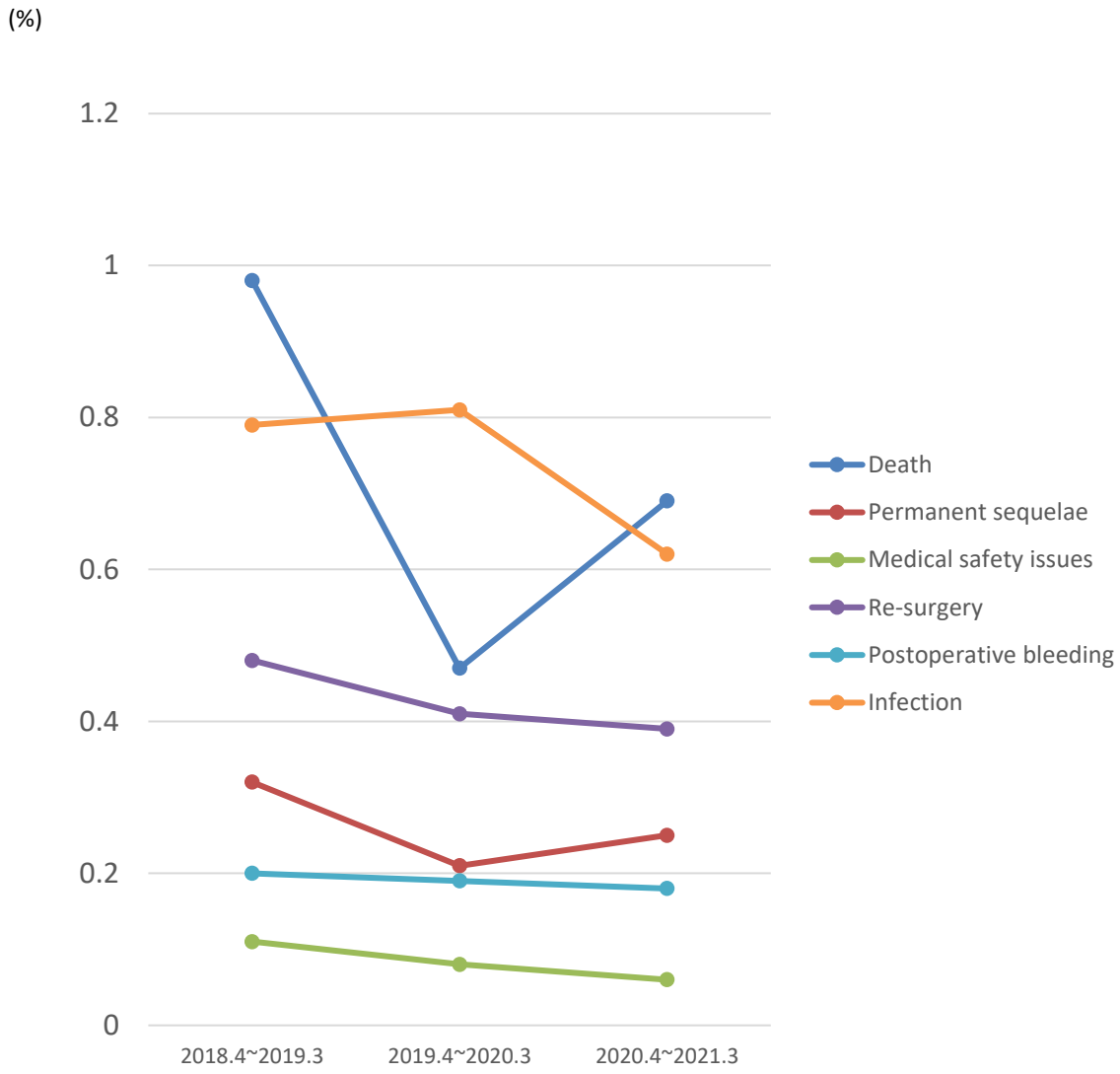
Neurosurgery		Obstetrics & gynecology		Cardiovascular surgery	
Death	49	Death	2	death	125
Permanent sequelae	64	Permanent sequelae	1	Permanent sequelae	83
Medical safety issues	2	Medical safety issues	3	Medical safety issues	2
Re-surgery	20	Re-surgery	5	Re-surgery	33
Wound infection	13	Wound infection	2	Wound infection	37
Other infection	1	Other infection	7	Other infection	11
Postoperative bleeding	11	Postoperative bleeding	5	Postoperative bleeding	10
		Post-operative thrombosis, Pulmonary embolism, Multiple organ damage	1		
Number of surgeries at all facilities	3071	Number of surgeries at all facilities	3151	Number of surgeries at all facilities	4581
Surgery		Orthopedics		Digestive organ internal medicine	
Death	231	Death	32	Death	26
Permanent sequelae	21	Permanent sequelae	14	Permanent sequelae	1
Medical safety issues	18	Medical safety issues	8	Medical safety issues	1
Re-surgery	121	Re-surgery	97	Re-surgery	20
Wound infection	325	Wound infection	74	Wound infection	1
Other infection	0	Other infection	0	Other infection	5
Postoperative bleeding	49	Postoperative bleeding	3	Postoperative bleeding	60
				Perforation	26
Number of surgeries at all facilities	21794	Number of surgeries at all facilities	17548	Number of surgeries at all facilities	8042
Urology		Cardiovascular medicine		Ophthalmology	
Death	23	Death	86	Death	0
Permanent sequelae	4	Permanent sequelae	21	Blindness	1
Medical safety issues	6	Medical safety issues	7	Permanent sequelae	2
Re-surgery	9	Re-surgery	21	Medical safety issues	0
Wound infection	24	Wound infection	1	Re-surgery	2
Other infection	17	Other infection	0	Wound infection	0
Postoperative bleeding	14	Rupture of vessels	0	Ejection bleeding	1
		Postoperative bleeding	21	Postoperative bleeding	0
Number of surgeries at all facilities	6492	Number of surgeries at all facilities	14942	Number of surgeries at all facilities	3833

Transition of complications in all facilities

	2018.4-2019.3	2019.4-2020.3	2020.4-2021.3
Death	819	398	574
Permanent sequelae	268	181	211
Medical safety issues	93	66	47
Re-surgery	404	354	328
Wound infection	554	521	477
Other infection	112	173	41
Postoperative bleeding	175	165	152
Rupture of vessels	22	7	21
Perforation		29	26
Ejection bleeding Endophthalmitis	0	0	1
Blindness	0	1	1
Post-operative thrombosis, Pulmonary embolism, Multiple organ damage	4	7	1
Number of surgeries at all facilities	83858	85349	83454

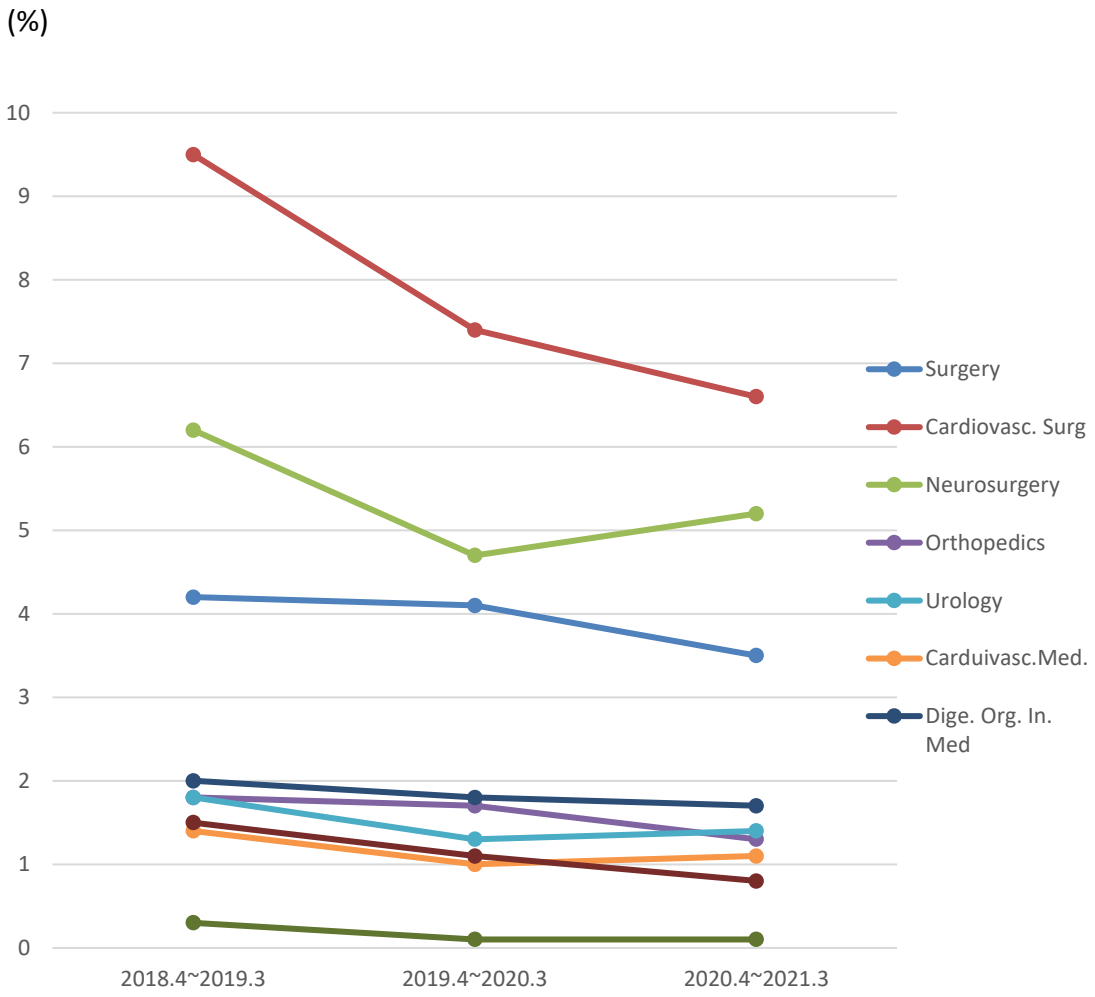
Transition of various complications in all target hospitals

Number of surgeries 83858 85349 83454



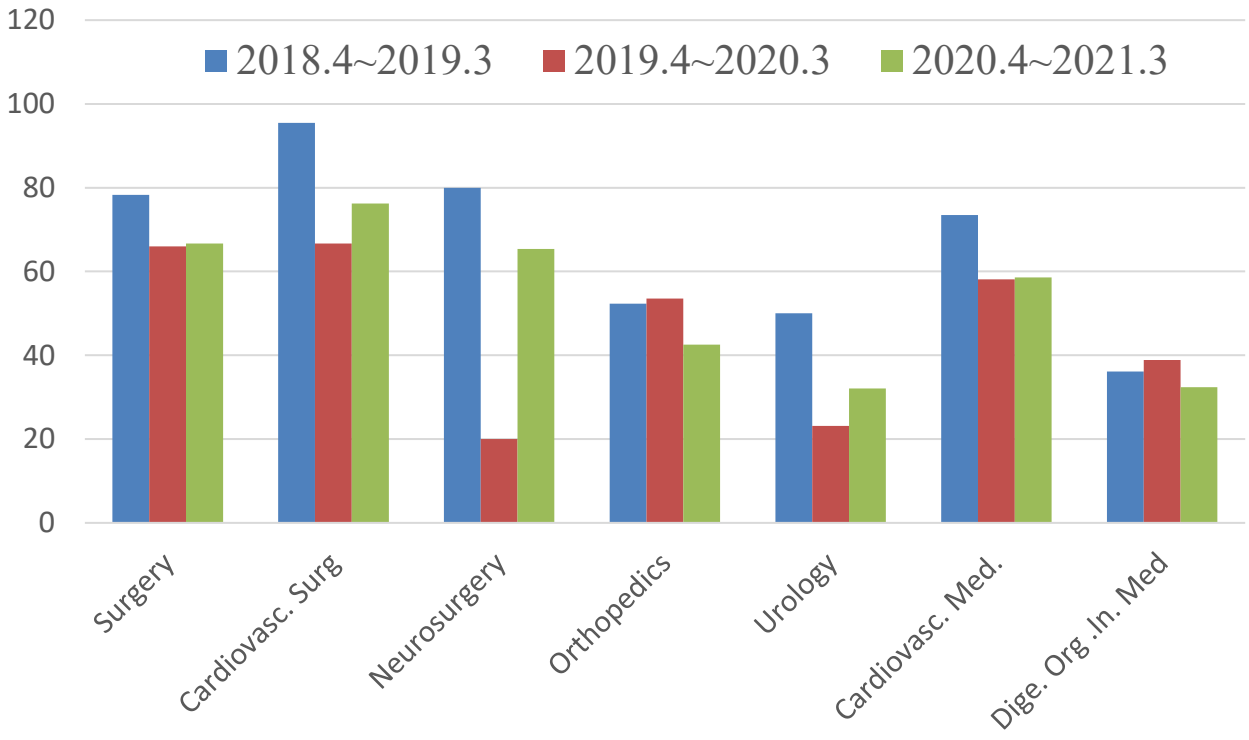
The complication of perforations in the department of digestive organ internal medicine was not registered from 2018.4 to 2019.3. Therefore, the transition of the perforation is not demonstrated. When the perforation is excluded from all complications, the complication rates were 2.9% (2018.4-2019.3), 2.2% (2019.4-2020.3), and 2.2% (2020.4-2021.3).

Transition of all complications at each clinical department



The graph shows decline in the rate of complications after starting peer review system. The cardiovascular surgical and surgical departments demonstrate obvious decline in the graphs.

Transition of the rate of hospital with deaths (the number of hospital with death case/all hospital) at each clinical department



In the third year, all clinical departments showed lower number of hospitals which experienced death than that in the first year, and this reveals the result of continuous efforts for medical safety.

Complication score lower than the average are shown in red squares, and hospitals that occupy 8 or more red squares in a year demonstrates symbol of stars as a warning sign.

Complication scores during a year (48 Hospitals) (2018.4-2019.3)

surgery

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M *	N	O	P	Q	R	S	T	U	V	W
Apr	−0.4	−0.4	−0.4	−0.3	−0.3	−1.0	−1.0	−0.3	−0.2	−1.1	−0.3	0.0	−0.2	−0.7	0.0	−0.3	−1.8	0.0	0.0		−0.2	−1.9		−0.2
May	−0.5	−1.1	−1.2	−0.4	−0.3	−0.9	−0.3	−0.5	−0.2	0.0	−0.1	0.0	−0.3	−0.8	0.0	−1.7	−1.4	0.0	−1.3	0.0	−0.2	−0.9	0.0	0.0
Jun	−0.6	−1.1	−0.7	−0.8	−0.8	−0.3	−0.3	−0.1	−0.2	0.0	−0.1	−0.8	−0.2	−0.7	−1.7	−0.7	−1.3	0.0	−0.6		−0.3	−0.5	−0.3	−0.1
Jul	−0.5	0.0	−1.9	−0.6	−0.5	−1.0	−0.6	0.0	−0.2	0.0	−0.8	−2.0	−0.1	−1.2	0.0	−0.5	−0.4	0.0	−0.7		−0.2	−0.7	−0.5	−0.2
Aug	−0.7	−0.4	−1.2	−1.1	−0.2	−1.6	−0.4	−0.1	−0.4	0.0	−0.3	−0.6	−1.2	−3.4	−1.7	−0.8	−0.4	0.0	0.0		−0.2	−1.0	−1.1	−0.1
Sep	−0.7	−0.7	−0.7	−1.2	−0.2	−0.6	−0.5	−0.5	−1.1	0.0	−0.5	−0.1	−1.0	−0.5	0.0	−0.2	0.0	0.0	−0.7		−0.7	−0.3	−0.9	−0.2
Oct	−0.6	−1.3	0.0	−0.4	−0.2	−1.0	−0.3	−0.1	−0.8	0.0	−0.1	−2.6	0.0	−0.3	0.0	0.0	−0.1	0.0	−1.3		−0.6	−0.1	−0.7	−0.1
Nov	−0.6	−1.0	−0.7	−0.9	−0.6	−0.4	−0.3	−0.1	−0.8	0.0	−1.2	−0.5	−0.4	−0.6		0.0	−1.6	0.0	0.0		−0.3	−0.7	−0.5	−0.1
Dec	−0.7	−0.4	0.0	−0.4	−0.2	−0.9	−0.4	0.0	−0.5	0.0	−0.3	−1.0	−1.0	−1.4		−1.5	−0.8	0.0	−1.1		−0.4	−0.6	−0.4	−0.3
Jan	−1.1	−0.6	0.0	−1.0	0.0	−0.1	−0.3	0.0	−0.2	0.0	−0.5	−1.8	0.0	−1.6	−20.0	−0.4	−1.4	−1.3	−2.5		−1.0	−1.3	−0.3	−0.1
Feb	−0.9	−1.0	−0.5	−0.5	−0.2	−0.5	−0.4	−0.1	−0.4	0.0	−0.8	−1.3	−0.6	0.0	0.0	−0.8	−1.1	−10.0	−1.2		−1.9	−0.3	−1.2	−0.1
Mar	−0.7	−0.6	0.0	−0.1	−0.4	−1.0	−0.7	−0.1	−0.1	0.0	−0.5	−0.8	0.0	−1.1		−0.8	−0.5	0.0	0.0		−0.4	−1.0	−0.6	−0.4

	X	Y	Z	a	b	c *	d	e	f	g *	h	i	j	k *	l	m *	n	o	p *	q	r	s	t	u	v
	0.0	0.0		0.0	0.0			0.0	0.0	−2.5	−0.6	0.0	−0.2	−1.3	−0.5	−0.3	−0.7		−0.3	0.0	0.0	−1.4	0.0	−1.3	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−2.0	−2.5	0.0	−1.3	−1.2	−1.9	0.0	0.0	0.0	−1.8	0.0	0.0	−0.7	0.0	−1.0	−0.7
	0.0	0.0	−2.7	−2.2	0.0	−3.1	0.0	0.0	0.0	0.0	−2.3	0.0	−0.8	−0.9	−0.3	−4.1		0.0	−1.0	−1.0	0.0	−1.0	0.0	0.0	0.0
	0.0	0.0	0.0	−0.8	0.0	−1.0	−1.1	0.0	−1.5	−0.5	0.0	−4.0	−0.6	−1.1	−0.5	0.0	−0.2	0.0	0.0	−0.6	0.0	0.0	0.0	−0.2	−0.4
	0.0	0.0	0.0	0.0	−3.8	−2.5	0.0	−0.6	0.0	−0.9	0.0	0.0	−1.2	−2.3	−0.5	−3.6	−0.2		−1.0	−0.2	0.0	0.0	0.0	0.0	−0.2
	−0.9	0.0	−1.3	0.0	−4.3	−2.0	0.0	0.0	−0.8	−5.0	−0.3	0.0	−0.9	−1.0	−0.2	−2.2	−1.0		−1.0	−0.3	−0.3	−1.3	0.0	−0.2	−0.5
	0.0	0.0	−1.3	0.0	−0.7	−1.1	0.0	0.0	0.0	0.0	−0.3	0.0	−0.4	−1.3	−3.5	−4.4	−0.5		−2.1	−0.5	0.0	−0.9	0.0	−1.3	−1.1
	0.0	0.0	0.0	−0.8	0.0	0.0	0.0	−0.4	0.0	−3.3	−1.2		−0.6	−1.3	0.0	−5.0	−0.6		−1.3	−0.2	0.0	0.0	0.0	0.0	−2.3
	0.0	0.0	−3.1	0.0	0.0	−3.2	0.0	0.0	0.0	−5.0	−0.2	0.0	−1.1	0.0	−2.6	−0.8	−1.5	0.0	0.0	−0.4	0.0	0.0	0.0	−1.6	−1.5
	0.0	0.0	−3.3	0.0	−2.0	−1.9	0.0	0.0	0.0	0.0	0.0	0.0	−1.1	−0.5	−1.3	−5.0	0.0	0.0	0.0	0.0	0.0	−0.8	−1.4	−0.2	−1.6
	0.0	0.0	0.0	0.0	−3.3	0.0	0.0	−2.0	0.0	−6.9	−1.0	0.0	−0.8	−0.6	0.0	−1.1	−0.5	−1.3	−1.3	0.0	0.0	−0.5	0.0	−1.0	−1.4
	−0.4	0.0	0.0	−2.0	0.0	−1.4	0.0	0.0	0.0	−5.5	0.0	0.0	−0.2	−1.3	−1.0	−2.5	−0.4	0.0	−3.0	−0.3	0.0	0.0	0.0	−0.9	−3.3

A brief description of the table:

Six hospitals showed star mark showing that the red squares occupied more than 8 months in a year.
Eighteen hospitals showed complication scores lower than the bench mark (the average) lasting for three months or longer. These hospitals became the subject of the survey.

Complication scores during a year (48 Hospitals) (2019.4-2020.3)

surgery 2019

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	-0.5	-0.6	0.0	-0.7	-0.1	-0.9	-0.7	-0.1	-0.2	-0.8	-0.3	0.0	0.0	-0.8	0.0	-0.7	-0.5	0.0	-1.4		-0.6	-0.6	-0.2	0.0
May	-0.7	-0.1	-0.1	-0.6	-0.1	-1.3	-0.9	-0.2	-0.3	-0.7	-0.5	-0.3	0.0	-0.1	0.0	-0.6	-0.8	0.0	-3.3		-0.4	-0.7	-0.5	0.0
Jun	-0.4	-0.9	0.0	-0.6	-0.2	-1.8	-0.2	-0.1	-0.4	-0.2	-0.6	-0.2	-0.4	-1.4	0.0	-0.8	-0.4	0.0	-2.9	0.0	-0.4	-0.8	-0.4	0.0
Jul	-0.5	-0.1	0.0	-0.5	0.0	-0.5	-0.9	-0.1	-0.2	0.0	-1.0	-0.2	-0.1	0.0	0.0	-0.6	-0.3	0.0	0.0		-0.9	-1.0	-0.4	-0.2
Aug	-0.6	-0.2	-1.1	-0.7	-0.1	-0.1	-0.5	-0.1	-0.2	-0.6	-0.3	0.0	-1.1	-1.1	0.0	0.0	-0.6	0.0	-3.8	0.0	-0.8	-0.2	-0.1	-0.1
Sep	-0.6	-0.1	-0.5	-0.4	0.0	-1.7	-0.8	-0.1	-0.4	-0.6	-0.3	0.0	-0.5	-0.7	0.0	-0.2	-0.2	0.0	0.0		0.0	-0.1	-0.7	-0.2
Oct	-0.5	-1.3	-0.6	-0.8	0.0	0.0	-0.8	-0.1	0.0	-0.6	-0.2	0.0	-0.9	-0.7	-3.3	-0.7	-0.3	0.0	0.0		-0.5	-0.1	-0.2	0.0
Nov	-0.4	0.0	0.0	-0.4	0.0	-0.7	-0.3	-0.1	-0.5	-0.3	-0.5	-0.8	-0.3	0.0	0.0	-1.0	-0.8	0.0	0.0		-0.5	-0.5	-0.2	0.0
Dec	-0.5	-0.9	-1.0	-0.4	0.0	-0.4	-0.7	-0.1	-0.8	-0.2	-0.7	-0.3	0.0	-0.4	0.0	-0.4	-0.5	0.0	0.0		-0.3	-1.6	-0.4	-0.2
Jan	-0.5	0.0	0.0	-1.0	0.0	-0.7	-0.2	0.0	-0.6	-2.5	0.0	0.0	-0.5	-0.1	0.0	-0.7	-0.6	-3.3	-1.4		0.0	-0.4	0.0	0.0
Feb	-0.4	-0.2	-0.5	-0.5	0.0	-1.5	-1.0	-0.1	-0.2	-1.0	-0.6	0.0	-0.1	-0.4	0.0	-0.4	-0.9	0.0	-0.5		-0.4	-0.1	-0.2	-0.1
Mar	-0.4	-1.2	0.0	-0.3	-0.1	-0.2	-0.1	0.0	-0.8	0.0	-0.1	-1.0	0.0	0.0	0.0	-0.3	-0.7	0.0	-2.8	0.0	-0.5	-0.4	-0.2	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
0.0		0.0	0.0	0.0	-0.7	0.0	0.0	0.0	-6.3	0.0	0.0	-0.2	-0.6	0.0	-3.0	-0.5	0.0	0.0	-0.2	0.0	-0.7	0.0	0.0	-1.0
0.0	0.0	0.0	-0.8	0.0	-0.7	-2.5	-1.0	0.0	-1.8	0.0	-10.0	-0.2	0.0	-0.5	-1.0	-0.2	0.0	-0.4	-1.2	0.0	0.0	0.0	-0.2	-1.6
0.0	0.0	0.0	-0.7	0.0	-0.6	0.0	0.0	0.0	-3.8	0.0	0.0	-0.3		-0.3	-0.3	-0.4	0.0	0.0	-0.6	0.0	0.0	0.0	-0.2	-0.4
0.0	0.0	0.0	0.0	-3.3	-1.1		0.0	0.0	-0.8	-1.1	-3.6	0.0	-0.7	-1.2	-2.7	-0.6	0.0	-0.4	-0.2	0.0	0.0	0.0	-0.8	-1.2
0.0		0.0	-2.5	0.0	-0.3		0.0	0.0	-2.8	0.0	-2.2	0.0	0.0	-0.3	-1.8	-0.9	0.0	-0.2	-0.2	-0.2	-1.0	0.0	-0.7	-0.6
0.0	0.0	-1.8	-2.5	0.0	0.0	0.0	0.0	0.0	-2.0	0.0	0.0	-0.1	-10.0	-0.6	0.0	-0.9	0.0	-0.3	-0.5	0.0	0.0		0.0	-0.7
0.0		-1.7	-0.6	0.0	-1.4	0.0	-1.3	-0.5	-0.5	0.0	0.0	-0.3	-0.1	-0.4	-2.0	-0.3	0.0	0.0	-0.1	0.0	0.0		-0.2	-0.4
0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	-6.0	0.0	-2.0	0.0	-0.4	-1.7	-0.3	-0.1	0.0	0.0	-0.6	0.0	0.0	0.0	-0.4	-0.8
0.0		-1.8	0.0	0.0	-0.6	0.0	0.0	0.0	-0.5	0.0	0.0	-0.2	0.0	-3.0	-0.3	-1.2	0.0	-1.4	-0.3	0.0	0.0		-0.9	-1.1
0.0		0.0	0.0	-1.7	0.0	0.0	-0.7	0.0	-1.1	-0.2	-2.0	-0.2	-0.6	-0.5	0.0	-0.2	-1.0	0.0	-0.4	0.0	0.0		-0.4	-0.3
0.0	0.0	-3.1	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	-0.2	0.0	0.0	-0.3	-0.7	-1.0	-0.1	0.0	-0.8		0.0	-0.6
0.0	0.0	0.0	0.0	0.0	-0.8		0.0	-0.4	0.0	0.0	-3.3	0.0	-0.5	-0.2	0.0	-1.4	0.0	-2.2	-0.7	0.0	0.0		-0.2	-0.3

A brief description of the table:

Nine hospitals showed the red scores lower than the average lasting for three or longer months. Hospitals P, g, and v were given suggestions.

Complication scores during a year (48 hospitals) (2020.4-2021.3)

surgery 2020

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	-0.4	-0.4	0.0	-0.8	0.0	-0.6	-0.8	-0.2	-0.6	0.0	-0.3	-1.2	0.0	-0.5	0.0	0.0	-0.3	0.0	-1.5	0.0	-1.0	-0.1	-0.5	0.0
May	-0.4	-0.4	-0.6	-0.6	0.0	-0.4	-0.8	-0.3	-0.8	0.0	-1.1	-1.3	0.0	-0.5	0.0	0.0	-0.7	0.0	0.0		-0.1	-0.4	-0.5	0.0
Jun	-0.4	0.0	0.0	-1.0	-0.1	-0.3	-0.7	0.0	-0.6	-1.2	-0.2	0.0	-0.3	0.0	0.0	-0.1	-0.6	-0.7	-2.8		-0.2	-0.4	-0.2	0.0
Jul	-0.3	0.0	-0.4	-0.7	-0.2	-0.6	-0.4	-0.1	-0.4	-0.3	-0.7	0.0	0.0	-0.4	0.0	0.0	-0.5	0.0	0.0		-0.7	0.0	-0.5	-0.2
Aug	-0.3	-1.3	-0.5	-1.0	0.0	-0.5	-0.3	-0.1	0.0	-0.4	-0.5	0.0	0.0	-0.1	0.0	-0.4	-0.9	0.0	-2.0		-0.7	-0.8	0.0	0.0
Sep	-0.5	-0.7	-1.1	-1.0	0.0	-0.6	-0.4	-0.3	-0.3	0.0	-0.3	-0.3	0.0	-0.1	0.0	-0.1	-0.8	0.0	-4.0		-0.5	-1.2	-0.2	0.0
Oct	-0.3	-0.3	-0.6	-0.4	0.0	-0.6	-0.3	0.0	0.0	-0.5	-0.3	0.0	-0.2	-0.1	0.0	0.0	-0.6	0.0	-1.5	0.0	-0.5	-0.6	-0.1	0.0
Nov	-0.5	0.0	0.0	-0.5	0.0	-0.5	-0.6	-0.5	-0.1	0.0	-0.9	0.0	0.0	-0.1	0.0	-0.3	-1.2	0.0	-3.3		-0.3	-0.6	-0.1	0.0
Dec	-0.4	-0.4	-1.0	-0.9	-0.2	-0.4	-0.5	-0.2	0.0	0.0	-0.3	-0.6	0.0	-0.2	0.0	-0.7	-0.2	0.0	-0.3		-0.7	-0.9	-0.5	-0.1
Jan	-0.5	-1.1	-0.1	-0.6	0.0	-0.2	0.0	0.0	-0.3	-0.2	-1.0	-1.0	0.0	0.0	0.0	-1.3	-0.7	0.0	-5.7	0.0	-0.2	-0.7	-0.1	0.0
Feb	-0.4	0.0	0.0	-0.7	-0.1	-0.5	-1.3	0.0	-0.1	0.0	-0.7	0.0	-0.1	-0.1	-1.0	-0.5	-0.1	0.0	-3.3		-0.4	0.0	-0.2	0.0
Mar	-0.6	-0.6	-0.2	-0.3	-0.1	-0.3	-0.4	0.0	-0.4	-0.3	-0.3	0.0	-0.1	0.0	0.0	-0.4	-0.1	0.0	0.0		-0.3	-0.7	-0.1	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
0.0	0.0	0.0	-1.3	0.0	-0.3		0.0	0.0	-0.6	0.0	-1.1	-0.1	-0.2	-0.2	0.0	-0.8	0.0	-4.2	0.0	0.0	-0.2		-0.9	-0.2
0.0		0.0	-0.8	-0.7	0.0		0.0	0.0	-0.9	-1.6	-2.0	-0.1	-0.9	0.0	0.0	-0.6	0.0	0.0	-0.8	0.0	0.0		0.0	-1.9
0.0	0.0	0.0	0.0	0.0	-0.3		0.0	0.0	0.0	-0.3	-1.8	-0.3	-1.0	-0.9	0.0	-0.9	-0.9	0.0	-0.7	0.0	-0.8		-1.2	-1.3
0.0		0.0	-0.4	0.0	-1.9	0.0	0.0	-0.5	0.0	-0.6	-1.3	-0.3	-0.6	0.0	0.0	0.0	0.0	0.0	-0.5	0.0	0.0	0.0	0.0	-0.3
0.0	0.0	0.0	-1.1	0.0	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-1.7
0.0		0.0	0.0	-2.5	-0.3		0.0	0.0	-0.6	0.0	-1.1	-0.6	0.0	-1.5	0.0	-1.1	-0.3	0.0	-0.3	0.0	0.0	-0.6	-0.8	-2.1
0.0	0.0	0.0	-1.1	0.0	-0.3	0.0	0.0	0.0	0.0	-1.4	-2.5	-0.5	-0.3	-0.7	0.0	0.0	0.0	-0.6	-0.5	0.0	-0.4	0.0	-1.6	-0.2
0.0		0.0	-0.5	0.0	-2.3		0.0	0.0	-2.1	-0.7	0.0	-1.3	0.0	0.0	0.0	-1.4	0.0	-1.4	-0.4	0.0	-0.8	-0.6	0.0	-0.2
-0.4		-2.2	-0.4	-1.8	-1.2	0.0	0.0	0.0	0.0	0.0	-1.5	-0.4	0.0	0.0	0.0	-0.4	0.0	0.0	-0.3	0.0	0.0	0.0	-1.2	-0.5
0.0	0.0	0.0	-1.0	0.0	0.0		0.0	0.0	-1.1	-0.4	-1.3	-0.2	-0.6	-1.0	-0.5	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	-1.7	-4.5
-1.2		0.0	0.0		0.0		0.0	0.0	0.0	0.0	-2.0	-0.1	-0.1	-0.9	0.0	-0.1	0.0	-0.5	-0.2	0.0	0.0	0.0	0.0	-3.0
-0.9		0.0	0.0	-6.7	-1.7		-2.5	0.0	-2.2	0.0	-0.8	-0.7	-1.3	-1.3	-1.4	-0.2	0.0	0.0	-0.3	0.0	0.0	0.0	-1.4	-1.7

A brief description of the table:

Fourteen hospitals showed red scores lower than the average lasting for three or longer months. Hospitals P, g, and v still showed bad results, and survey was undertaken.

Complication scores during a year (48 hospitals) (2018.4-2019.3)

Cardiovascular Surgery

		*	*	*					*	*		*												
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Apr	-2.1	-2.8	-1.7	-1.8	0.0	-3.8	-1.2	-0.2	-2.2	-0.3	-10.0	-3.3	-1.3		0.0	0.0	-3.5	0.0	0.0	0.0	-8.3	-5.0	-1.3	-2.9	-0.8
May	-2.3	-1.8	-3.1	-0.8	0.0	-6.0	-1.5	-2.6	0.0	-1.2		-4.7	-2.2		-2.0	-5.4	-20.0	-0.5	0.0		-3.8	0.0	0.0	0.0	0.0
Jun	-2.6	-1.8	-1.4	-0.4	0.0	0.0	-2.6	-0.5	-2.9	-2.9	-20.0	-5.0	-1.6	-5.0	0.0	-2.8	-1.2	-0.7	0.0	0.0	-4.5	-6.0	0.0	-3.3	0.0
Jul	-1.5	-2.5	-2.6	-1.7	0.0	-2.5	-2.3	-1.4	-2.2	-2.6		-10.0	-1.3		-2.2	-2.6	-1.2	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aug	-1.1	-3.6	-1.1	-1.3		-0.4	0.0	-0.6	-3.1	-1.7	-5.0	-0.8	-2.1		-3.1	0.0	-2.5	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep	-1.4	-0.9	-4.0	-1.1	0.0	0.0	-0.4	-0.3	0.0	-1.1		-2.2	-1.4		-6.0	-3.1	-2.6	0.0	0.0	0.0	-5.6	0.0	0.0	-4.3	0.0
Oct	-1.4	-4.2	-1.6	-1.6	0.0	-3.2	-1.0	-0.5	-1.9	-1.2		-5.6	-2.9	0.0	-5.7	-1.0	-3.3	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nov	-1.4	-2.1	-3.6	-2.0	0.0	-2.0	-1.3	-0.8	-2.7	-2.2		-5.0	-2.3		0.0	0.0	-2.0	-0.2	-2.5	0.0	-1.3	0.0	-2.5	0.0	0.0
Dec	-1.4	-1.1	-3.5	-1.4	-1.4	0.0	-0.7	-0.8	-2.3	-2.6		-1.1	-1.0		-4.4	0.0	0.0	-0.5	0.0	0.0	-3.6	0.0	0.0	-8.0	0.0
Jan	-1.7	-2.2	-2.4	-1.7	0.0	0.0	-1.0	-0.9	-4.4	-2.7		-3.1	-4.4	-5.0	0.0	-2.7	0.0	0.0	0.0	0.0	0.0	-5.0	0.0	-4.3	0.0
Feb	-1.2	-3.2	-3.3	-2.0	0.0	0.0	-0.9	-0.6	-2.4	-3.7		-1.2	-3.3	0.0	-4.0	-1.3	-1.6	-0.2	0.0	0.0	0.0	0.0	0.0	-2.0	0.0
Mar	-1.8	-2.2	-2.1	-1.9	0.0	-3.3	-0.7	-1.1	-1.3	-2.9		-3.4	-3.9		-4.3	0.0	-1.6	-0.3	0.0	0.0	0.0	-6.0	-3.3	-5.0	0.0

Cardiovascular Surgery 2019.4-2020.3

													*		*									
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Apr	-1.4	-1.0	-1.1	-1.8	0.0	-4.3	-2.3	0.0	-1.3	-0.8		0.0	-4.0		-5.7	-1.5	-1.6	-0.5	0.0	0.0	0.0	-5.0	0.0	0.0	0.0
May	-1.2	-0.9	-2.7	-0.8	0.0	-2.2	-0.5	-1.1	-1.7	0.0		-4.0	-2.4		-5.5	0.0	-3.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Jun	-1.2	0.0	0.0	-1.5	0.0	-1.5	-0.9	0.0	-1.3	-2.1		0.0	-1.7	0.0	-7.1	-0.8	0.0	0.0	0.0	0.0	-1.7	0.0		-8.3	0.0
Jul	-1.1	-0.5	-1.1	-1.6	0.0	-2.1	-0.9	0.0	-3.3	0.0		0.0	-1.0		-2.2	-2.8	-4.0	-0.2	0.0	0.0	0.0	0.0		-2.9	0.0
Aug	-2.3	-2.3	-4.0	-1.9	0.0	-1.4	0.0	0.0	-1.4	-5.8		0.0	-0.9	-20.0	-5.0	-0.4	-0.7	-1.0	0.0		-2.2	-2.0	0.0	-1.7	0.0
Sep	-1.3	0.0	0.0	-2.1	0.0	0.0	-1.1	0.0	-3.3	-2.3		-3.0	-1.2	0.0	-4.4	0.0	-0.8	0.0	-10.0	0.0	0.0	0.0		0.0	0.0
Oct	-0.6	-2.2	-0.9	-0.9	0.0	0.0	-0.6	-0.2	-0.8	-0.3		0.0	-2.1	0.0	0.0	-0.8	-1.9	0.0	0.0		0.0	-1.0		-1.4	0.0
Nov	-1.0	-3.2	-1.1	0.0	0.0	-2.9	-0.5	-2.1	0.0	-3.2		0.0	-1.7		-3.3	0.0	-1.7	0.0	0.0	0.0	0.0	-2.0		0.0	0.0
Dec	-1.5	-3.2	-2.1	-1.0	0.0	-5.0	-0.9	-0.7	-2.4	-1.3			-3.6		-3.1	0.0	-1.9	-0.3	0.0	0.0	-5.0	0.0		0.0	0.0
Jan	-1.7	-2.0	-5.5	-1.3	0.0	0.0	-1.8	-0.3	0.0	-0.4			-1.6		-0.6	-2.2	-1.0	-0.2	0.0	0.0	0.0	-10.0		-8.0	0.0
Feb	-1.3	-1.9	-1.5	-0.3	0.0	-0.6	-0.9	-1.4	-4.3	-0.9			-1.5		-6.7	0.0	-1.2	-0.2	0.0	0.0	0.0	-4.0		-1.7	0.0
Mar	-1.3	-5.4	-0.9	-2.0	0.0	0.0	-0.8	0.0	0.0	-1.8			-2.7		-4.1	0.0	-0.8	-0.3	0.0	0.0	-1.3	-5.7		0.0	0.0

A brief description of the table:

Hospital K shows star sign, and operative complications in Hospital K was lower than the benchmark, which showed the frequency of nine of 12 months. Moreover, the rate of complications was 69% and the rate of death was 50 cases/173 surgeries. Based on these results, a survey was conducted, which found that ethical issues on surgical indications in elder patients was poor. Finally, this hospital received guidance, after which the cardiac surgery group retired from the Hospital K.

Complication scores during a year (48 hospitals) (2020.4-2021.3)

Cardiovascular Surgery

				*					*				*			*									
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Apr	-0.7	-1.3	-0.7	-2.6	0.0	0.0	-0.3	-0.1	-1.7	-1.7			-0.8		0.0	0.0	-1.5	-0.2	0.0		0.0	-1.7		0.0	0.0
May	-1.5	-1.3	-5.6	-1.7	0.0	0.0	0.0	0.0	-3.1	-1.0			-1.9		-3.3	0.0	-1.8	0.0	0.0	0.0	0.0	-10.0		0.0	0.0
Jun	-1.3	0.0	0.0	-1.5	0.0	-5.0	-1.1	0.0	0.0	0.0			-2.4		-2.5	0.0	-2.4	-0.4	0.0	0.0	-6.7	-5.0		0.0	0.0
Jul	-1.2	-0.8	0.0	-1.7	-0.9	0.0	0.0	-0.4	-1.3	-1.8			-1.2		-1.4	0.0	-1.5	-0.4	0.0	0.0	-5.0	-1.7	0.0	-5.7	-0.9
Aug	-0.5	-0.3	0.0	-2.2	-2.0	0.0	0.0	-0.8	-0.5	-0.5		0.0	-1.9		-0.5	-0.3	-2.1	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep	-0.8	-2.4	0.0	-3.3	0.0	-1.5	0.0	-0.3	0.0	-0.8			-0.8		0.0	-1.3	0.0	0.0	0.0	0.0	-2.2	-4.0	0.0	0.0	0.0
Oct	-1.1	-2.5	-2.2	-2.0	0.0	-2.2	-1.0	0.0	-2.0	-1.7			-2.0	0.0	-2.5	0.0	-2.1	0.0	0.0	0.0	-0.8	0.0	-1.4	-1.3	0.0
Nov	-0.7	-1.7	-1.7	0.0	0.0	0.0	-0.8	0.0	0.0	0.0			-1.4		0.0	-0.7	-0.6	0.0	0.0	0.0	0.0	0.0	-4.0	-2.5	-0.7
Dec	-1.0	-1.6	-1.3	-1.5	-1.0	-1.1	-0.9	-0.2	-1.6	-0.8			-2.9		-1.3	-0.3	-0.6	0.0	0.0	0.0	-4.0	0.0	0.0	-1.7	0.0
Jan	-1.7	-3.0	-1.9	-4.1	0.0	-2.9	-1.5	-0.6	-1.8	-1.7			-2.6		-2.0	0.0	-1.7	0.0	0.0	0.0	-2.2	-6.7	0.0	-2.5	0.0
Feb	-1.2	0.0	0.0	-1.5	0.0	-3.5	-0.6	0.0	-5.5	-1.8			-1.4	0.0	-3.1	0.0	0.0	0.0		0.0	-3.0	-4.4	0.0	0.0	0.0
Mar	-1.0	-2.4	-2.9	-1.3	0.0	-2.2	-2.7	0.0	-2.5	-1.2			-1.5		0.0	0.0	-1.1	0.0	0.0	0.0	-1.4	0.0	0.0	-2.5	0.0

A brief description of the table:

Twelve of 23 hospitals showed red scores lasting for three or more months. This high rate is considered to be due to the high risk of surgery, especially the higher rate that was found in the hospitals dealing with many emergency cases such as hospitals C, H, L, and P.

Complication scores during a year (29 hospitals) (2018.4-2019.3)

Neurosurgery

			*	*			*									
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Apr	−0.5	0.0	−2.0	−1.3	0.0	0.0	−3.9	0.0	−0.8	0.0		0.0	0.0	−2.2	0.0	0.0
May	−0.3	0.0	−0.8	−2.0	0.0	0.0	−2.0	0.0	−1.3	0.0		0.0	0.0	−1.0	0.0	−0.2
Jun	−0.9	0.0	−5.7	−1.4	0.0	0.0	−3.4	0.0	−0.5	0.0		−1.3	0.0	0.0	−1.3	−0.3
Jul	−0.7	−8.0	−3.9	−1.2	0.0		0.0	0.0	0.0	0.0		0.0	−2.0	0.0	0.0	−0.6
Aug	−0.9	0.0	−2.7	−2.3	0.0	0.0	−2.2	0.0	0.0	0.0		0.0	−0.6	−10.0	−2.5	0.0
Sep	−1.1	0.0	−1.3	−3.7	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	−5.0	0.0	−0.8
Oct	−1.8	−2.9	−1.8	0.0	−1.0	0.0	−2.2	0.0	−2.5	0.0		0.0	−4.0	0.0	0.0	−1.4
Nov	−0.8	0.0	−4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		−1.4	0.0	−8.3	−5.5	0.0
Dec	−0.8	−1.0	−1.9	−0.9	−0.8	0.0	−2.2	0.0	−1.2	0.0		−3.6	−6.3	0.0	−4.0	0.0
Jan	−1.1	−2.5	−0.7	−2.7	0.0	0.0	−3.6	0.0	0.0	0.0		0.0	0.0	0.0	−10.0	0.0
Feb	−0.4	−1.4	−0.7	0.0	0.0	0.0	−0.5	0.0	−0.8			−3.6	0.0	0.0	−2.5	0.0
Mar	−0.8	0.0	−1.2	−2.2	0.0	0.0	−0.9	0.0	−0.9	0.0		−5.7	−4.0	−3.3	−4.0	0.0

P	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d
	0.0	−1.5	0.0	0.0	0.0			0.0	−3.3	0.0	0.0	0.0	0.0	0.0
	0.0	−2.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	−0.9	0.0	0.0	0.0	0.0	0.0	−4.0	0.0		−5.0	0.0	0.0	0.0
	0.0	−1.4	0.0	−0.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
	0.0	−1.7	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	
	−15.0	0.0	−1.2	−0.5	0.0		0.0	−5.0					0.0	
	−20.0	−0.7	−2.5	0.0	0.0	0.0		−5.0	−10.0		0.0	0.0	0.0	
	0.0	−4.0	−0.6	0.0	0.0		0.0	0.0	0.0				−0.7	
	0.0	0.0	−2.0	−0.6	0.0	0.0		0.0	0.0	0.0		0.0	0.0	
0.0	0.0	0.0	0.0	−0.4	0.0		0.0	0.0	−13.3			0.0	0.0	
0.0	0.0	0.0	−1.2	0.0	0.0	0.0		0.0	0.0			−0.8	0.0	
	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0			−1.0	0.0	

A brief description of the table:

The hospital medical safety committee disagreed with some surgeries at the neurosurgical department, and the result of scrutiny attributed it to the problems of surgery and surgical indications. As a result of the efforts of the Investigation Committee with external members, the Department of neurosurgery was instructed not to have surgery until further instructions, and all doctors retired.

Complication scores during a year (28 hospitals) (2019.4-2020.3)

Neurosurgery

			*				*												
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Apr	-2.1	-1.8	-2.9	-1.7	0.0	0.0	-0.5	0.0	0.0			-1.0	-3.3	-2.2	0.0	0.0		-10.0	-2.7	0.0
May	-1.1	0.0	-1.3	-2.9	0.0	0.0	-2.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0	0.0	0.0
Jun	-1.2	-1.1	-3.6	-1.3	0.0	-5.0	-1.3	0.0	-1.8			0.0	-2.2	-2.0		0.0		0.0	0.0	-0.3
Jul	-0.6	0.0	-1.3	-4.0	0.0	0.0	-1.4	-1.4	-0.3				-3.3	0.0	0.0	0.0		0.0	0.0	0.0
Aug	-1.2	0.0	-1.8	0.0	0.0	0.0	-2.1	0.0	0.0			0.0	-3.3	0.0	0.0	0.0		0.0	-1.1	-0.3
Sep	-0.5	0.0	0.0	-2.1	0.0		-0.6	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	-0.7	0.0
Oct	-0.3	0.0	-1.1	0.0	0.0	0.0	-1.8	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	-2.0	-0.3
Nov	-0.5	0.0	-3.5	0.0	0.0	0.0	-3.8	0.0	0.0	0.0			0.0	0.0	0.0	-1.3		0.0	-2.5	0.0
Dec	-0.4	0.0	-3.2	-1.7	0.0	0.0	-1.1	0.0	-0.6	0.0			0.0	0.0	-0.3	0.0		-2.5	0.0	0.0
Jan	-1.8	0.0	-6.0	0.0	0.0	0.0	0.0	-0.7	-1.5	0.0		0.0	-8.6	0.0	0.0	0.0		-3.3	0.0	0.0
Feb	-1.4	-1.7	-2.7	-0.3	0.0	0.0	-2.4	0.0	0.0	0.0		-4.0	-1.1	0.0	0.0	0.0		0.0	-2.9	0.0
Mar	-0.4	0.0	-1.1	-0.7	0.0	0.0	-2.6	0.0	-0.7	0.0		0.0	0.0	-0.7	0.0	0.0		0.0	-4.2	-0.3

T	U	V	W	X	Y	Z	a	b	c	d
0.0	-0.8			0.0		-20.0		0.0	0.0	
0.0	0.0	0.0	0.0	0.0	-20.0			0.0	0.0	
0.0	0.0		0.0	0.0	-10.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0					0.0	0.0		
0.0	0.0	0.0	0.0			-20.0	0.0	0.0	0.0	
0.0	0.0		0.0		0.0	0.0	-10.0	0.0	0.0	0.0
0.0	0.0		0.0	0.0				-1.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.0			-1.1		0.0
0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	-20.0		-6.7	0.0	0.0	
-0.4	0.0	-20.0	0.0	0.0		0.0	-2.2	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	

A brief description of the table:

Hospitals B and F showed red scores for more than 8 months in a year. The reasons were that both hospitals deals with higher rate of emergency surgeries and intravascular surgeries than other hospitals. However, hospital B was advised to reduce the infection of the wound.

Complication scores during a year (26 hospitals) (2020.4-2021.3)

Neurosurgery

			*				*												
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Apr	-0.7	-1.0	-4.0	0.0	0.0	0.0	-0.7	-1.4	-1.1	0.0		-2.9	0.0	-2.2	0.0	0.0	0.0	0.0	-1.1	0.0
May	-0.7	0.0	-3.3	-1.2	0.0	0.0	-2.7	0.0	-0.9	0.0		-3.8	0.0	-4.3	0.0	0.0	0.0	-2.2	0.0	0.0
Jun	-0.6	0.0	0.0	-0.6	0.0	0.0	-5.3	0.0	0.0	0.0		0.0	0.0	0.0	-0.5	-1.5	-1.0	-6.7	0.0	0.0
Jul	-2.2	0.0	-1.9	-1.9	0.0	0.0	0.0	0.0	-1.3	0.0		-4.0	-7.5	0.0	-2.2	0.0	-1.3	-2.9	0.0	0.0
Aug	-0.6	0.0	-1.9	-0.5	0.0	0.0	-2.6	0.0	-0.8	0.0		0.0	-6.7	0.0	0.0	-1.3	0.0	0.0	-0.2	0.0
Sep	-0.9	0.0	-5.7	0.0	0.0	0.0	-2.7	0.0	0.0	0.0		0.0	-10.0	0.0	0.0	-1.6	0.0	-5.0	0.0	0.0
Oct	-0.9	0.0	-5.0	0.0	0.0	0.0	-0.8	0.0	-2.2	-4.0		0.0	-3.6	0.0	-3.8	0.0	-2.9	0.0	0.0	0.0
Nov	-1.5	0.0	-3.7	0.0	0.0	0.0	-3.3	0.0	-1.1	-10.0		0.0	-8.3	0.0	-1.4	0.0	-1.7	0.0	-0.8	0.0
Dec	-1.0	-1.4	-2.2	0.0	0.0	0.0	-2.5	0.0	-1.1	0.0		0.0	-13.3	0.0	-2.9	-1.9	0.0	0.0	0.0	0.0
Jan	-0.9	0.0	-2.0	-2.2	0.0	0.0	-1.4	0.0	0.0	0.0		0.0	0.0	0.0	-1.5	0.0		-1.8	-0.5	0.0
Feb	-1.2	-2.0	0.0	-1.1	0.0	0.0	-1.7	0.0	-1.3	0.0		0.0	0.0	0.0	-2.5	0.0	0.0	-0.7	0.0	-0.7
Mar	-0.8	0.0	-2.2	-0.9	0.0	0.0	-0.5	0.0	0.0	0.0		0.0	-1.0	-1.7	0.0	-1.1		-5.0	-0.3	0.0

T	U	V	W	X	Y	Z	a	b	c
0.0		0.0	0.0		0.0	-2.0	0.0		0.0
0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0
0.0	-20.0	0.0	-20.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0		0.0	0.0			0.0	0.0		0.0
0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
0.0		0.0	0.0			-1.8	0.0		-3.3
0.0		0.0	0.0	0.0		-1.0	0.0	0.0	0.0
0.0		0.0	0.0	0.0		-8.3	0.0	0.0	-5.0
0.0		0.0	0.0	0.0		0.0	0.0	0.0	-20.0
0.0		0.0	0.0	0.0		-4.0	0.0	0.0	-3.3

A brief description of the table:

Hospitals B and F performed many surgeries compared with other hospitals; moreover, the high rate of emergency and aggressive intravasucular surgeries resulted in worse scores. On detailed scrutiny, there were no problems.

Hospital I showed the consecutive poor results of subarachnoid hemorrhage, and urgent information was sought. On scrutiny, the poor techniques of surgeon was pointed out. He was instructed not to have surgery.

Complication scores during a year (46 hospitals) (2018.4-2019.3)

Orthopedics

*　　*

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	−0.2	0.0	0.0	0.0	−0.3	−1.0	−0.3		0.0		−0.8	0.0	0.0	−0.9	0.0	0.0	−0.7	0.0		−0.2	0.0	0.0	0.0	0.0
May	−0.2	−1.8	0.0	−0.3	0.0	−0.3	0.0		−0.2		−0.6	0.0	−0.2	−1.1	0.0	−0.5	−0.3	0.0	0.0	0.0	0.0	−0.3	0.0	0.0
Jun	−0.3	0.0	0.0	0.0	−0.4	0.0	0.0		0.0		−0.4	0.0	−0.4	−0.6	0.0	0.0	0.0	−6.7		0.0	0.0	−0.1	0.0	0.0
Jul	−0.2	−0.3	0.0	−1.1	−0.4	−0.1	0.0		−0.2		−0.2	−0.3	0.0	0.0	0.0	0.0	0.0	−2.0		−0.2		−0.2	−0.2	0.0
Aug	−0.3	0.0	−0.8	−0.6	0.0	−0.3	0.0		0.0	0.0	−0.1	−0.7	−0.5	−2.8	0.0	−0.7	0.0	−5.0	0.0	0.0	0.0	−0.3	−0.2	0.0
Sep	−0.4	0.0	0.0	−0.1	−0.4	−0.1	0.0		0.0	0.0	−0.4	−0.3	0.0	−1.6	0.0	0.0	0.0	0.0		0.0	0.0	−0.6	−0.2	−1.7
Oct	−0.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	−0.2	−0.3	0.0	−1.1	0.0	0.0	0.0	0.0		−0.1	0.0	−0.3	−0.2	0.0
Nov	−0.2	0.0	−0.4	−0.2	−0.3	0.0	0.0	0.0	0.0	0.0	−0.5	−0.4	0.0	−1.0	0.0	0.0	−0.9	0.0		−0.3	0.0	−0.3	−0.5	0.0
Dec	−0.3	0.0	−0.2	0.0	0.0	−0.6	0.0		0.0	0.0	−0.1	0.0	−0.3	−1.6	0.0	0.0	−0.5	−6.7		−0.1	0.0	−0.2	−0.3	0.0
Jan	−0.2	0.0	−0.2	0.0	−0.7	−0.2	−0.1	0.0	0.0	0.0	−0.5	0.0	−0.6	−0.4	0.0	−0.3	0.0	0.0		−0.1	0.0	−0.3	−0.2	0.0
Feb	−0.3	−1.0	0.0	−0.2	0.0	−0.5	0.0	0.0	−0.3	0.0	−0.4	0.0	−0.5	0.0	0.0	0.0	0.0	−1.1		0.0	0.0	0.0	0.0	0.0
Mar	−0.2	−0.3	0.0	0.0	0.0	0.0	0.0	0.0	−0.1	−0.3	−0.5	0.0	0.0	−0.7	0.0	−0.1	−4.4	0.0		0.0	0.0	−0.1	0.0	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
0.0	0.0	0.0	0.0	0.0		−1.3	0.0	0.0	0.0	0.0	−0.4	−1.5	0.0	−1.4	−0.2	0.0	−0.2	0.0	0.0		0.0	−0.4	0.0
0.0	0.0	−1.3	0.0	0.0		−0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−1.7	−0.2	0.0	0.0	0.0	0.0		0.0	0.0	−0.6
−1.3	0.0	0.0	−1.1	0.0		0.0	0.0	−1.2	0.0	0.0	0.0	0.0	0.0	0.0	−0.4	0.0	−1.0	0.0	0.0		0.0	0.0	0.0
0.0	−0.6	0.0	−0.3	0.0		−0.5	−1.0	−0.6	0.0	0.0	−0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.5	0.0
0.0	0.0	0.0	0.0	−1.0		−0.9	0.0	0.0	−1.4	0.0	−0.1	0.0	0.0	0.0	0.0	0.0	−0.3	−0.3	0.0		0.0	0.0	0.0
0.0	−5.0	0.0	0.0	−1.7		−0.4	−1.3	0.0	−3.3	0.0	0.0	0.0	0.0	0.0	−0.5	0.0	0.0	−0.3	0.0		0.0	0.0	0.0
0.0	0.0	0.0	−0.5	−0.8		0.0	0.0	−0.4	0.0	0.0	0.0	0.0	0.0	0.0	−0.1	0.0	−0.2	−0.3	0.0		0.0	0.0	0.0
−1.3	0.0	0.0	0.0	0.0		0.0	−1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.5	0.0		−0.7	0.0	0.0
0.0	0.0	0.0	0.0	0.0		0.0	0.0	−0.5	0.0	0.0	−0.3	0.0	−0.4	0.0	0.0	0.0	−0.1	0.0	0.0		0.0	0.0	−0.6
0.0	0.0	0.0	−1.4	0.0		0.0	0.0	−0.6	0.0	0.0	0.0	0.0	0.0	0.0	−0.3	0.0	0.0	0.0	0.0		0.0	0.0	−1.7
0.0	0.0	0.0	−2.4	0.0		0.0	0.0	−0.4	−2.5	0.0	0.0	0.0	−0.4	−1.4	−0.2	−0.3	0.0	−0.7	0.0		−1.9	0.0	0.0
−1.0	0.0	0.0	0.0	0.0		−0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.4	−0.1	−0.2	0.0		0.0	0.0	0.0

A brief description of the table:

Hospitals J and M showed bad results throughout the year and the presidents of both hospitals were instructed to improve by clarifying the problems.

Complication scores during a year (44 hospitals) (2019.4-2020.3)

Orthopedics

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	-0.2	0.0	-0.7	-0.6	0.0	-0.2	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	-0.8	0.0	-0.5	0.0	0.0		0.0	0.0	-0.1	0.0	0.0
May	-0.4	0.0	-0.7	-0.2	-0.4	-0.4	0.0	0.0	0.0	-0.6	-0.4	-0.6	0.0	0.0		-0.1	0.0	0.0	0.0	0.0	-4.0	-0.3	0.0	0.0
Jun	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	-0.2	0.0	0.0	0.0		0.0	-1.4	0.0		-0.1	0.0	-0.5	-0.2	0.0
Jul	-0.4	0.0	0.0	0.0	0.0	0.0	-0.4	-0.3	-0.3	0.0	-0.3	0.0	0.0	0.0		0.0	0.0	-3.3		-0.2	-1.4	-0.4	0.0	-1.0
Aug	-0.1	0.0	-0.5	-0.2	-0.2	0.0	0.0	0.0	0.0	0.0	-0.4	-0.3	0.0	0.0		0.0	0.0	0.0		-0.1	0.0	-0.3	0.0	0.0
Sep	-0.4	0.0	-0.4	-0.2	-0.2	-0.2	0.0	-0.1	0.0	0.0	-0.4	-0.3	-0.1	0.0		0.0	0.0	0.0		-0.3	0.0	0.0	0.0	0.0
Oct	-0.2	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	-0.2	0.0	-0.1	0.0		-0.9	0.0	-3.8		-0.2	0.0	-0.4	0.0	0.0
Nov	-0.2	-1.1	-0.5	0.0	0.0	-0.1	-0.3	-0.2	0.0	0.0	-0.4	-0.6	-0.1	0.0		-0.4	0.0	0.0		-0.2	0.0	-0.3	0.0	0.0
Dec	-0.1	0.0	-0.4	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0		0.0	0.0	0.0		-0.2	0.0	-0.2	0.0	0.0
Jan	-0.3	0.0	0.0	0.0	0.0	0.0	-0.1	-0.4	0.0	0.0	-0.3	0.0	0.0	0.0		-0.3	0.0	0.0		0.0	0.0	-0.3	0.0	0.0
Feb	-0.4	0.0	0.0	-0.1	0.0	-0.1	-0.2	0.0	0.0	0.0	-0.7	0.0	-0.3	0.0		0.0	0.0	-5.0		-0.1	0.0	0.0	0.0	0.0
Mar	-0.1	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	-0.3	-0.1	0.0	0.0		0.0	0.0	0.0		0.0	0.0	-0.2	0.0	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
0.0	0.0	0.0	-1.6	0.0		0.0	0.0	0.0	-2.5	0.0	0.0	0.0	-0.7	0.0	0.0	0.0	-0.1	-0.5	0.0		0.0	-0.7	0.0
0.0	-1.0	0.0	-0.6	0.0		-0.3	-5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.8	0.0	-0.3	0.0	-0.5		-0.2	-1.5	-0.7
0.0	0.0	0.0	0.0	0.0		-0.5	-2.5	0.0	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	-0.2	0.0	0.0	0.0		0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0		0.0	-1.3	-0.2	-1.4	-1.3	0.0	0.0	-3.3	0.0	0.0	0.0	-0.2	0.0	0.0		-0.2	0.0	-2.2
0.0	0.0	0.0	-0.3			0.0	0.0	0.0	0.0	-0.2	0.0		-0.3	-0.8	0.0	-0.2	-0.5	0.0	0.0		-0.2	0.0	-0.5
0.0	-4.0	0.0	-0.5	-2.5		0.0	-2.2	0.0	0.0	-0.3	0.0	0.0	-6.7	0.0	-0.2	-0.2	0.0	0.0	0.0		-0.1	0.0	0.0
0.0	0.0	0.0	-0.5	0.0		-0.4	-1.3	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.5	0.0	-1.3
0.0	0.0	0.0	0.0			-0.3	-2.5	0.0		0.0	0.0	-0.6	0.0	0.0	-0.2	-0.5	0.0	0.0	0.0		0.0	0.0	0.0
0.0	0.0	0.0	-0.4	0.0		0.0	0.0	0.0		0.0	0.0	-1.3	-1.3	0.0	-0.3	0.0	0.0	0.0	0.0		0.0	-1.0	0.0
0.0	0.0	0.0	-0.3			0.0	0.0	0.0	-10.0	0.0	0.0	-1.4	-0.3	0.0	-0.4	0.0	0.0	0.0	0.0		-0.3		0.0
-2.2	0.0	0.0	0.0			0.0	-5.0	0.0		0.0		0.0	-1.2	0.0	0.0	0.0	0.0	-0.1	0.0		0.0		0.0
0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0	-0.5	-1.3	0.0	-0.6	-0.2	0.0	-0.2	0.0		0.0		-1.8

A brief description of the table:

Although there were no hospitals showing more than 8 red scores, hospital J showed bad results, and hospital e showed twice the red scores lasting for three months, which were advised to improve by clarifying the problem.

Complication scores during a year (42 hospitals) (2020.4-2021.3)

Orthopedics

*

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	-0.4	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	0.0	0.0	-0.7	0.0	-0.1	0.0		0.0	-0.4	0.0		-0.1	-2.2	-0.1	-0.3	0.0
May	-0.1	0.0	0.0	-0.5	0.0	0.0	-0.3	0.0	0.0	0.0	-0.1	0.0	-0.3	0.0		-0.5	0.0	0.0		-0.4	0.0	-0.3	0.0	0.0
Jun	-0.1	0.0	0.0	0.0	0.0	0.0	-0.2	-0.1	0.0	-0.8	-0.2	-0.4	0.0	0.0		0.0	0.0	0.0		-0.7	0.0	-0.2	0.0	0.0
Jul	-0.1	0.0	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	-0.5	0.0	0.0	-0.1		-0.4	0.0			0.0	0.0	-0.2	0.0	0.0
Aug	-0.1	-0.8	0.0	-0.2	0.0	0.0	-0.1	0.0	0.0	0.0	-0.3	-0.2	0.0	0.0		0.0	0.0	-1.7		0.0	0.0	-0.2	0.0	0.0
Sep	-0.4	0.0	-0.3	0.0	-0.1	-0.8	-0.1	0.0	0.0	0.0	-0.4	0.0	0.0	0.0		-0.4	0.0	0.0		-0.3	0.0	-0.2	0.0	0.0
Oct	-0.3	0.0	0.0	-0.1	0.0	-0.3	-0.2	0.0	0.0	-1.7	-0.4	0.0	0.0	0.0		-0.1	0.0	0.0		-0.1	0.0	-0.3	0.0	0.0
Nov	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.3	0.0	0.0	0.0		-0.3	0.0	0.0		-0.1	-0.7	-0.1	0.0	0.0
Dec	-0.1	-0.8	0.0	0.0	-0.3	0.0	0.0	0.0	-0.5		-0.4	0.0	0.0	0.0		0.0	0.0	0.0		-0.2	0.0	-0.1	-0.2	0.0
Jan	-0.2	0.0	0.0	0.0	-0.5	0.0	0.0	0.0	0.0		-0.3	0.0	-0.1	0.0		0.0	0.0	0.0		-0.4	0.0	0.0	0.0	0.0
Feb	-0.1	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.4	0.0	-0.1	0.0		0.0	0.0			0.0	0.0	-0.1	0.0	0.0
Mar	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0		0.0	0.0	-0.1	-0.1		-0.1	0.0	0.0		0.0	0.0	-0.3	0.0	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
0.0	0.0	0.0	-0.6			0.0	-2.0	0.0	-10.0	-0.3	0.0	0.0	0.0	0.0	-0.4	0.0	-0.4	0.0	0.0		0.0		0.0
0.0	0.0	0.0	0.0			-0.2	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.0		-1.8
0.0	0.0	0.0	0.0			0.0		0.0		0.0	-1.3	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0
0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	-1.7	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0
0.0	0.0	0.0	0.0			0.0		0.0		0.0	0.0	0.0	0.0	0.0	-0.1	0.0	-0.3	-0.3	0.0	0.0	0.0		0.0
0.0	0.0	0.0	-0.6			0.0		0.0		-0.6	-1.7	0.0	0.0	0.0	0.0	-0.1	0.0	-0.4	0.0	-2.5	0.0		-8.6
0.0	0.0	0.0	-0.8			-0.4		-0.2		-0.7	0.0	-0.9	-5.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0		0.0
0.0	0.0	0.0	0.0			0.0		0.0		-1.3	-2.5	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	-2.9	0.0		-1.0
0.0	0.0	0.0	-0.2	0.0		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0		-2.9
0.0	0.0	0.0	-0.2			0.0		0.0		0.0	-1.7	0.0	-1.7	0.0	0.0	0.0	0.0	-0.9	0.0	0.0	0.0		-0.4
0.0	0.0		0.0	0.0		0.0		0.0		0.0	-0.8	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0		0.0
-1.4	0.0	0.0	-0.7			0.0		0.0		0.0	0.0	0.0	-1.8	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.3		0.0

A brief description of the table:

Hospital J is being surveyed, and executive committee will determine whether to visit the hospital to discuss about the future.

Complication scores during a year (28 hospitals) (2018.40-2019.3)

Urology

*

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Apr	−0.1	0.0	−0.5	0.0	0.0	0.0	−0.4		0.0		0.0	0.0	0.0	−0.6			0.0	0.0	0.0
May	−0.5	0.0	0.0	0.0	0.0	−1.4	−0.5		0.0		−5.0	0.0	0.0	−0.5	0.0		−0.3	0.0	0.0
Jun	−0.4	0.0	0.0	−0.5	−0.4	−0.4	0.0		0.0		0.0	0.0	−0.4	−0.3			−0.2	0.0	0.0
Jul	−0.4	0.0	−0.7	−1.3	−0.8	−0.9	−0.9		0.0		0.0	0.0	0.0	−0.4	0.0		0.0	−0.7	−0.1
Aug	−0.1	0.0	0.0	0.0	0.0	−0.7	−0.3		0.0		0.0	0.0	0.0	0.0			−0.2	0.0	−0.1
Sep	−0.1	0.0	0.0	0.0	−0.6	0.0	−1.4		0.0	0.0	0.0	0.0	−0.2	−0.8			0.0	0.0	0.0
Oct	−0.2	0.0	0.0	−0.5	−1.0	−0.2	−0.4		−0.1		−0.7	0.0	0.0	0.0			0.0	0.0	0.0
Nov	−0.1	0.0	0.0	0.0	−0.4	0.0	−0.2		0.0	0.0	−0.7	0.0	−1.0	0.0			−0.2	0.0	0.0
Dec	−0.2	0.0	0.0	0.0	−1.2	0.0	−0.3		0.0		0.0	0.0	0.0	0.0			−0.2	0.0	0.0
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0			−0.2	0.0	0.0
Feb	−0.3	0.0	0.0	−1.1	0.0	−0.2	−0.3	0.0	0.0		0.0	−5.0	−0.4	−0.2	0.0		0.0	0.0	0.0
Mar	−0.1	0.0	0.0	0.0	0.0	0.0	−0.8	0.0	0.0		0.0	0.0	0.0	0.0			−0.1	0.0	0.0

* *

S	T	U	V	W	X	Y	Z	a	b	c
−1.1	−1.0	0.0	−0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
−1.4	0.0	0.0	−1.2	−1.8	0.0	0.0	0.0	0.0	0.0	−1.7
−1.2	−0.5	0.0	−0.9	−4.0	0.0	0.0	0.0	0.0	0.0	0.0
−2.0	−2.2	0.0	−0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
−0.8	−0.6	0.0	−0.4	0.0	0.0	0.0	0.0	0.0	0.0	−0.8
−0.4	−0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
−0.4	−0.5		0.0	0.0	0.0	0.0	−1.0	0.0	0.0	0.0
−0.6	−0.4	0.0	0.0	0.0	0.0	0.0	0.0			0.0
−0.7	0.0	0.0	0.0	0.0	−2.0	0.0	0.0	0.0	0.0	0.0
−0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
−1.6	−1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
−0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

A brief description of the table:

Hospitals F, S, and T showed star marks.
Seven hospitals (D, E, F, P, S, T, and V) showed red scores lasting for 3 months or more, and these hospitals were advised to improve by finding the problems.

Complication scores during a year (28 hospitals) (2019.4-2020.3)

Urology

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Apr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0			-0.2	0.0	0.0	
May	-0.2	0.0	0.0	0.0	0.0	-0.5	-0.7	0.0	-0.3		-0.8	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Jun	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0			-0.3	0.0	0.0	0.0
Jul	-0.2	0.0	0.0	0.0	0.0	-1.3	-1.2	0.0	-0.3		0.0	0.0	0.0	0.0			-0.5	0.0	-0.4	0.0
Aug	-0.1	0.0	0.0	0.0	0.0	-0.5	-0.7	0.0	-0.4		0.0	0.0	0.0	0.0			0.0	0.0	0.0	
Sep	-0.1	0.0	0.0	0.0	0.0	-0.7	-0.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Oct	-0.1	0.0	0.0	0.0	0.0	-0.2	-1.2	0.0	0.0		-0.6	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Nov	-0.1	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	-0.3		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Dec	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	-0.7	0.0		0.0	0.0	0.0	0.0			-0.7	0.0	0.0	0.0
Jan	-0.3	-1.5	0.0	0.0	0.0	0.0	-0.7	-1.0	0.0		0.0	0.0	0.0	-1.4			0.0	0.0	0.0	0.0
Feb	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Mar	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	0.0		0.0	0.0	0.0	0.0			0.0	0.0	-0.2	0.0

*

T	U	V	W	X	Y	Z	a	b	c	d
-0.3	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-3.3	0.0	0.0
-1.1	0.0	0.0	0.0	-3.3	0.0	0.0	0.0	0.0	0.0	0.0
-1.0	0.0		0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0
-0.4	0.0	0.0	0.0	0.0	-0.3	0.0	-0.3	0.0	0.0	0.0
-0.2	0.0		-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-0.5	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-0.6	0.0	-10.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
-1.3	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

A brief description of the table:

Only hospital S showed star marks.
Hospitals F and T showed a decrease in the number of red scores after receiving suggestions from the evaluation committee. However, three hospitals (E, F, and S) still showed the red scores lasting for three months or more, although the improvements were observed in hospitals D, P, T, and V.

Complication scores during a year (29 hospitals) (2020.4-2021.3)

Urology

	Ave	A	B	C	D	E	F *	G	H	I	J	K	L	M	N	O	P	Q	R	S *
Apr	-0.6	0.0	0.0	0.0	0.0	-0.5	-1.6	0.0	0.0	0.0	0.0	0.0	-0.8	0.0	-10.0	0.0	0.0	0.0	0.0	-2.8
May	-0.2	0.0	-3.3	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		-0.3
Jun	-0.2	-1.2	0.0	0.0	-0.2	-0.5	-1.0	0.0	0.0	0.0	0.0	0.0	-0.9	0.0		0.0	0.0	-0.2	0.0	0.0
Jul	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.2
Aug	-0.2	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.4	0.0	0.0	0.0	-0.2
Sep	-0.1	0.0	-0.6	0.0	0.0	-0.1	-0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	-0.8
Oct	-0.3	0.0	0.0	-1.0	0.0	-0.5	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-2.2
Nov	-0.1	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	-0.8
Dec	-0.1	0.0	0.0	0.0	0.0	-0.6	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.6	0.0	0.0	0.0	-0.4
Jan	-0.1	0.0	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	0.0	0.0	0.0	-1.1
Feb	-0.8	-1.1	0.0	0.0	0.0	-0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-20.0	0.0	0.0	0.0	0.0	-0.6
Mar	-0.2	0.0	0.0	0.0	0.0	-0.4	-0.1	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

T	U	V	W	X	Y	Z	a	b	c
-0.3	0.0	0.0	-1.0	0.0	0.0	-0.4	0.0	0.0	0.0
0.0	0.0	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-0.4		0.0	0.0	-0.8	0.0	0.0	0.0	0.0	0.0
0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	-3.3	0.0
0.0		-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	-1.0	0.0	0.0	-2.0	0.0	0.0
0.0	0.0	-0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0		-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0		-0.1	0.0	0.0	0.0	0.0	-5.0	0.0	0.0

A brief description of the table:

Hospitals F and S showed star marks which were also observed in 2018 and 2019, and these two hospitals showed the red scores lasting for three months or more. Surveys were performed in these two hospitals and strong instructions were given to these hospitals.

Complication scores during a year (43 hospitals) (2018.4-2019.3)

Digestive organ Internal Medicine

*

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	−0.6	0.0	0.0	0.0	0.0	0.0	−0.3		−1.5	0.0	0.0	0.0	−1.2	0.0		0.0	−1.0	0.0		0.0	0.0	0.0	−20.0	−0.6
May	−0.2	0.0		−0.6	0.0	0.0	−0.3		0.0			0.0	−0.2	−2.5			0.0	0.0			0.0	0.0	−4.0	0.0
Jun	−0.6	−0.3	0.0	−0.2	0.0	−6.7	−0.6		−0.2	0.0		0.0	−0.2	0.0			−1.3	−10.0			0.0	0.0	−0.4	0.0
Jul	−0.2	0.0	−2.0	−0.1	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	−1.4	0.0		0.0	0.0	0.0	−0.4	−0.3
Aug	−0.2	0.0		−0.5	0.0	−3.3	−0.2		0.0	0.0		0.0	0.0	0.0		0.0	−0.6	0.0		0.0	0.0	0.0	−0.5	0.0
Sep	−0.4	0.0	0.0	−0.6	0.0	0.0	−0.2		0.0	0.0		0.0	−0.2	−5.0		0.0	−0.6	0.0		0.0	0.0	0.0	−1.4	0.0
Oct	−0.1	0.0	0.0	−0.1	0.0	0.0	0.0		−0.2	0.0		0.0	0.0	0.0		0.0	−1.2	0.0		0.0	0.0	0.0	0.0	−0.7
Nov	−0.2	−0.3	0.0	−0.1	0.0	−2.9	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	−0.7	−0.5
Dec	−0.5	0.0	0.0	−0.3	−0.7	−8.0	0.0		−0.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	−0.1	−0.2
Jan	−0.1	0.0		−0.7	0.0	−2.9	0.0		0.0	0.0		0.0	−0.5	0.0		0.0	−0.6	0.0		0.0	0.0	0.0	−1.0	0.0
Feb	−0.1	0.0		−0.3	−0.7	0.0	−0.3		−0.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Mar	0.0	0.0	0.0	−0.1	0.0	0.0	0.0		−0.2	0.0		0.0	0.0	0.0			−0.9	0.0		0.0	0.0	0.0	0.0	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
	0.0	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0	0.0	0.0	−0.2	0.0		0.0	−4.0	0.0
0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0		−1.7		0.0	0.0	0.0	−0.6	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	−1.7		0.0	0.0	−0.9		0.0		0.0					−0.8	−3.3	0.0	0.0	0.0	
	0.0	0.0	0.0		0.0	0.0	−0.8		0.0		−2.5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0	0.0		0.0	0.0	0.0				0.0		0.0	0.0	0.0	−0.4	0.0	0.0	0.0	0.0	
0.0		−1.1		0.0	0.0	0.0		0.0		−1.7			0.0	0.0	−0.5	0.0	0.0	0.0	0.0	−1.1	
0.0	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0	0.0		−0.3	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0		−1.1		0.0		0.0	0.0	0.0	−0.3	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		−3.3	−2.5	0.0		0.0		0.0		0.0		0.0	−0.4	0.0	0.0	0.0	0.0		
0.0	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0			−0.4	0.0	0.0	0.0	0.0		
0.0		0.0		0.0	−1.7	0.0		0.0		0.0		0.0	0.0		−0.5	0.0	0.0	0.0	0.0		
0.0	0.0	0.0		0.0	0.0	0.0		0.0		0.0			0.0		−0.2	0.0	0.0	0.0	0.0		

A brief description of the table:

Only hospital P showed star mark of red scores, and five hospitals (C, E, P, V, and m) showed eight or more red scores.

Complication scores during a year (40 hospitals) (2019.4-2020.3)

Digestive organ Internal Medicine

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	-0.5	0.0	-10.0	-0.1	0.0	-4.4	-0.2		0.0	0.0	-1.0	0.0	-1.0	0.0		0.0	-0.5	0.0		0.0	0.0	0.0	-0.4	-0.2
May	0.0	0.0	0.0	-0.4	0.0	0.0	-0.2		0.0	0.0	0.0	0.0	0.0			0.0	-0.4	0.0		0.0	0.0	0.0	0.0	-0.2
Jun	-0.3	0.0	0.0	-0.2	0.0	0.0	-0.3		-0.5	0.0	-0.4	0.0	-0.2	0.0		0.0	-0.3	0.0		0.0	0.0	0.0	-0.3	0.0
Jul	-0.1	0.0	0.0	-0.5	0.0	0.0	-0.4		-0.5	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	-0.4	-0.2
Aug	-0.2	0.0	0.0	-0.1	0.0	0.0	-0.1		0.0	0.0	-0.8	0.0	0.0	0.0		0.0	-0.9	0.0	0.0	0.0	0.0	0.0	-0.3	0.0
Sep	-0.1	0.0	0.0	-0.5	0.0	0.0	-0.1		0.0	0.0	-1.3	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	-0.3	0.0
Oct	-0.1	0.0	0.0	-0.1	0.0	0.0	-0.1		-0.3	0.0	0.0	0.0	-0.5	0.0		0.0	-0.5	0.0		0.0	-0.8	0.0	-0.3	-0.4
Nov	-0.1	0.0	0.0	-0.3	0.0	0.0	-0.2	0.0	0.0	0.0	-0.7	0.0	0.0	0.0		0.0	-0.5	0.0		0.0	-0.4	0.0	-0.3	-0.4
Dec	-0.2	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-5.0	0.0	0.0	-0.3	0.0		0.0	-0.4	0.0		0.0	0.0	0.0	0.0	-0.2
Jan	-0.3	0.0	0.0	-0.1	0.0	0.0	-0.9	0.0	0.0	0.0	-0.5	0.0	-0.4	0.0		0.0	-0.5	0.0		0.0	0.0	0.0	-0.1	-0.2
Feb	-0.1		0.0	-0.1	0.0	0.0	-0.2	0.0	-0.4	0.0	-0.8	0.0	-0.3	0.0		0.0	0.0	0.0		0.0	-1.0	-2.0	-0.1	0.0
Mar	-0.1	0.0	0.0	-0.2	0.0	0.0	-0.1	0.0	-0.3	0.0	-0.4	0.0	0.0	0.0		0.0	-0.4	0.0			0.0	0.0	0.0	-0.4

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
	0.0	0.0		0.0	0.0	0.0				0.0					0.0	-0.2	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0		0.0	0.0	0.0				0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	-5.0	0.0		0.0		0.0			0.0	0.0	0.0	-1.1	0.0	0.0	0.0	-2.5	
0.0	0.0	0.0		0.0	0.0	0.0				0.0			0.0		0.0	-0.6	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		-1.4		0.0	0.0	0.0		0.0			-2.0		0.0	-1.1	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0			0.0	0.0		-0.2	0.0	0.0	0.0	0.0	
0.0	0.0	-2.0		0.0	0.0	0.0				0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	-1.7	0.0	0.0			0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		-2.0	0.0	0.0	0.0			0.0			0.0			-0.4	0.0	0.0	0.0	0.0	
	0.0	0.0		-1.3	0.0	0.0	0.0			0.0			-4.0			-0.3	0.0		0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0			0.0	0.0		-0.3	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0		0.0	0.0			-0.3	0.0	0.0	0.0	0.0	

A brief description of the table:

Hospitals F, J, and n showed star signs. However, hospital P showed improvements although it showed red scores lasting for three or more months.

Complication scores during a year (38 hospitals) (2020.4-2021.3)

Digestive organ Internal Medicine

							*				*												
	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Apr	-0.1		0.0	-0.2	0.0	0.0	-0.1	0.0	-0.3		-1.1	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	-0.2	0.0
May	-0.1		0.0	-0.1	0.0	0.0	-1.7	0.0	0.0		-0.6	0.0	-0.3	0.0		0.0	0.0	0.0			0.0	0.0	-0.5	0.0
Jun	-0.2		0.0	0.0	0.0	0.0	-0.4	0.0	0.0		0.0	0.0	0.0	-0.5		0.0	-0.5	0.0		0.0	-1.4	0.0	-0.6	-0.2
Jul	0.0		0.0	-0.5	0.0	0.0	-0.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	-0.4
Aug	-0.2	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.3	0.0	0.0	0.0		0.0	0.0	0.0			-1.1	0.0	-0.2	-0.2
Sep	-0.2		0.0	-0.6	0.0	0.0	-0.3	0.0	-0.4		-0.4	0.0	-0.1	0.0		0.0	0.0	0.0			0.0	0.0	-0.2	0.0
Oct	-0.2		0.0	-0.4	0.0	0.0	-0.3	0.0	0.0		-0.8	0.0	-0.3	-0.7		0.0	-0.8	0.0			0.0	0.0	0.0	-0.2
Nov	0.0		0.0	0.0	0.0	0.0	-0.3	0.0	-0.4	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0	0.0
Dec	-0.1		0.0	-0.4	0.0	0.0	-0.1	0.0	-0.1		-0.5	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	-0.1	-0.5
Jan	-0.3		0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	0.0	0.0	0.0		0.0	0.0	0.0			0.0	-3.8	0.0	-0.4
Feb	-0.1		0.0	0.0	0.0	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0		0.0	-0.6	0.0			0.0	0.0	0.0	0.0
Mar	-0.3		0.0	-0.1	0.0	0.0	-0.1	0.0	-0.5	-7.5	-0.4	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	-0.1	0.0

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
0.0	0.0	0.0		0.0	0.0	-0.8				0.0		-0.5	0.0		0.0	-0.5	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0		0.0	-1.1		0.0	0.0	0.0	0.0	0.0		
0.0	0.0	0.0		0.0	0.0	-3.3	0.0			0.0		0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0		0.0	0.0		0.0	-0.2	0.0	0.0	0.0	0.0	
0.0	0.0	0.0		-2.5	0.0	0.0				0.0		0.0	-1.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0		-1.7	0.0	0.0				0.0		-0.3	-0.7			-0.3	0.0	0.0	0.0	-1.7	
0.0	0.0	0.0		0.0	0.0	0.0				0.0		-0.4	-2.5		0.0	-0.2	0.0	0.0	0.0	-1.7	
0.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0		0.0	0.0			0.0	0.0	0.0	-0.4	0.0	
0.0	0.0	0.0		0.0	0.0	0.0				0.0		0.0	0.0		0.0	-0.8	0.0	0.0	0.0	0.0	
0.0		0.0		0.0	-3.3					0.0		0.0	0.0		0.0	-1.1		0.0	0.0	0.0	
0.0	0.0	0.0		0.0	0.0	0.0				-0.9		-0.2	0.0			0.0	0.0	0.0	0.0	0.0	
0.0	0.0	-1.0		0.0	0.0	0.0	0.0			0.0		-0.3	0.0		0.0	-0.6	0.0	0.0	0.0	-1.0	

A brief description of the table:

Hospitals F and J showed star marks again as shown in last year (2019), and hospital V showed red scores lasting for three months or more for the second consecutive year.

Complication scores during a year (36 hospitals) (2018.4-2019.3)

Cardiovascular Medicine

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N*	O	P	Q	R	S	T	U	V	W
Apr	−0.6	0.0	0.0	−0.7	−1.5	−2.5	−0.6	0.0	−0.9		0.0	0.0	0.0	0.0	−1.5	−2.9	−3.3	−0.3	−0.4	0.0	0.0	0.0	0.0	
May	−0.5	0.0	−0.9	−1.1	−0.8	−2.5	−0.3	0.0	0.0	0.0	0.0	−0.2	0.0	0.0	−0.4	0.0	0.0	−0.4	−0.4	−8.0	0.0	0.0	0.0	
Jun	−0.2	0.0	0.0	−0.1	−0.7	0.0	−0.3	0.0	−0.4		0.0	−0.4	0.0	0.0	−1.4	0.0	0.0	−0.4	−0.7	−0.1	0.0	0.0	0.0	
Jul	−0.5	0.0	−0.9	−0.3	−0.4	−2.7	−0.4	0.0	0.0		−4.0	0.0	0.0	0.0	0.0	0.0	0.0	−1.1	0.0	−0.3	0.0	0.0	0.0	
Aug	−0.3	0.0	0.0	−0.3	−0.3	0.0	−1.4	0.0	−1.1		0.0	0.0	−2.5	0.0	−1.3	0.0	0.0	−0.9	−0.2	−0.1	0.0	−1.0	0.0	
Sep	−0.4	0.0	0.0	−0.4	0.0	0.0	−0.6	0.0	−0.5		0.0	−0.2	−2.0	−2.9	−0.4	0.0	0.0	−0.9	0.0	−0.9	0.0	−0.8	−0.5	
Oct	−0.1	0.0	0.0	−0.3	0.0	0.0	−0.6	0.0	0.0	0.0	0.0	−0.4	0.0	0.0	0.0	0.0	0.0	−0.5	0.0	−0.7	0.0	−0.9	0.0	
Nov	−0.3	−1.1	0.0	−0.3	−0.3	0.0	−0.2	0.0	0.0		0.0	−0.3	0.0	0.0	−1.5	0.0	0.0	0.0	0.0	−0.7	0.0	0.0	0.0	
Dec	−0.1	0.0	0.0	0.0	0.0	0.0	−0.3	0.0	0.0		0.0	0.0	−1.4		−0.5	0.0	0.0	0.0	0.0	−0.1	0.0	0.0	0.0	
Jan	−0.6	0.0	−0.4	0.0	−0.8	0.0	−0.8	0.0	−1.1		0.0	0.0	−1.5		−0.7	−4.0	−4.0	0.0	0.0	−0.5	0.0	0.0	0.0	
Feb	−0.2	0.0	0.0	−0.3	0.0	0.0	−0.2	0.0	0.0	0.0	0.0	0.0	−2.7	0.0	−0.6	0.0	0.0	−0.4	0.0	−0.1	0.0	0.0	0.0	
Mar	−0.1	−1.3	0.0	−0.8	0.0	0.0	−1.3	0.0	−0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.4	0.0	0.0	0.0	

X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m
0.0				0.0	0.0	−0.4	−10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−4.0	0.0	0.0	0.0
0.0				0.0	0.0	−0.5	0.0	−1.1	0.0	0.0	0.0	0.0	0.0	−3.3	0.0
0.0	0.0			0.0	0.0	0.0	0.0	−1.0	0.0	0.0	0.0	0.0	−6.7	−1.3	0.0
0.0				0.0		0.0		0.0	0.0	0.0	0.0	0.0	−2.0	0.0	0.0
0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−2.0
0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0				0.0	0.0	−0.5	0.0	−0.6	0.0	0.0	0.0	0.0	−6.7	0.0	0.0
0.0				0.0		0.0	0.0	−0.5	0.0	0.0	0.0	−2.0	0.0	0.0	0.0
0.0				0.0	0.0	−0.8	0.0	0.0	0.0	0.0	−5.0	0.0	−2.9	0.0	0.0
0.0	0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−3.2
0.0					0.0	−0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

A brief description of the table:

Only hospital N showed a star mark and six hospitals (D, F, L, N, Q, and S) showed red scores lasting for three months or more.

Complication scores during a year (37 hospitals) (2019.4-2020.3)

Cardiovascular Medicine

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O *	P	Q	R	S
Apr	-0.2	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	-0.4		0.0	0.0	-1.2	0.0	0.0	-0.7	0.0	0.0		-0.9
May	-0.2	0.0	0.0	-0.8	0.0	0.0	-0.2	0.0	0.0		0.0	-4.0	-0.2	0.0		-0.4	0.0	0.0		0.0
Jun	-0.2	0.0	-0.3	0.0	0.0	-3.6	-0.2	0.0	-0.7		0.0	0.0	-0.4	0.0		-0.6	0.0	0.0		0.0
Jul	-0.3		0.0	-0.6	0.0	0.0	0.0	0.0	0.0			0.0	-0.9	0.0		-0.2	0.0	0.0	0.0	-0.4
Aug	-0.5	0.0	0.0	-0.7	0.0	-1.7	-0.2	0.0	-0.6			0.0	-0.8	-8.0		0.0	0.0	0.0	0.0	-0.5
Sep	-0.2	-1.7	-0.4	-1.2	0.0	0.0	-0.2	0.0	0.0			0.0	-1.8	0.0		-0.5	0.0	0.0		0.0
Oct	-0.3	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	0.0	0.0	0.0	-1.0	-2.5		0.0	0.0	-3.6	0.0	0.0
Nov	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	-2.5		-0.7	0.0	0.0	0.0	-0.4
Dec	-0.1	0.0	0.0	-0.8	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0
Jan	-0.1	0.0	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	-1.4		-0.4	0.0	0.0	0.0	-0.4
Feb	-0.4	0.0	0.0	0.0	0.0	-5.0	-1.2	0.0	-0.5	0.0	-5.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0		0.0
Mar	-0.2	0.0	0.0	-0.4	0.0	-1.7	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.6	0.0	0.0		0.0

T	U	V	W	X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n
-0.4	-0.3	0.0	0.0	0.0						0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.8
0.0	-0.4	0.0	0.0	0.0					0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.5
0.0	-0.1	0.0	0.0	0.0					0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	-1.0			0.0	-1.3	0.0	0.0	0.0	-3.3	-2.0
0.0	-0.6	0.0	0.0							0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.1	0.0	0.0	0.0		0.0			0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.1	0.0	0.0	0.0		0.0	0.0		0.0		-0.4			0.0	-0.7	0.0	0.0	0.0	0.0	0.0
0.0	-0.6	0.0	0.0	0.0		0.0					-0.4			0.0	0.0	0.0	0.0	0.0	-4.4	0.0
0.0	0.0	0.0	0.0	-0.5			0.0				-0.1			0.0	0.0	0.0	0.0	0.0	-1.8	0.0
0.0	-0.3	0.0	0.0	0.0			0.0			0.0	-0.6			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.1	0.0	0.0	0.0			0.0			0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.2	0.0	0.0	-0.2			0.0				0.0			0.0	-1.3	0.0	0.0	0.0	0.0	-1.2

A brief description of the table:

Hospital O, which is the same hospital as Hospital N in 2018, showed a star mark.
The investigation was successful.

Complication scores during a year (36 hospitals) (2020.4-2021.3)

Cardiovascular Medicine

	Ave	A	B	C	D	E	F *	G	H *	I	J	K	L	M	N	O *	P	Q	R	S
Apr	-0.1	0.0	0.0	-0.3	0.0	0.0	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.3		0.0	0.0	0.0
May	-0.2	-2.0	0.0	-0.6	0.0	0.0	-0.7	0.0	-0.4	0.0	0.0	0.0	0.0	0.0		-0.6	0.0	0.0	0.0	0.0
Jun	-0.2	0.0	0.0	-0.4	0.0	-2.5	-0.6	0.0	-0.6	0.0	0.0	0.0	-0.3	0.0		0.0		0.0	0.0	-0.4
Jul	-0.3	-1.5	0.0	-0.5	0.0	-2.2	-0.6	0.0	-0.7	0.0	0.0	0.0	-0.2	0.0		-0.3		0.0		0.0
Aug	-0.4	0.0	-0.4	-0.7	0.0	-5.7	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0		-1.1		0.0		-0.4
Sep	-0.1	0.0	-0.2	-0.3	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	-0.1	0.0		-0.5		0.0	0.0	-0.7
Oct	-0.5	0.0	-0.3	0.0	0.0	0.0	-0.5	0.0	-0.4	-3.3	-6.7	0.0	0.0	0.0		-0.4		-2.5	0.0	0.0
Nov	-0.7	-1.3	0.0	0.0	0.0	0.0	0.0	0.0	-1.7	0.0	0.0	0.0	-0.7	0.0	0.0	-0.6		-2.9		0.0
Dec	-0.3	0.0	0.0	0.0	0.0	-4.0	-0.1	0.0	-0.8	0.0	0.0	0.0	-0.1	0.0		-0.8		0.0	0.0	0.0
Jan	-0.2	-2.4	0.0	0.0	0.0	-2.0	-0.2	0.0	-0.5	0.0	0.0	0.0	-0.3	0.0		-0.6		0.0	0.0	-0.2
Feb	-0.3	-3.6	0.0	0.0	0.0	0.0	-0.4	0.0	-0.6	0.0	0.0	0.0	0.0	0.0		-0.9		0.0	0.0	0.0
Mar	-0.2	0.0	0.0	-0.4	0.0	-2.0	-0.5	0.0	-0.8	0.0	0.0	0.0	-0.2	0.0		-0.2		0.0	0.0	-0.2

T	U	V	W	X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n
-0.3	-0.1	0.0	0.0	0.0							0.0			0.0	-1.7	0.0	0.0	0.0	0.0	0.0
0.0	-0.4	0.0	0.0	0.0		0.0					-0.5			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.2	0.0	0.0	-0.4		0.0				0.0	-0.5			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.2	0.0	0.0	0.0		0.0	0.0			0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	-4.0
0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	-5.7
-0.2	-0.2	0.0	0.0	0.0							0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.3	0.0	0.0	0.0		0.0					-0.4			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.2	0.0	0.0	0.0		-5.0				0.0	-0.8		0.0	0.0	-1.5	0.0	0.0	0.0	0.0	-8.3
0.0	-0.2	0.0	0.0	-0.9							-0.9			0.0	0.0	0.0	0.0		0.0	-1.1
0.0	-0.2	0.0	0.0	-1.0		0.0					0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.4	0.0	-1.2	0.0		0.0					-0.9			0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	-0.2	0.0	0.0	-0.2		0.0					0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0

A brief description of the table:

*Marked hospital N (2018.4-2019.3) and O hospital（2019.4-2021.3) refer to the same hospital. A prudent survey certified that poor results was due to the high frequency of emergency intravascular treatment in patients with severe conditions. Other problems were not found.

Complication scores during a year

Obstetrics & Gynecology 2018.4-2019.3 25 hospitals

*

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
Apr	−0.2		0.0	0.0	0.0		0.0			−0.5	0.0	0.0	0.0	0.0	0.0	−0.1		0.0	0.0	0.0	−3.3		0.0	0.0	0.0	0.0
May	−0.2		0.0	0.0			0.0			0.0	0.0	0.0	−0.7		0.0	0.0		0.0	0.0	0.0	−5.0		0.0	0.0	0.0	0.0
Jun	−0.2		0.0	0.0	0.0		−0.8			0.0	0.0	0.0	−0.6	0.0	0.0	0.0		0.0	0.0	0.0	−3.3		−0.8	0.0	0.0	0.0
Jul	−0.2		0.0	0.0	0.0		0.0			0.0	0.0	0.0	−1.8	0.0	−0.1	0.0	0.0	0.0		−3.3	0.0		0.0	0.0	0.0	0.0
Aug	−0.3		0.0	0.0	0.0		0.0			0.0	0.0	−6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	−0.7
Sep	−0.1	0.0	0.0	0.0	0.0		0.0			0.0	−0.8	0.0	0.0	0.0	−0.3	−0.2	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	−0.7
Oct	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0	0.0	−1.1	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Nov	−0.1	0.0	0.0	0.0	0.0		0.0			0.0	0.0	0.0	−2.0	0.0	−0.8	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dec	−0.4	0.0	0.0	0.0	0.0		0.0			0.0	−2.0	0.0	−0.7	0.0	0.0	0.0		0.0		0.0	−5.0		−1.3	0.0	0.0	−1.3
Jan	−0.1	0.0	0.0	0.0	0.0		0.0	−0.5		0.0	0.0		−0.7	0.0	−0.5	0.0		0.0	0.0	0.0	0.0		0.0	0.0	−0.7	0.0
Feb	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	−0.8	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mar	0.0	0.0	0.0	0.0	0.0	0.0	−0.5	0.0		0.0	0.0	0.0	0.0	0.0	0.0	−0.2	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0

Obstetrics & Gynecology 2019.4-2020.3 25 hospitals

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
Apr	-0.1	0.0	0.0		0.0	0.0	0.0	0.0		-0.4	0.0	0.0	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	-1.0	0.0	0.0
May	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.8	0.0	0.0	-0.9	0.0	0.0	0.0		0.0	0.0	0.0	0.0		-0.3	0.0	0.0	0.0
Jun	-0.2	0.0	-2.5	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.7	0.0			-0.9	0.0	0.0	0.0
Jul	-0.1		0.0	0.0	0.0	0.0	0.0	0.0		-0.4	0.0	0.0	-1.7	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0	0.0
Aug	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	-1.6	0.0	0.0	0.0		0.0	-1.1	0.0	0.0		0.0	0.0	0.0	0.0
Sep	-0.1	0.0	0.0		0.0	0.0	-0.3	0.0		-0.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		-0.6	0.0	0.0	0.0
Oct	-0.1	0.0	0.0	0.0	0.0	0.0	-0.5	0.0		0.0	0.0	0.0	0.0	0.0	-0.3	0.0		0.0	0.0	0.0	0.0		-0.5	0.0	0.0	0.0
Nov	-0.2	-3.3	0.0	0.0	0.0	0.0	-0.3	-0.7		-0.2	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Dec	-0.1		0.0	0.0	0.0	0.0	0.0	0.0		0.0	-0.5	0.0	0.0	0.0	-0.1	0.0		0.0	0.0	0.0	0.0		-0.5	0.0	0.0	0.0
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	0.0
Mar	0.0	0.0	0.0		0.0	0.0	-0.3	0.0		0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0

Obstetrics & Gynecology 2020.4-2021.3 24 hospitals

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
Apr	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	-1.7	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Jun	0.0	0.0	0.0	0.0	0.0	0.0	-0.7	0.0		0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0
Jul	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Aug	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0	0.0
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.5	0.0		0.0		-0.2	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Oct	-0.1		0.0	0.0	0.0	0.0	0.0	0.0		-0.4	0.0	0.0	0.0		-0.2	-0.6	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	-1.8
Nov	-0.1		0.0	0.0	0.0	0.0	-0.2	0.0		-1.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	-0.9
Dec	-0.1		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		-0.4	0.0	0.0	-1.7
Jan	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.6	0.0		-1.7	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0	0.0
Feb	-0.2	0.0	-2.0	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	-0.2	0.0	0.0	0.0	0.0	-1.7			0.0	0.0	0.0	0.0
Mar	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	-2.5		0.0	0.0	0.0	0.0

A brief description of the table:

Hospital L in 2018 showed improvement due to the suggestions of the evaluation committee, and Hospital T in 2018 and Hospital F also showed improvement. Hospitals I and Y also received suggestions from the evaluation committee.

Complication scores during a year

Ophthalmology 2018.4-2019.3 21 hospitals

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q *	R	S	T	U
Apr	0.0	0.0	0.0	0.0	0.0		−0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
May	−0.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	−1.0	0.0	0.0	0.0	0.0	0.0		−1.1	0.0	0.0	−0.3
Jun	−0.9	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		−0.9	0.0	0.0	0.0
Jul	0.0	0.0	0.0	0.0	−0.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.1	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Aug	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.8	0.0	0.0	0.0	0.0
Sep	−0.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	−0.7	0.0	0.0	0.0	0.0	0.0	−0.5	0.0	0.0	0.0	0.0
Oct	−0.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	−0.8	0.0	0.0	0.0	0.0	−0.5	0.0	0.0	0.0	0.0
Nov	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−0.5	0.0	0.0	0.0	0.0
Dec	−0.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−1.1	0.0		0.0	0.0
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	−0.7	0.0	0.0	0.0	0.0
Mar	−0.1	0.0	0.0	0.0	0.0	0.0	−0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−2.0	0.0	0.0	0.0	0.0

Ophthalmology 2019.4-2020.3 21 hospitals

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Apr	0.0	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Jun	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-1.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Nov	-0.1	0.0	0.0	0.0	0.0	0.0	-0.9	0.0		0.0		-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Feb	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0

Ophthalmology 2020.4-2021.3

	Ave	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Apr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
May	0.0		0.0	0.0		0.0	0.0	0.0						0.0	0.0	0.0				0.0		0.0	0.0
Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Jul	-0.1	0.0	0.0	0.0	0.0	0.0	-2.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aug	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Nov	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.2	0.0	0.0	0.0	0.0
Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-0.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Feb	-0.1	0.0	0.0	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	-2.0	0.0	0.0
Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	

A brief description of the table:

Hospital Q in 2018 showed a star mark. The doctor was dismissed because of consecutive bad results of the surgery.

Results of peer review from transition of monthly complications from 2018.4 to 2021.3. (1)

1. Neurosurgery
   - Hospitals B and F showed poor results and survey was performed. Poor results are due to the emergency illness being treated with intravascular surgery.
   - Hospital B seemed to have postoperative bleeding more than usual, and Hospital L suddenly showed lasting poor results. However, these hospitals had high rate of emergency surgeries and there was no specific problem.
   - Hospital C showed marked improvements.
   - As a result of emergency peer review of Hospital O, the department of neurosurgery was stopped from functioning temporarily, and the doctors retired under the guidance of the Medical accident Investigation Committee.
2. Surgery
   - A couple of hospitals were surveyed because of poor results lasting for more than 3 month through remote access to TIS. However, none of important issues in terms of medical safety were found.
   - Hospital “g” showed improvement since 2020.4.
   - Hospitals C and F showed poor results since 2020.4. Hospital F has been showing poor results since 2019. On the other hand, the results are improving in hospital M, “k”, and “m”. The results of hospital “k” improved by changing the surgical procedure in elderly cancer patients.
3. Cardiovascular surgery
   - The survey of hospitals B, H, L, and N through remote access to TIS were performed because of poor results. However, these hospitals had high rate of emergency surgeries and there was no specific problem. From now on, consistency in our scores can be achieved by comparing with the JCVSD score.
   - Hospital K stopped surgery because of lasting poor scores under the guidance of executive committee, and the doctors retired.
4. Urology
   - Bad scores may result from kidney transplantation, and the score of hospital S was the worst; therefore, a survey was scheduled.
   - The scores of hospital T improved remarkably.
   - Hospital F should be carefully attended to.
5. Orthopedics
   - Hospital J showed conspicuously poor results.
   - Hospital M showed sudden improvements since early 2019.

Results of peer review from transition of monthly complications from 2018.4 to 2021.3. (2)

6.Digestive organ internal medicine

・The score of hospital P improved in early 2020, although the score has been showing poor results.

・Hospital J started this department in 2019.4. However, the score has been poor.

・ The score of hospital F worsened since 2019.4, and that of hospital “n” since 2019.6.

7. Cardiovascular medicine

・Hospital F showed sudden change in the score to bad in 2019.12, and Hospital O has been showing the worst score, and the scores of hospitals C and H are also not good.
Although the survey for these hospitals were performed, specific problems were not found.
Currently, their progress is being monitored.

8. Obstetrics & Gynecology

・The score of hospital L was improving after 2019.9, although that of 2018 was bad.

・Hospital V showed improvement after 2020.1, although the score of 2019 was not good.
Recently, anxious results continue in hospitals I and Y.

9. Hospital R started the department of ophthalmology in 2018.8; however, the poor scores continued and the doctor retired in 2019.4
In 2019.10, the department of ophthalmology opened again and good scores were observed.

Number and rate of complications by year in the nine departments

Clinical Department		2018.4-2019.3		2019.4-2020.3		2020.4-2021.3
	rate (%)	Number of complications/ number of surgeries	rate (%)	Number of complications/ number of surgeries	rate (%)	Number of complications/ number of surgeries
surgery	4.17	946/22693	4.08	951/23302	3.51	765/21794
obstetrics & gynecology	1.47	45/3048	1.08	36/3328	0.82	26/3151
neurosurgery	6.17	181/2930	4.67	135/2889	5.21	160/3071
orthopedics	1.87	324/17620	1.69	301/17706	1.29	228/17548
ophthalmology	0.28	15/5190	0.13	6/4530	0.15	6/3833
Cardiovascular surgery	9.53	472/4948	7.41	342/4610	6.57	301/4581
Cardiovascular medicine	1.43	211/14719	1.04	157/14968	1.05	157/14942
urology	1.77	116/6296	1.29	77/5933	1.49	97/6492
Digestive organ Internal medicine	1.99	139/6954	1.83	148/8083	1.74	140/8042

In the departments of surgery, cardiovascular surgery, and neurosurgery, the combined data of emergency and scheduled surgeries are presented.
The rate of complications were high in the department of cardiovascular surgery and neurosurgery. On the other hand, in the yearly course, the departments of surgery, orthopedics, cardiovascular surgery, and digestive organ internal medicine showed gradual decline in the rate.

Three years general comment

It has been 3 years in April this year since hospital peer review across 9 departments started and would have passed 4 years when the pioneered peer review at neurosurgical department is added. There are many hospitals which received various indications based on the results obtained from the 7 evaluation items, and some doctors were forced to stop surgery. However, it is no exaggeration to say that medical staff including medical doctors were going to turn their eyes towards medical quality and safety. When we listed the problems, there were many important problems: various problems of evaluation items, especially consideration for differences in circumstances between emergency and stand-by surgery, lack of man power or staff in charge, collecting data on the reason for the longer duration to complete surgery, lack of information on the case when the chairman of evaluation committee of each department judges, and corresponding action when emergency problems are reported. In order to improve these matters, we modified the system. First, it became possible to collect data of medical records rapidly by remote access through TIS under the permission of Tokushukai Ethical Committee. Second, we separately evaluated the emergency from stand-by surgery at three departments (cardiovascular surgery, surgery, and neurosurgery) considering the difference in circumstances between emergency and stand-by surgery. Thus, we revised it to impart a high degree of perfection, and problematic issues were discussed by each evaluation committee of the department involved; a representative visited the hospital and provided guidance on solving the problem. Specifically, two neurosurgical departments, one cardiovascular department and two surgical departments were found in need of, and received guidance and advice.

In Conclusion

This peer review system enhanced healthcare providers', especially doctors', awareness of medical safety and care quality through examination of the data.

Executive Committee

We take full responsibility for the wording and content of this Peer Review Booklet

Executive Çommittee

8.08, 2021

Contact for Peer Review
General Incorporated Association Tokushukai
Medical Safety･Quality control department
Tokushukai Medical Group Peer Review Executive Committee Secretariat
Kenta Nishihira, Mitsuru Yatani, Hideto Kanazawa, Hidemitsu Nakagawa
1-3-1 Kudanminami, Chiyoda-Ku, Tokyo Tokyo-do Chiyada Building 14F, 102-0074, Japan
TEL：03-3262-3133、FAX：03-5213-3602
E-mail：peer review@tokushukai.jp

Postscript

Three years results of peer review of Tokushukai Medical Group was presented at 44th World Hospital Congress which was held in Barcelona, Spain as hybrid event as below.

Dear Hidemitsu,

On behalf of the International Hospital Federation and La Unió Catalana d'Hospitals, we would like to thank you for your valuable contribution and support at our 44th World Hospital Congress.

As the world builds resilience to recover from the global pandemic, it was a real pleasure to finally come together in Barcelona after postponing our Congress in 2020. We had over 1,200 in-person registrations and 300 online participants from 71 countries/territories – one of our highest ever attendances.

The exchange of ideas and experiences is one of the IHF's greatest strengths as a knowledge-sharing organization. We very much appreciate your poster submission, and we hope that you enjoyed participating and networking throughout Congress.

This was the first Congress that was organized as a hybrid event, offering access to all sessions to attendees around the world. Recordings are available to watch again on the RIC Congress application until Friday 3 December. You can also continue to view the poster presentations, virtual booths, IHF Member Stories and gallery of photos.

Thank you again for your support of our Congress! We are looking forward to seeing you at the 45th World Hospital Congress in Dubai.

Best regards,

Karen Odessa Cabuyao
Events Specialist
International Hospital Federation
karen.cabuyao@ihf-fih.org
Website: www.ihf-fih.org

2021 IHF BARCELONA
44th World Hospital Congress
8-11 NOVEMBER 2021 | FIRA MONTJUÏC

BEST POSTER AWARD

This certificate is awarded to

Establishment of peer review system in Tokushukai Group Hospitals in Japan- 3 year results

Hidemitsu Nakagawa, Nozaki Tokushukai Hospital

For being recognized as the

BRONZE AWARDEE
DIGITAL AND TECHNOLOGY DRIVEN TRANSFORMATIONS

Ronald Lavater
CEO, International Hospital Federation

Roser Fernández
CEO, La Unio Catalana d' Hospitals

We were required to answer the questions about the following 5 items by IHF

Description of TMG Peeer Review System

1. Background information on how the service, program or project originated. What were the issues and challenges needing to be addressed?

The Tokushukai Medical Group (TMG) began to improve medical care quality in 2011. This implementation attempted to standardize and raise safety quality through JCI authentication (an international medical care evaluation format) and service hospital management in an ideal way. Moreover, in 2016, the TMG began practicing “Improvement Activity” by introducing a Quality Indicator (QI) index. Here, each group hospital shares and compares efforts toward improving care quality through best practices.

In Japan, doctors typically do not evaluate each other’s practices. However, it is an effective means of improving patient advocacy by guiding and reeducating healthcare workers to ensure patient safety. Recently, societal views on medical care have changed significantly. For instance, the patient can sometimes take his/her care for granted, and any unexpected complications can lead to medical litigation. In such cases, hospitals or medical groups need to determine whether they are correctly vetting, reviewing (and in some cases terminating) personnel.

The idea of peer review is “For the patient”: performing high-quality medical practice in conjunction with patient safety, which should be trusted by the patients. Regarding medical safety, actions of establishment of graduate school are seen, and moreover, the Ministry of Health, Labor, and Welfare defined that the strengthening of governance systems, such as the deployment of medical safety management officers and third party evaluations (JCI authentication, Japan Council for Quality Care, and IS09001 among others), and in particular, a mutual peer-review process, is strictly essential for recognizing the advanced treatment hospital. In the near future, the reinforcement of medical safety management systems and their implementation will become vital requisites for all facilities offering medical services. Thus, the national policy will change from recognition of published work to medical safety implementation and improvement in the quality of medical care.

2. Outline of the specific goals or targets envisaged prior to initiation of the service, program, or project

We expected doctors to resist the peer review system since it is the first of its kind organized in Japan, although we believed that to identify “a good method,” all health care workers, besides the medical doctors, will join the project. The executive committee created a peer review pamphlet and disseminated it to all hospitals in the TMG. An explanatory meeting was also held every two months at the Tokushukai Executive Meeting for one year. Moreover, members of the office of the executive committee visited five leading hospitals (Hokkaido, Tokyo, Osaka, Fukuoka, and Okinawa), explaining this new process to stakeholders such as medical clerks, medical information officers, and doctors. The target of this peer review system is doctors, and we frequently explained the purpose and importance of this peer review system to them, striving to wipe away their sense of resistance. Moreover, we visited Presidents of member hospitals who opposed the review process whenever they registered questions. The aim of this peer review system, before its initiation, was to identify those doctors at an early stage who won’t comply with the change, using accumulated data and emergency information from the hospital, and to maintain patient safety. We organized this peer review system so that health care workers make an effort to increase medical quality and safety under the recognition of “For the patients,” and TMG becomes a reliable world-class hospital group in the future.

3.The steps or stages involved in executing the service, program, or project. Include in the description the involvement of management, staff, patients, and other stakeholders.

We selected hospitals based on (a) a diagnosis procedure combination (DPC) (8) or a Diagnosis Procedure Combination/Per-Diem Payment System (DPC/PDPS), (b) electronic medical records, and (c) surgery departments for performing surgical operations. We included nine departments: neurosurgery, 30 hospitals; surgery, 48 hospitals; obstetrics and gynecology, 25 hospitals; urology, 29 hospitals; cardiovascular surgery, 24 hospitals; orthopedics, 47 hospitals; ophthalmology, 22 hospitals; cardiovascular medicine, 40 hospitals; and digestive organ internal medicine, 45 hospitals. Forty-eight of the 71 hospitals belonging to the TMG were part of this project.

The survey targets patients who will undergo (or have undergone) invasive surgeries in the nine departments of target hospitals; their medical care records will also be used for investigation with the permission of their Ethical Committees.

Purpose and methods

We investigated patients' medical records through the Tokushukai Information System (the TIS Co., Ltd.: the company that manages the medical records of each hospital), and the results derived from patients from the nine departments in each hospital were evaluated by comparing them to the benchmark set by Tokushukai Medical Group Hospitals.

The specific patient data for survey purposes included admission date, discharge date, readmission date, disease or condition treated, postsurgical complications (doctor, nurse, medical clerk, and medical information management officer), ADL on admission and discharge (nurse), surgical records (doctor), nursing records, and image recordings.

The seven evaluated items were, 1. surgery or endovascular treatment; 2. presence or absence of postoperative complications (10 postoperative complications); 3. presence or absence of blood transfusion; 4. difference in activities of daily living (ADL) pre- and post-surgery; 5. average length of hospital stay; 6. outcome (mortality rate); and 7. readmission rate.

4. How does this service, program or project demonstrate the organization's excellence or outstanding achievement in promoting quality and patient safety? What are the significant and sustainable results, outcomes, or improvements? (300 Words)

We evaluated seven items under this review. Surgeries were evaluated based on their degree of difficulty (JHIF score: Japanese Health Insurance Federation for Surgery) and the required time. However, for endovascular treatment, only the degree of difficulty was evaluated. Day surgery was not evaluated. Point calculation was performed by adding up all points for the operation and endovascular treatment; the total points during a one-month period were then divided by the number of surgeries performed. The obtained value was expressed as the evaluation point for the operations and endovascular treatment. The degree of difficulty was also determined using the JHIFS. The postoperative complication scores were uniquely determined from those determined by the JCI. Other evaluation items were also determined personally after deliberation.
Besides data obtained from the seven items evaluated, the distribution of the results in each hospital was demonstrated by three items: "Incidence of death with complications," "Incidence of permanent sequelae with complications," and "Incidence of medical safety problems (damage caused by human error) with complications," and were reported every month. The percentage occurrence was expressed per month as the cases with complications/total surgical cases in each hospital department. When each of the three items showed poor results for more than three months, medical records were investigated through TIS. Once the chairperson of the evaluation committee from each department determined the need to investigate for unexpected medical accidents, judging from the data of peer review or emergency reports, he/she requested an investigation from the headquarters. The hospital was then visited by the peer review execution committee, and discussions regarding "repeated problematic affairs," such as poor surgical results, were carried out with hospital executives and departments. Solutions and suggestions were provided to facilitate improvement across the entire department. The Tokushukai ethical review board approved the system.

5. How has the new service, program, or project received by the organization's stakeholders? Has the project been recognized by the community or received an award nationally, regionally, or internationally? Has the new project been adopted by other organizations and what is the likelihood of broader adoption?

We discussed with the executive members of the TMG how to make our peer review system acceptable among stakeholders. First, we created and sent a booklet describing the peer review to all TMG hospitals; then, we introduced the present peer review system and emphasized its necessity under the changed national policy in terms of increasing medical quality and patient safety in the Tokushu Newspaper, which is distributed regularly (fortnightly) to all TMG hospitals, including patients. Next, we introduced the peer review system in detail at the TMG Hospital Council of Japan. Moreover, we visited five TMG hospitals from Hokkaido to Okinawa in Japan, where we explained the contents of the peer review to stakeholders, such as doctors, nurses, medical clerks, and medical information management officers. We also visited hospitals and explained the peer review process in detail whenever stakeholders put up opposition. Whenever they pointed out mistakes or demanded corrections, we approved their request.
As for the presentation of the paper at an academic conference, we presented the present peer review system and its results at the Japanese Neurosurgical Meeting twice (2018 and 2019). We also presented the peer review system at the Japan Hospital Conference in 2018 and the 61st Japan All Hospital Conference in 2019, when I won an Excellent Treatise Award. We presented the present peer review at 7WCCS 2018, which organized the International Association of Risk Management in Medicine (IARMM). The title was "MONTHLY PEER REVIEW OF HOSPITALS' INVASIVE TREATMENT RESULTS IN THE TOKUSHUKAI MEDICAL GROUP" by Nakagawa et al. Regarding adoption by other hospitals, the momentum is rising since the initiation of our report, although there is no report of another hospital peer review. We believe that the Japanese government's policy will drive the project of peer review.