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ORIGINAL RESEARCH

Economic Burden and Prevention Strategies for Nosocomial Infections in Ophthalmic Surgery Under the Diagnosis-Related Group Payment Model

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Objective: To analyse the economic burden of ophthalmic surgery-related nosocomial infections under the diagnosis-related group (DRG) model payment mode and optimise prevention and control strategies.

Methods: Retrospective analysis was used to analyse the hospitalisation days and expenses of patients with nosocomial infection after cataract surgery in our hospital in 2020 and 2021 and compared with patients without infection in the same group of DRGs in the same period.

Results: In terms of hospitalisation days and expenses, the average hospitalisation time and average hospitalisation expenses of the infection group in 2020 were higher than those of the non-infection group. In 2021, the average hospitalisation time and the average hospitalisation expenses in the infected group were also higher than those in the non-infected group. The results of the root cause analysis showed that there were many issues in the infection-after-cataract-surgery group in the hospital related to hand hygiene and environmental cleaning and disinfection. Targeted improvement programmes were formulated accordingly, including attaching great importance to the prevention and control of infection after cataract surgery and implementing the full infection prevention and control training system. The adenosine triphosphate fluorescence detection and video surveillance methods were used to monitor the hand hygiene status of medical staff.

Conclusion: Diagnosis-related grouping puts forward higher requirements for both hospital costs and quality management. Hospital infection after cataract surgery can significantly affect treatment quality, increase medical costs and increase the economic burden of patients.

Keywords: diagnosis-related group, cataract surgery, nosocomial infection, economic burden, root cause analysis

Introduction

As the most common ophthalmic procedure globally, cataract surgery is pivotal in restoring vision for millions of patients annually. In China alone, more than 3 million cataract surgeries are performed each year,[1] with a postoperative infection rate of 0.033% in top-tier institutions.[2] While this incidence appears low, the economic and clinical consequences of such infections are profound. Patients with infections face prolonged hospitalisation, additional surgical interventions and even permanent vision loss,[3–5] which directly translates into escalated healthcare costs.

The payment mode in DRG (diagnosis-related group) is a system aimed at standardizing reimbursement according to predefined clinical categories. A diagnosis-related group model encourages hospitals to provide cost-effective care through two mechanisms. One is to apply forward-looking payment pressure, that is, by limiting the reimbursement

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amount based on the average non-complication cases, thus forcing hospitals to incorporate infection-related costs into their own operating costs for internal absorption.[6] This approach exerts a direct financial constraint on the poor control of infection. Another mechanism is the establishment of performance benchmarks, that is, the use of DRG-based indicators (eg the infection rate adjusted by the case mix index) to expose hospitals to market competition pressure, where medical institutions with higher infection rates will face corresponding penalties in terms of public reporting and reimbursement adjustments.[7] However, cataract surgery, typically classified as low-complexity DRGs with fixed reimbursement rates, becomes a financial liability when complicated by infections.[8]

In China's ongoing healthcare reform, DRG payment models have been piloted nationwide since 2019 to reduce wasteful expenditures while improving service quality.[9] Within this framework, cataract surgery serves as a critical case study: its high procedural volume and standardised nature make it a benchmark for DRG-based cost analysis. However, postoperative infections disrupt this equilibrium. Diagnosis-related group reimbursement for cataract procedures is calculated based on uncomplicated cases, with no additional compensation for infection-related complications.[10] Consequently, hospitals absorb the excess costs of extended stays, antibiotic therapies and repeat surgeries, a burden exacerbated by China's stringent DRG cost caps.[11]

Existing studies on DRGs and nosocomial infections predominantly focus on high-risk departments (eg intensive care or orthopaedics),[12] leaving a gap in ophthalmic surgery-specific analyses. This oversight is critical because cataract surgery's low-complexity DRG classification masks its vulnerability to financial penalties from infections.

By comparing the hospitalisation days and costs for patients with cataracts both with and without postoperative infection in the same DRG group in our hospital, this study indicates that cataract postoperative infection can significantly increase patients' economic burden. At the same time, the root cause analysis (RCA) method was used to find the RC of the incidence of postoperative infection after cataract surgery, formulate and implement targeted improvement programmes, and evaluate the effect of intervention measures on reducing the incidence of postoperative infection after cataract surgery based on hand hygiene compliance and environmental cleaning and disinfection.

Study Participants and Method

Source of Data

Cases of postoperative cataract infection from 2020 to 2021 were extracted from a real-time monitoring system of nosocomial infections (infection group: 224 cases in 2020; 213 cases in 2021), and cases without infection were matched from the DRG platform (non-infection group, 11,062 cases in 2020; 18,188 cases in 2021). The inclusion criteria were as follows: According to the "Expert Consensus on the Diagnosis and Treatment of Infective Endophthalmitis after Ophthalmology in China" (2022),[13] infection was reviewed and confirmed by the full-time staff of the hospital infection department. The exclusion criteria were: community infection or infection unrelated to surgery.

This study determined the DRG code for patients as CW19, based on the "China Healthcare Security Diagnosis Related Groups" (v.1.0) sub-grouping scheme.

Research Methods and Intervention Programmes

The hospitalisation days and expenses of patients with and without nosocomial infection after cataract surgery were extracted from the DRG platform.

Indicator with relatively prominent issues concerning infection management after cataract surgery were monitored by implementing two infection control measures: hand hygiene and the surface cleaning and disinfection of environmental objects. The specific research methods were as follows.

(1) Establishment of an RCA group: The participants in this group included the head of the hospital infection management department, the full-time staff of the infection management department, nurse management team, the quality control doctor of the infection management department Each member learned about and became familiar with RCA-related knowledge before participating in the study and could independently investigate and analyse an infection.

(2) The brainstorming method was used to analyse existing problems in the postoperative infection control of patients with cataracts as a way to establish a direct cause and subsequently convene a group meeting. The aim of this meeting was to discover influencing factors for the high incidence of postoperative infection in patients with cataracts, and to analyse the results using a causality (fishbone) diagram. The reasons for the low compliance and accuracy rates linked to hand hygiene established via brainstorming were personnel, facilities, management and other factors (Figure 1); the reasons for poor cleaning and disinfection effects concerning the surfaces of objects in the surgical environment were personnel, facilities, management and others (Figure 2).

(3) How to determine the root cause. In the first analysis, all team members answered the following three questions with "Yes" or "No". If you answer "No", it is the root cause, and if you answer "Yes", it is the direct cause. (1) Once the direct cause is eliminated, these problems will no longer occur. (2) The direct cause was corrected, and this problem would no longer repeatedly occur for the same reason. (3) The direct cause was eliminated, and this

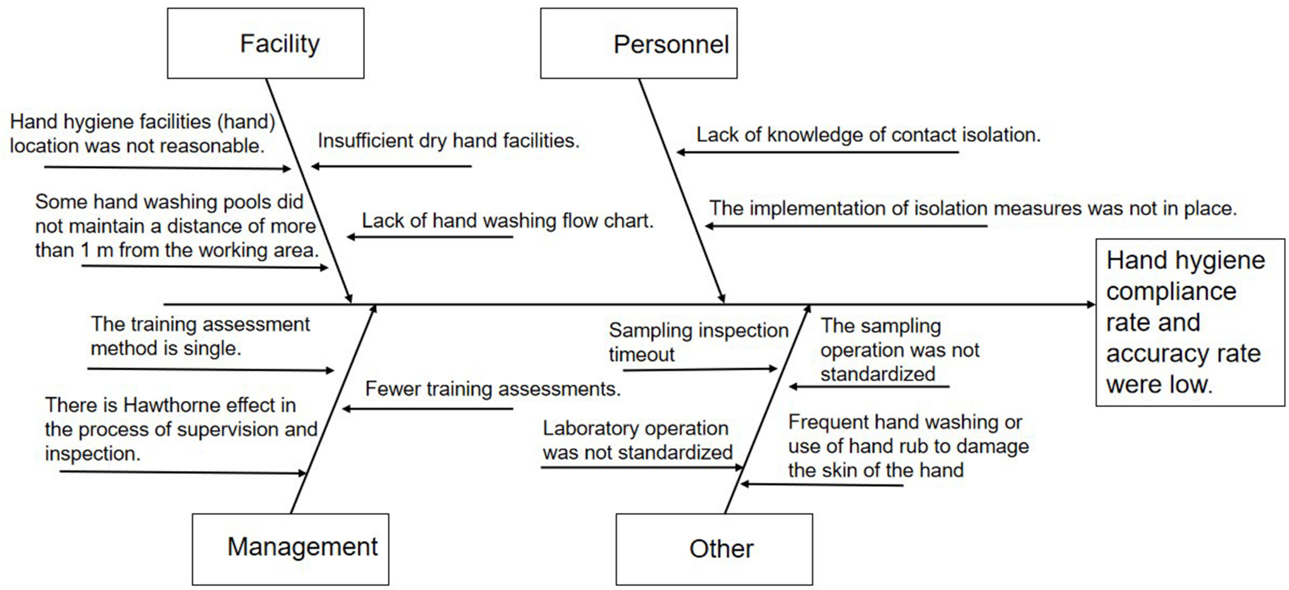

Figure 1 Influencing factors of poor hand hygiene compliance rate and accuracy rate.

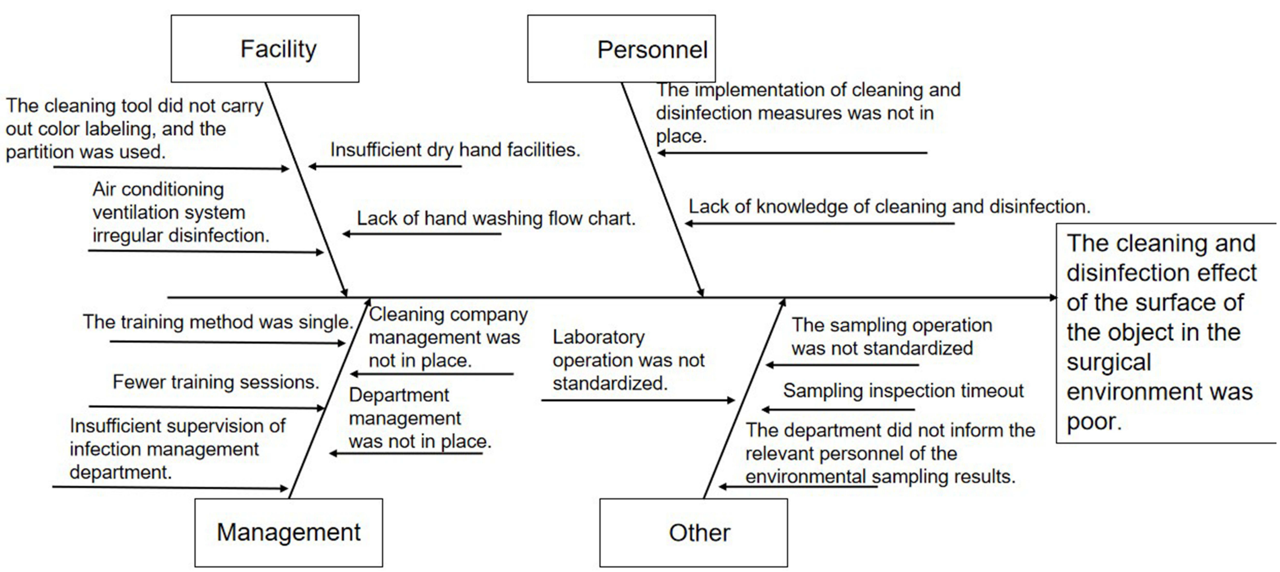

Figure 2 Influencing factors of poor cleaning effect of object surface in surgical environment.

type of problem would no longer occur. After further analysis of the brainstorming results, the RCA team members determined the root cause of the incidence of postoperative infection in patients with cataract from two perspectives: hand hygiene (Table 1) and cleaning and disinfecting of the surgical environment (Table 2). All three questions, which were identified as the root causes, were answered using the "yes" option.

The second analysis: According to an in-depth analysis of the influencing factors confirmed by the RCA team members, a questionnaire was designed and on-site and online questionnaires were made available to the medical staff. The Pareto analysis method was used to verify the root cause. The direct cause of the first 80% of the cumulative percentage was selected as the root cause. A total of 43 questionnaires were distributed to relevant personnel. According to the results of the questionnaire, the direct causes were divided into three categories: management, facilities and personnel. The importance of the influencing factors listed by the medical staff was voted on. According to the 80/20 principle, the direct cause of the cumulative percentage of less than 80% was an "important minority factor" affecting the incidence of postoperative infection in patients with cataract. The main reasons for the low compliance and accuracy rates concerning hand hygiene were focused on the management level and personnel, including: a lack of hand hygiene reminder signs; poor awareness of autonomous learning; the department did not have a good sense of control culture established; hand hygiene knowledge was insufficient, primarily related to cleaning personnel and accompanying visitors. The main

Table 1 Confirmation Table of Root Causes of Poor Compliance Rate and Accuracy Rate of Hand Hygiene

Problem	All Reasons	Analytical Judgment	Direct Cause (Yes)	Root Cause (No)
Hand hygiene compliance rate and accuracy rate were low.	Lack of knowledge of hand hygiene, lack of self-learning.	Question 1: After the direct cause was eliminated, this kind of problem would not occur; Question 2: The direct cause was corrected, and the problem would not be repeated for the same reason; Question 3: If the direct cause was excluded, the problem would not continue to occur.		√
	The implementation of "seven-step washing technique" was not standardized, and it was easy to ignore in the process of heavy work.			√
	The layout of the department was limited, and the location of hand hygiene facilities (hand) was unreasonable.		√	
	The layout of the department was limited, and some hand washing pools were not kept > 1 m away from the work area.		√	
	Insufficient dry hand facilities.		√	
	Flow chart off, lack of hand washing flow chart.		√	
	The training assessment method was single.		√	
	Fewer training assessments.		√	
	Laboratory operation is not standardized.		√	
	Hand sanitizer contains irritating ingredients, frequent hand washing or the use of hand sanitizer damage to the hand skin.		√	
	Hand hygiene sampling operation was not standardized.		√	
	Hand hygiene sampling specimens submitted overtime.		√	
	Laboratory operation was not standardized.		√	

Table 2 Confirmation Table of Root Cause of Poor Cleaning Effect of Object Surface in Surgical Environment

Problem	All Reasons	Analytical Judgment	Direct Cause (Yes)	Root Cause (No)
The positive rate of environmental object surface specimens was high.	Lack of knowledge of cleaning and disinfection, lack of self-learning.	Question 1: After the direct cause was eliminated, this kind of problem would not occur; Question 2: The direct cause was corrected, and the problem would not be repeated for the same reason; Question 3: If the direct cause was excluded, the problem would not continue to occur.		√
	The implementation of cleaning and disinfection measures was not in place, and it was easy to ignore that the cleaning tools were not color-coded during the heavy implementation of the work.			√
	There was no special supervision in the department, and the air conditioning and ventilation system was disinfected from time to time.			√
	The training assessment method is single.			√
	Fewer training assessments.		√	
	The infection management department has limited human resources and insufficient supervision.		√	
	The full-time management personnel of the department were not clear, and their own supervision was not in place.			√
	Cleaning company management was not in place.			√
	The sampling operation was not standardized.		√	
	Sampling inspection timeout.		√	
	Laboratory operation was not standardized.		√	
	The department did not inform the relevant personnel of the environmental sampling results.		√	

reasons for the poor cleaning effect of the surfaces of environmental objects were focused on the management level and personnel, including: the department personnel did not effectively supervise the behaviour of the cleaning personnel and did not correct the improper use of cleaning tools or improper cleaning behaviour in time; the monitoring of cleaning quality method was not perfect; because the results of microbial culture could not be reported in time, the department could not find the existing problems in time; the order of cleaning and disinfection was chaotic (not orderly cleaning or disinfection from top to bottom, from light pollution to heavy pollution, from inside to outside); the cleaning of primary equipment and cloth towel disinfection effects was poor; those who performed daily cleaning and disinfection of the ward did not do a good job of wearing personal protection (isolation clothes and gloves as part of work wear); personal protection was not ensured during terminal disinfection (wearing isolation gowns and gloves as part of work wear).

The standard sampling method for hand hygiene testing was cotton swab sampling. After washing or disinfecting the hands of the subjects, samples were taken before contact with patients or before diagnosis and treatment activities. The examinee put his hands out, five fingers together. The examiner took 2 sterile cotton swabs and immersed them in a sterile eluent containing the corresponding neutralizer. Take a cotton swab on the finger surface of one hand, and rub it twice from the finger root to the finger tip (30 cm on the surface of one hand), and then rotate the sampling cotton swab; wipe the other hand with another cotton swab in the same way. The operator's hand contact site was cut off, and two cotton swabs were put into 10 ral sterile eluent test tubes containing corresponding neutralizers and tested. These procedures are also applicable to other hospital environments.

(4) Developing a rectification plan: Based on the root causes shown in Tables 1 and 2, a targeted rectification plan was formulated, identifying priority improvement projects, with accountability assigned to individuals and the delivery of timely evaluation feedback. The hospital's infection management department would develop a rectification plan for postoperative infections related to cataract surgery in conjunction with the RCA results. Once the plan had been implemented, the data on length of hospital stay and hospitalisation costs for the following year were collected and compared with data before implementation of the plan (2021) to analyse whether Only costs had decreased.

Statistical Analysis

Statistical analysis was performed using SPSS 26.0 (IBM, Armonk, NY, USA) statistical software. A normality test was performed using the K-S method. Those who did not meet the normal distribution were expressed as M (Q1, Q3), and between-group comparison was performed using the Mann–Whitney *U*-test test. A two-sided $P < 0.05$ was considered statistically significant.

Results

Economic Burden Analysis Section

General Situation

There were 224 patients with a nosocomial infection after cataract surgery in 2020, and 11,062 patients without such an infection in the same group of DRGs in the same period. In 2021, there were 213 cases and 18,188 cases, respectively. There were 291 men and 146 women in the same group of DRG patients with an infection, with an average age of (58.03 ± 10.43) years, and 139 patients with a history of chronic diseases. There were 18,915 men and 10,335 women in the same group of DRG patients without an infection, with an average age of (56.78 ± 14.36) years, and 9734 patients with a history of chronic diseases. There was no significant difference in gender, age and history of chronic diseases between the two groups ($P > 0.05$).

Comparison of Hospitalisation Days and Expenses

The economic burden of nosocomial infections was substantial and directly linked to preventable factors. In 2020, the total hospitalisation costs for the infection group (224 cases) reached ¥8.29 million (¥37,000 per case) compared to ¥26.77 million for the non-infection group (¥11,062 per cases). Similarly, in 2021, infections added ¥3.49 million in costs (¥19.50 million for 213 cases vs ¥22.19 million for 18,188 non-infected cases). Over two years, nosocomial infections resulted in a cumulative economic burden of ¥9.01 million for the hospital and patients, equivalent to 18-fold the annual budget allocated for infection prevention measures (¥500,000).

Further analysis revealed that the incremental cost per patient with an infection was ¥34,580 in 2020 and ¥16,280 in 2021. The 2020 incremental cost per patient was 14.3 times higher than the average hospitalisation cost of patients without an infection (¥2.42 million/11,062 cases ≈ ¥2187 per case).

The results showed that the average hospitalisation time (56.00 [35.00,81.00] vs 13.00 [7.00,19.00]) of the infected group in 2020 was higher compared with the non-infected group. In 2021, the average hospitalisation time in the infected group (39.00 [26.00,48.00] vs 8.00 [4.00,12.00]) was also higher than in the non-infected group (Table 3).

Root Cause Analysis to Develop Intervention Programmes

Implementation of Infection Prevention Training (2021)

To address the root causes identified in the 2020–2021 dataset, targeted training programmes were implemented from January 2021 to December 2021. The interventions aimed to strengthen an awareness of "everyone as an infection control practitioner" and included the following measures. (1) Specialised management: The hospital infection management department assigned dedicated staff to oversee ophthalmic surgery infection control. (2) Structured meetings: Two annual meetings were held in March and September 2021, involving the director of ophthalmology, head nurse, infection control doctors, nurses and hospital administrators. Discussions focused on resolving infection control challenges

Table 3 Comparison of Hospitalization Days and Expenses

	Infection Group	No Infection Group	*P* value
2020 year	224cases	11062cases	
Average hospitalization time (d) [M (Q1, Q3)]	56.00 (35.00, 81.00)	13.00 (7.00, 19.00)	<0.001
The average hospitalization expenses (ten thousand yuan) [M (Q1, Q3)]	37.00 (20.00, 53.00)	2.42 (1.37, 3.49)	<0.001
2021year	213cases	18188cases	
Average hospitalization time (d) [M (Q1, Q3)]	39.00 (26.00, 48.00)	8.00 (4.00, 12.00)	<0.001
The average hospitalization expenses (ten thousand yuan) [M (Q1, Q3)]	19.50 (13.00, 31.00)	1.22 (0.66, 1.77)	<0.001

identified in the 2020–2021 data. (3) Tailored training programmes: A training plan was developed in April 2021 covering hand hygiene, environmental disinfection and role-specific protocols for doctors, nurses and cleaning staff. (4) Assessment and feedback: Training sessions were conducted quarterly (June, September and December 2021). The assessment time was one week after the training, and the assessment results were fed back to the clinical department for continuous improvement.

Improve Hand Hygiene Compliance and Accuracy Rates

We take the following measures to improve the quality of hand hygiene:

(1) Add hand hygiene reminder signs around the bed unit and hand sink. (2) Increase the tools for monitoring the qualified rate of hand hygiene. The full-time staff of the hospital infection management department used the adenosine triphosphate (ATP) fluorescence detection method to monitor the hand hygiene of medical staff on-site. The relative light unit was less than 30, as qualified, and the results were fed back on-site. (3) To avoid the Hawthorne effect, a hand hygiene video surveillance system was installed in the ophthalmic operating room, and the video surveillance method was used to observe the usual hand hygiene implementation of medical staff. The specialist sampled at least 10% of the medical staff every month and observed at least 30 hand hygiene opportunities every month. (4) The effect of hand hygiene monitoring (compliance and accuracy rates) was analysed monthly and fed back to the clinical department to calculate the compliance and accuracy rates of hand hygiene, and the results were included in the performance appraisal.

Improving the Quality of Surface Cleaning and Disinfection of Environmental Objects

We take the following measures to improve the quality of surface cleaning and disinfection of environmental objects.

(1) Improve the cleaning and disinfection of equipment and change the cloth towel that wipes the equipment to a disposable disinfection wet towel. (2) After repeated use, the cloth towels and floor towels were replaced to centralised cleaning and disinfection. (3) Improve the disinfection process of the bed unit following the discharge of patients who underwent cataract surgery. After discharge from the hospital, the bed sheet, quilt cover and pillow cover were removed; the surface of the environmental furniture was wiped with a disposable disinfection wipe, and the bedding and pillow were disinfected with a bed unit disinfection machine. (4) Increase the monitoring tools for environmental cleaning. ATP fluorescence detection method and the fluorescence labelling method for real-time evaluation of environmental object surface cleaning and disinfection work and improve environmental disinfection quality in time.

Discussion

The results of this study indicate that nosocomial infection after cataract surgery significantly increased the length of hospital stay and medical expenses of patients. Under the DRG payment model, this finding is particularly important for the economic management of hospitals. Through the pre-defined grouping payment standard, DRG requires hospitals to complete medical services within a fixed reimbursement amount. If the actual cost exceeds the payment standard, the hospital must bear the excess cost. Conversely, if the cost is lower than the standard, it is possible for hospital to obtain a surplus. In this study, the average hospitalisation expenses of the infected group reached ¥37,000 and ¥195,000 in 2020 and 2021, respectively, which were significantly higher amounts than in the non-infected group (¥24,200 and ¥12,200, respectively). Assuming that the DRG payment standard for cataract surgery is close to the cost level of the non-infected group (ie ¥25,000/case), the actual cost for patients with an infection will far exceed the reimbursement amount, resulting in a large loss for the hospital. This economic pressure directly translates into the creation of financial incentives, prompting hospitals to optimise infection prevention and control measures to reduce excess costs and improve operational efficiency. In addition, performance evaluation under the DRG payment mode usually covers the dimensions of medical quality, cost control and patient satisfaction. Nosocomial infection not only increases direct medical costs but can also affect the hospital's score in terms of DRG assessment by prolonging hospitalisation time and causing complications, thus affecting the amount of medical insurance payment. Therefore, reducing the infection rate through RCA (eg strengthening hand hygiene and improving environmental cleaning and disinfection) is not only key to improving medical quality, but also a necessary strategy for hospitals to achieve financial sustainability under the DRG framework. This is consistent with the research conclusions in the literature on DRG-driven hospital cost control and quality improvement.[7,9,12] Mo et al[14] reported that multidrug-resistant infections increased hospitalisation expenditures by 20–30% in general surgical settings.

In this study, the RCA was used to discover the causes of the incidence of infection after cataract surgery. The reasons for the low compliance and correct hand hygiene rates included personnel, facilities and management. The reasons for the poor cleaning and disinfection of the surfaces of objects in the surgical environment also included personnel, facilities and management. Strictly implementing an infection management system after cataract surgery and strengthening supervision, establishing full-time infection control personnel and infection control groups, and carrying out training and education for ophthalmic surgery staff can effectively improve the awareness of infection prevention and control among medical staff, standardise the implementation of infection prevention and control measures, and help to support a good infection control culture in the department. However, it takes time for different groups of people to develop awareness and habits concerning infection prevention and control after cataract surgery. Because the population's knowledge structure and the degree of obtaining policies are different, the education of knowledge about infection after cataract surgery must take into account the level of the target group. Conduct separate training for different medical staff. Hospital infection management departments provide theoretical and operational training for clinical, outpatient, medical technology, logistics, administration, cleaning and nursing staff. The hospital infection management department carries out theoretical and operational training for clinical, outpatient, medical technology, logistics, administration, cleaning, nursing and other personnel.

Hand hygiene plays an important role in reducing hospital infections and pathogen transmission and is considered to be the most economical, effective and convenient method for hospital infection prevention and control. To promote the hand hygiene compliance of medical staff, the direct observation method is the first step. This method involves only observing and recording the hand hygiene status of medical staff.[15] However, when medical staff find that they are being observed, they will deliberately change their behaviour. The use of video surveillance has reduced the Hawthorne effect to some extent, increased the accuracy of monitoring data and has enabled the truthful and comprehensive recording of hand hygiene among medical staff. In addition, the ATP fluorescence detection method is applied to the evaluation of hand hygiene among medical staff. The previously used cotton swab test takes a long time, and the test results of cotton swab test are lagging behind. With the addition of the ATP fluorescence detection method, the hand hygiene effect of medical staff can be evaluated in a timely manner, and the hand hygiene of medical staff that does not meet set standards can be rectified, which can effectively prevent pathogenic bacteria from being spread via the hands of medical staff.

Studies[16] demonstrated that optimizing disinfection protocols (eg, replacing chlorine-soaked cloths with disposable wipes) significantly enhanced surface hygiene and reduced microbial contamination risks in hospital environments, as evidenced by decreased detection of nosocomial pathogens in routine sampling. To implement such improvements effectively, our institutional workflow assigns distinct responsibilities: medical staff are responsible for cleaning and disinfecting the bed unit prior to patient discharge, whereas terminal disinfection after discharge is handled by environmental services staff. The medical staff uses disinfection wipes to wipe the surface of instruments and equipment, while the cleaning staff uses a chlorine-containing disinfectant to soak a cloth used for wiping and disinfecting. However, this insufficiently dry cloth provides a suitable living environment for bacteria, and the use of this type of cloth and its hidden

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pollution risks will greatly increase the possibility of cross-infection. In addition, chlorine-containing disinfectants are volatile and can cause eye and respiratory mucosa. The disinfectant on the disinfecting wipes can still continue to play a disinfection role on the surface of the object after the wipe is finished. Disinfection wipes extend the disinfection time, compared with chlorine disinfectant soaked cloth wipe disinfection greatly saves time.[17] Cotton swab sampling is a standard sampling method for detecting pathogenic microbial contamination on high-frequency contact surfaces. The person being tested should wash or disinfect their hands before sampling, either prior to having contact with a patient or before performing medical activities.[18] It has always been an important aspect in hospitals to ensure the cleanliness of the environment. This study introduced an ATP bioluminescence assay to evaluate cleaning and disinfection effects on the spot. The bioluminescence assay only needs 15s to yield results, which can guide the cleaning and disinfection work in a timely and effective manner. At the same time, the fluorescence labeling technology with simple operation and exact effect was adopted. Through continuous monitoring and timely feedback, health and cleaning professionals can better comply with disinfection standards and improve the quality of environmental disinfection.

Ophthalmic surgical infections are projected to remain a pivotal challenge in healthcare-associated infection (HAI) management. To this end, medical institutions must adopt evidence-based infection prevention and control measures - including standardized hand hygiene protocols and environmental cleanliness - and improve prevention and control practices that are used in combination within a specific environment. A multifaceted strategy should be implemented, encompassing: (1) proactive microbial surveillance at critical control points; (2) clinical pathway optimization for early infection detection and intervention; (3) continuous quality improvement cycles via real-time monitoring of IPC compliance; and (4) stewardship programs to rationalize antibiotic use. Such systemic integration of prevention, surveillance, and feedback mechanisms will establish a closed-loop management chain to mitigate infection risks.[19]

This study has some limitations. It did not evaluate the advantages and disadvantages of high-risk departments that adopted other risk assessment methods. It only analysed the economic burden caused by infection after cataract surgery over two years. It also did not evaluate changes in resource occupation, doctor–patient contradiction or diagnosis and treatment efficiency before and after implementing the improvement measures, which require further study.

Conclusion

In summary, DR grouping puts forward higher requirements for hospital cost management and quality management. Nosocomial infection after cataract surgery will significantly affect the quality of medical care, increase medical costs and increase the economic burden of patients. Therefore, hospitals at all levels should strive to excel in the prevention and control of postoperative hospital infections. At the same time, the DRG payment mode also provides new ideas for the prevention and control of nosocomial infection after cataract surgery. In this study, DRGs were used as an entry point to identify the risk of infection after cataract surgery. Within one year, implement a multi-faceted infection control program (including real-time hand hygiene monitoring and bi-weekly disinfection audits) aimed at reducing post-cataract surgery infections by 20% and decreasing the associated economic burden Hospitals operating under DRG systems should prioritize infection control to improve patient outcomes, reduce costs, and optimize quality management.

Data Sharing Statement

All data generated or analysed during this study are included in this article. Further enquiries can be directed to the corresponding author.

Ethics Approval and Consent to Participate

This study was conducted in accordance with the Declaration of Helsinki and approved by the ethics committee of Shanxi Bethune Hospital, Shanxi Academy of Medical Sciences, Third Hospital of Shanxi Medical University, Tongji Shanxi Hospital. This clinical study is a retrospective study that only collects clinical data from patients, does not intervene in patient treatment plans, and does not pose any physiological risks to patients. The researchers will do their best to protect the information provided by patients from leaking personal privacy. Therefore, we hereby apply for exemption from informed consent.

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Disclosure

All of the authors had no any personal, financial, commercial, or academic conflicts of interest separately.

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