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The Implementation Effect of Hospital Accreditation System: A Stakeholder Approach

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Doctor of Management

Supervisor:
PhD Loizos Petrides, Assistant Professor (invited),
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Abstract

The original intention of the Chinese government in implementing grade accreditation was to promote hospital performance and because obtaining the accreditation of tertiary grade-A can provide hospitals with more state support, many hospitals become distracted from their core medical activities in pursuit of accreditation success. Therefore, the Chinese government has revised the hospital accreditation twice. To understand whether the accreditation system does promote hospital performance after these revisions, this study, adopts the stakeholder theory to research the implementation effects of the accreditation system on hospital performance (medical quality and safety). First, the Delphi method is used to identify the core stakeholders of the accreditation process (hospitals participating in the accreditation, accreditation experts, hospital administrators, medical staff, and patients). Second, the hospital grade accreditation in G province was selected as the main object of case analysis, and the impact of accreditation on hospital performance was studied. Third, qualitative interviews with stakeholders were conducted and their contents coded that yielded six core categories: unified thinking and understanding, focusing on industry norms, regulation compliance, innovative learning, applied learning, medical quality and safety. This study contributes to the literature by making explicit the relationship among these categories and proposing a model about how hospital grade accreditation affects hospital performance. The model takes hospital performance (medical quality and safety) as the outcome variable and external legitimacy improvement and internal organizational learning as mediating variables, that is, hospital accreditation improves hospital performance by promoting hospital legitimacy externally and organizational learning internally.

Keywords: stakeholders; hospital grade accreditation; medical quality; medical safe; influence factor

JEL: I11, I18

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Resumo

A intenção original do governo chinês ao implementar a acreditação de hospitais era promover o desempenho hospitalar. No entanto, devido ao fato de que obter a classificação de um hospital de nível A pode trazer mais apoio estatal, muitos hospitais se desviaram das suas atividades essenciais procurando o sucesso na obtenção da classificação. Consequentemente, o governo revisou o sistema de acreditação duas vezes. Para entender se o sistema após essas revisões realmente promove o desempenho hospitalar, este estudo adota a teoria dos stakeholders para investigar os efeitos da implementação do sistema de acreditação no desempenho hospitalar (qualidade médica e segurança). Primeiro, o método Delphi foi usado para identificar os principais stakeholders deste processo (hospitais participantes, especialistas em acreditação, administradores hospitalares, equipas médicas e pacientes). Em seguida, a acreditação de hospitais em G province foi selecionada como objeto de estudo de caso, e o impacto da acreditação no desempenho hospitalar foi estudado. Terceiro, entrevistas qualitativas com stakeholders foram conduzidas e seu conteúdo codificado, resultando em seis categorias principais: pensamento e compreensão unificados, foco em normas da indústria, conformidade regulatória, aprendizagem inovadora, aprendizagem aplicada, qualidade médica e segurança. Este estudo contribui para a literatura ao explicitar a relação entre essas categorias e propor um modelo sobre como a acreditação de hospitais afeta o desempenho hospitalar. O modelo considera o desempenho hospitalar (qualidade médica e segurança) como a variável de resultado e a melhoria da legitimidade externa e a aprendizagem organizacional interna como variáveis mediadoras, ou seja, a acreditação de hospitais melhora o desempenho hospitalar ao promover a legitimidade externa e a aprendizagem organizacional interna.

Palavras-chave: stakeholders; acreditação de hospital; qualidade médica da saúde; segurança médica; factores de influência

JEL: I11, I18

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摘要

中国政府开展医院等级评审的初衷是为了促进医院绩效，但因为通过三级甲等评审后能带来更多政策支持，致使许多医院为追求通过评审而从核心的医疗工作中分了心，为此中国政府对医院评审进行了“两停两改”。为了解重启后的评审能否回归初衷，本研究从利益相关者理论出发，通过头脑风暴、文献查阅拟定医院评审利益相关者候选人，以米切尔评分法为标准通过德尔菲法进行函询，确定医院等级评审的核心利益相关者为参评医院、评审专家、医院管理者、医护人员、患方。再选择核心利益相关视角，以广东医院等级评审作为案例分析的主要对象，运用定性多方法研究了解医院等级评审对医院绩效的影响。最后针对已有文献中医院评审影响医院绩效机制上存在的理论缺口，对核心利益相关者进行访谈并凝练，形成“统一思想认识、注重行业规范、遵守法规制度、创新性学习、应用性学习、医疗质量与安全”6 个核心范畴，理清核心范畴与医院等级评审、医院绩效的相互关系后，形成本研究的结论——医院等级评审影响医院绩效的机制模型，该模型以外在合法性提升和内在组织学习为中介，将医院绩效（医疗质量与安全）视为结果变量，即医院评审从外部促进医院合法性提升，内部促进组织学习，实现医院绩效提升。

关键词：利益相关者；医院等级评审；医疗质量；医疗安全；影响因素

JEL: I11, I18

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Ackonwledgements

怀揣忐忑，提笔言谢。

“Huai Chuai Tan Te, Ti Bi Yan Xie”

(Appreciation blended with unspeakable excitement)

In Chinese language, the word 忐忑 (Tan Te) is normally to express a feelings of nervousness. However, it is also an expression sometimes used to describe an excitement state of an individual person.

The excitement came from the final completion of my doctoral study and thesis, it can be considered as a personal milestone in my life.

The doctoral study provided me with a wonderful opportunity to get a glimpse of the vast field of management, however it also demonstrated to me that my inefficiency of management should be continue to improve in the future stage of my life.

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Probably I've never been brilliant, however I have never given up to pursue excellent.

致谢

怀揣忐忑，

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中文“忐忑”是会意字，字体构成象征心情七上八下，既欣喜又不安。

激动欣喜的是终于完成了人生中里程碑式的博士阶段学习和论文撰写。

惴惴不安的是博士阶段的学习让我有机会一窥管理学领域的浩瀚，却也让我惭愧因自己学力不足导致管理知识储备仍旧匮乏。

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我从来未曾优秀过，

也从来未曾放弃过！

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Contents

List of Tables

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List of Figures

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Chinese and English Abbreviations Comparison Table

English Abbreviations	English full name	Chinese name
ACHS	Australia Council on Healthcare Standards	卫生服务标准委员会
AHSSQA Scheme	Australian Health Service Safety and Quality Accreditation Scheme	澳大利亚卫生服务安全与质量认证计划
ANAES	Agence Nationale d'Accréditation et d'Evaluation en Santé	国家认证和健康评估局
CHMA	China Hospital Management Association	中华医院管理协会
CGSS	Chinese General Social Survey	中国综合社会调查
CQI	Continuous quality improvement	持续质量改进
DRGs	Diagnosis Related Groups	疾病诊断相关分组
HQS	Health Quality Service	健康质量服务机构
HQMS	Hospital Quality Monitoring System	医院医疗质量检测系统
ISQua	International Society for Quality in HealthCare	国际医疗健康质量会
JCAHO	Joint Commission on Accreditation of Healthcare Organization	美国医院评审联合委员会
JCI	Joint Commission International	国际医疗卫生机构认证联合委员会
KTQ	Kooperation Transparenzund Qualitt im Gesundheitswesen	医院透明管理制度与标准委员会
MRI	Magnetic resonance imaging technology	磁共振影像技术
NIAZ	the Netherlands Institute for Accreditation of Hospitals	荷兰医院评审协会
PDCA	plan-do-check-act	计划--执行--检查--处理
PET	Molecular imaging technology	分子影像技术
PET-MRI	Positron Emission Tomography Magnetic Resonance Imaging system	正电子发射型断层磁共振成像系统
QCC	Quality control circle	品管圈
RCA	Root cause analysis	根本原因分析
TQM	Total quality management	全面质量管理

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Chapter 1: Introduction

1.1 Research background

Since the new round of medical reform in 2009, China's medical and health industry has made great progress. With the constant expansion of the coverage of medical and health services, the continuous growth of the total amount of medical resources, the increase in the number of health technical personnel as well as medical infrastructure, and the significant improvement in medical quality and safety, the deepening of medical reform has shown significant results. According to the latest data, at the end of 2021, there were 11804 public hospitals in China, accounting for 32.23% of the total number of hospitals. The number of health technicians reached 7.1155 million, accounting for 84.90%. The number of beds reached 5.2077 million, accounting for 70.24%. The number of diagnosis and treatment in public hospitals amounted to 3.05 billion, accounting for 85.20%. The number of inpatients was 163.51 million, accounting for 81.69%. Public hospitals play an important role in healthcare services (Lei et al., 2023). However, it is worth noting that while the healthcare industry is flourishing, there are still many problems in the size and structure of China’s healthcare system, which cannot fully meet the needs of the Chinese people in terms of accessibility and fairness of healthcare services (Z. Yang et al., 2017). On the one hand, the total amount of medical resources has not yet matched the population, and the financial investment in medical infrastructure and medical personnel is still insufficient compared to that of developed countries. On the other hand, due to disparities in economic development between different regions, the distribution of high-quality resources is uneven, especially in cities below the county level, where the structure is severely imbalanced. Reducing the waste of medical resources, solving the shortage of medical resources, and effectively improving the utilization efficiency of medical resources have become a major challenge of current medical reform in China.

Since its proposal, hospital grade accreditation has been regarded as an effective means to address the problems that appear in the process of medical system reform. It is an important system for optimizing the allocation of medical resources and also the most authoritative comprehensive strength evaluation and certification standard in China. It is of great significance for promoting the development of China’s medical and health undertakings and ensuring

medical quality and safety (Z. W. Zhou & Huang, 2020). The implementation of hospital accreditation system in China began in the 1970s. The health administrative department accredit and grade hospitals based on their development scale, rules and regulations, management processes, medical quality and safety, service capabilities, and public welfare, and divide them into three grades and ten levels (Zeng & Fan, 2014). In 1989, the former Ministry of Health (MoH) issued the *Notice on Implementing Hospital Grading Management* and the *Standards for Comprehensive Hospital Grading Management (on Trial)*, marking the official launch of hospital grading management and accreditation in China. While promoting the scientific management system of hospitals, there are also many problems, such as the accreditation being merely a formality, participating hospitals being fraudulent, and excessive attention to medical hardware facilities. Subsequently, in 1988, the hospital grade accreditation system was suspended to summarize experience and correct errors. After learning from the experience and lessons of the first round of hospital grade accreditation, the National Health and Family Planning Commission of the People's Republic of China (NHFPC) issued the *Accreditation Standards and Implementation Rules of Tertiary General Hospitals (2011 Edition)* and the *Interim Measures for Hospital Accreditation* in 2011, marking the beginning of a new round of hospital accreditation. Based on the "*Standards* of 2011" and "*Rules* of 2011", and drawing on the experience of hospital accreditation in countries such as the United States and Japan, a scientific and long-term hospital management and operation mechanism was formed, which was patient-centered and ensured medical safety as the primary task, and accreditation standards and rules that are in line with local conditions can be formulated.

The hospital grade accreditation system has a positive impact on hospital performance, and medical quality and safety. Z. Li et al. (2012) argued that tracer methodology could be applied in the hospital grade accreditation system, which could effectively ensure the scientificity and rationality of expert accreditation results. Tao et al. (2013) applied methods such as PDCA and DRGs to hospital grade accreditation. They proposed that in order to continuously improve medical quality and safety, PDCA must be effectively integrated into hospital accreditation. Chang (2015) mainly conducted practical verification on a certain tertiary hospital, confirming that the application of relevant management tools can effectively improve the overall satisfaction of patients, so as to achieve the goal of improving the quality of medical management and continuously optimizing service quality.

As of today, the achievements of the grade accreditation of public hospitals in China have to some extent alleviated the problem of poor accessibility and high cost of medical treatment for patients. However, in the actual accreditation process, some scholars pointed out that the

excessive clauses led to heavy rectification tasks for medical institutions in the short term, and a shortage of time and personnel, posing certain difficulties for the consistency of evaluation standards. More importantly, the hospital requires all medical staff and administrative logistics personnel to participate in the hospital grade accreditation and familiarize themselves with the relevant systems and processes, which not only confuses employees, but even arouses deep disgust among some employees, as they believe that personal interests are higher than the overall social interests. Under this concept, conflicts and contradictions among stakeholders are often difficult to reconcile. It seriously deviates from the original intention of hospital grade accreditation. Hospital grade accreditation is a complex project with numerous participants, a relatively large scale, and a broad scope of involvement. This includes multiple internal stakeholders such as healthcare, nursing, pharmacy, and logistics management, as well as external stakeholders such as administrative management departments, review experts, patients, and enterprises. The more divided the system is, the more dispersed the interests are. Coupled with the transformation of the socio-economic system, the interest game becomes more complex with a longer process. Facing the medical service needs of people at all levels and the policy requirements of the new medical reform, how to build a system of long-term mechanism for continuous improvement of hospital grade accreditation system that develops together with stakeholders and coordinates the interests of all parties is a crucial part of the high-quality development of public hospitals. Research needs to be further optimized based on stakeholder theory. It is necessary to clarify the strategic direction for the development of hospital grade accreditation by analyzing the demands of various stakeholders.

Stakeholders refer to any group or individual who can affect or be affected by the achievement of organizational goals. This concept was first applied in the field of enterprise management and later introduced into the field of health as an important tool and method in health policy research and health sector management. Core stakeholders refer to individuals, groups, or institutions that play a key role in the organization or system and are connected to all parties, while having greater power, legitimacy, and urgency. Interest integration refers to coordinating and easing conflicts among stakeholders, enabling relevant interest groups to form an organization with common values and goals. It emphasizes the formation of common value goals among stakeholders, which is in line with the goal of prioritizing patient safety and social interests in hospital grade accreditation.

1.2 Research questions and objectives

In recent years, with the continuous deepening of the medical and health system reform in China, the medical and health industry has developed rapidly. Large and medium-sized hospitals have emerged, equipment and instruments have been updated and replaced, service capabilities and levels have been continuously improved and the medical and health system reform has been continuously promoted. While hardware facilities continue to improve, ensuring the medical quality and safety has become important responsibility and core work of health administrative departments and medical institutions at all levels. And hospital grade accreditation has become an important tool and means for health administrative departments to improve medical quality and ensure patient safety. The highest level of hospital accreditation, "tertiary hospital", means the best medical care, medical technology, medical services, and medical quality. Besides, in the eyes of many hospital administrators, "tertiary hospital" means higher fees. Hospital Grading Management Measures issued by China's former Ministry of Health (now called National Health and Family Planning Commission) clearly stated that medical fees are linked to the hospital's level. As the level of the hospital increased, the charges for hospital outpatient registration and inpatient bed charges, among other services also increased. For instance, tertiary hospital charges were about 30% higher than those of secondary hospitals. In addition, being tertiary hospitals also meant that they enjoyed favorable policy pronouncements when they declare national key clinical specialty construction projects. And they can also purchase high-end equipment and enjoy extra resources for scientific research projects. Furthermore, tertiary hospitals also enjoy a larger platform, greater reputation, and greater potential to attract more medical talents and more patients. Generally, patients tend to prefer high-level hospitals. As a consequence, the label of "tertiary hospitals" become an important pull factor for patients to choose a hospital. Therefore, the label of "tertiary hospitals" is very attractive (J. S. Wang et al., 2018).

In the practice of hospital grade evaluation, large and medium-sized hospitals in various regions embarked on a race to "compete for the top grade" leading to many of them grabbing large tracts of land for expansion and introducing high-tech equipment (Z. X. Wang et al., 2019). Hospitals that acquired these resources have been rated as tertiary grade A whilst those that do not meet the conditions got pressured to create conditions to squeeze themselves into this high league. This state of affairs not only destroys the entire medical service system but also bleeds it of medical resources especially when the volume of medical treatments cannot support the

normal operation of the expansive hospitals. Although the original intention of the accreditation is to promote hospital development and improve quality of care, in practice, it may also force hospitals and health workers into unrelated work busying themselves with accreditation work. In the long run, the whole system could get burnout from dealing with inspections as well as get easily distracted from their core mandates. The high-level tertiary grade accreditation can promote scientific and standardized development of hospitals on one hand while disrupting their development on the other.

To maintain the original intention of the accreditation of hospitals, the National Health Administration has revised the hospital grade accreditation twice, hoping to gradually establish a long-term mechanism for hospital accreditation by strengthening the macro-management and supervision of the national hospital accreditation and evaluation. By continuously optimizing the evaluation process, standards and rules, hospital accreditation can become an important tool for medical authorities to supervise and urge medical institutions at all levels to continuously improve the quality of their medical care and guarantee patient safety. A scientific and standardized hospital management evaluation system can be ultimately established by continuously optimizing grading process and standards. (J. S. Wang, 2017).

Stakeholders refer to any group or individual who can directly or indirectly affect or be affected by the achievement of organizational goals, and stakeholder theory emphasizes the formation of common value goals among stakeholders. Stakeholders who are affected or affect by hospital grade accreditation are in large numbers, yet, hospital grade accreditation always insists on patient-orientation. Therefore, high-quality medical care and safety service are what hospital grade accreditation aims for. In order to deeply understand whether hospital grade accreditation can really enhance the healthcare quality and safety of hospitals and improve these two performance indicators, this thesis tries to focus on the core stakeholders of hospital grade accreditation, and to understand the effectiveness and mechanisms of hospital grade accreditation on healthcare quality and safety from the perspective of the core stakeholders who have the closest relationship with hospital grade accreditation. Therefore, my research questions are: who are the core stakeholders of hospitals? From their perspectives, what is the impact of hospital grade accreditation on the performance indicators of hospital healthcare quality and safety? What are the specific mechanisms by which hospital grade accreditation affects these two performance indicators?

There are some theoretical gaps in the current literature on the impact of hospital grade accreditation on hospital performance. This study will make full use of the author's work in a healthcare organization to analyze the core stakeholders in hospital grade accreditation by

consulting with industry-related experts. The study will also analyze the case study of tertiary hospitals in G Province to assess how the quality and safety of hospitals have changed after hospital grade accreditation. At the same time, with the author's experience in G Provincial Center of Hospital Management, Evaluation and Quality Control in carrying out hospital grade accreditation of G Provincial tertiary hospitals, the study analyzes how hospitals use hospital grade accreditation as an opportunity to affect the quality and safety of healthcare, and the specific mechanism of hospital grade accreditation that affects hospital performance. The study is of theoretical and practical significance as it can answer questions about the role of hospital grade accreditation and the understanding and utilization its internal mechanism.

1.3 Research significance

Based on the stakeholder theory, this study first determines the core stakeholders of hospital grade accreditation through literature review, brainstorming and the Delphi method, studies the impact of grade accreditation on hospital performance evaluation through the case study of hospital accreditation in G Province, and explores the internal mechanism of how grade accreditation affects medical quality and safety and promotes hospital performance management by using theoretical research methods. The study enriches relevant research on hospital grade accreditation and provides theoretical reference for improving hospital grade accreditation management, which is of great practical significance for the sustainable and healthy development of hospitals.

1.4 Definition of related concepts

1.4.1 Hospital grading management

Hospital hierarchical management system was introduced to improve health standards and help effectively plan and organize medical resources. In 1957, the expert committee of World Health Organization first proposed the concept of hospital hierarchical management, believing that general hospitals should not work in isolation and should become a part of the regional health system to comprehensively improve the level of healthcare. The hospital grading accreditation system originated in the United States and was proposed by the Joint Commission on Accreditation of Healthcare Organization (JCAHO), and then spread to Europe and Asia after 1980. In November 1989, the former Ministry of Health (MoH) of China issued the Notice on

Implementing Hospital Grading Management (No. 25 Document of the Ministry of Health [1989]), which marked the beginning of hospital grading accreditation and grading management. It combined hospital grading management with grade accreditation, and divided hospitals into three grades and ten levels, and a formal and unified hospital grading management system was established. According to the system, hospitals are divided into primary, secondary, or tertiary hospitals. Primary hospitals include grassroots hospitals and health centers that directly provide preventive, medical, healthcare, and rehabilitation services for the community. Secondary hospitals refer to regional hospitals that provide comprehensive medical and health services for multiple communities and undertake certain teaching and research tasks. Tertiary hospitals are those who provide high-level specialized medical and health services for multiple regions and carry out higher education and research tasks. Further, based on the standards of hospital grade accreditation, hospitals at all levels shall be divided into grade A, B or C, and there is a top grade among tertiary hospitals. On the basis of grading, hospitals will be further graded.

As of the end of 2021, the statistical report on the development of China's health industry showed that there were 3,275 tertiary hospitals, 10,848 secondary hospitals, 12,649 primary hospitals, and 9,798 unclassified hospitals, accounting for 26.79% of the total. In September 1994, the State Council issued the Regulation on the Administration of Medical Institutions, which clearly stipulated the implementation of the medical institution accreditation system in China. In 1995, the former MoH issued the Measures for the Accreditation of Medical Institutions, which clarified the basic principles, methods, and procedures for the accreditation of medical institutions. In August 1998, the former MoH issued the Notice on Hospital Accreditation, and suspended the first phase of hospital accreditation. In April 2005, in view of the problems in the first stage of hospital grade accreditation, MoH widely solicited opinions, summarized practical experience, followed up the new international concepts on hospital accreditation, and issued the Guidelines for Hospital Management Evaluation (on Trial). In May 2008, the Guideline for Hospital Management Evaluation (2008 Edition) was released, providing scientific guidance, evaluation, inspection, and supervision for medical institutions from five dimensions, namely hospital management, medical quality management and continuous improvement, hospital safety, hospital services, and hospital performance. In April 2011, the former MoH issued the Accreditation Standards of Tertiary General Hospitals (2011 Edition) (No. 33 Document issued by National Health Commission [2011]). It promoted medical institutions to improve their management models and adhere to the people-oriented and patient-centered principles. Then the second round of hospital grade accreditation was officially

launched. This standard had served the accreditation system of medical institutions in China for nearly a decade. In December 2020, the National Health Commission issued the Accreditation Standards for Tertiary Hospital (2020 Edition). Against the backdrop of promoting the high-quality development of public hospitals, the promulgation of the new Standards marked a milestone for hospitals. It aimed to deepen medical reform, improve modern hospital management systems, enhance the guiding and motivating role of management, and enhance the scientific, normalized, and standardized management of hospitals.

1.4.2 Hospital grade accreditation system

Based on the overall comprehensive strength of various dimensions such as diagnosis and treatment capabilities, size, and service quality, and according to the different functions, tasks, and positioning undertaken by different hospitals within the administrative jurisdiction, hospitals are graded for standardized management. According to China's hospital accreditation system, an accreditation committee composed of experienced and professional auditing experts comprehensively evaluates the hospitals' practice activities and quality of medical services based on the evaluation system and evaluation indicators for medical institutions issued by the government. The system is an important means to measure the overall management level and comprehensive strength of medical institutions in China.

According to the definition of medical institution grading evaluation in the Interim Measures for Hospital Grade Accreditation (L. Y. Li, 2013), hospital accreditation in this study refers to the process of determining hospital grade, conducting self-accreditation of medical quality and safety in accordance with the 2011 version of Hospital Accreditation Standards and Basic Standards for Medical institutions and accepting the evaluation of its performance of functional tasks by the quality control center for hospital management evaluation. The quality control center was commissioned by the Health Commission of G Province to conduct hospital accreditation.

1.4.2.1 Normativity of hospital grade accreditation

First of all, according to the formulated standards, the new round of hospital grade accreditation system is based on relevant national laws, regulations, rules and management measures. The terms of hospital grade accreditation involve many laws, regulations, and rules such as "Law of the People's Republic of China on Medical Practitioners" on licensed physicians, which makes the hospital grade accreditation have laws to follow. Secondly, the hospital grade accreditation system emphasizes the importance of the supervision and management function

of the superior health administrative department in all aspects of the accreditation, which is conducive to ensuring the fairness of the hospital grade accreditation. Finally, China's national health administrative department uses information technology to monitor the daily medical activity management behavior of hospitals, more objectively, fairly, and normatively reflecting the actual working conditions of each hospital. In the grading of medical institutions, some scores are based on the data from the HQMS medical quality testing system of reference medical institutions. This also indicates that compared with the past, the new round of grading of medical institutions in China is more standardized.

1.4.2.2 The scientificity of hospital accreditation management

In terms of the use of management theory tools, the new round of hospital grade evaluation has gradually realized the integration with international hospital evaluation, and continuously explored scientific and standardized evaluation tools for medical quality and safety management. Tracking methodology, PDCA (plan-do-check-act, Deming's circle) management, DRGs (diagnosis related groups), and many other methods are used to track the quality of medical services in real time through the combination of case tracking and system tracking. DRGs are used to compare the advantages and disadvantages in order to achieve comprehensive performance management of the participating hospital. The exploration of the use of theoretical tools in hospital grade evaluation management is conducive to promoting the continuous improvement of hospital quality and safety, and improving the scientific level of hospital grade evaluation management.

1.4.2.3 The public welfare nature of hospital accreditation management

In the new round of hospital grade accreditation system in China, the public welfare nature of public hospitals has been put in the first place in the evaluation. The evaluation criteria always reflect the concept of "patient-centered" and the core quality and safety values of "people-oriented". In the hospital grade accreditation standard, the patients who visited the hospital indirectly became the main body of some evaluation terms. The effectiveness of the hospital grade accreditation management was investigated and evaluated through the interview and investigation of patients' feelings and satisfaction. The new round of hospital grade accreditation standard covers ten goals related to patient safety, with the patient's treatment experience and safety in the hospital at the key goal of hospital quality management, and converts the focus of the old medical service evaluation management from the original "professional evaluation" to "patient-centered evaluation". At the same time, the ten goals specifically emphasize the public welfare nature in the hospital grade accreditation management,

which puts the patient-first experience and safety into the quality management of hospitals, and ensures the safety of patients and medical services.

1.4.3 Medical quality and safety

1.4.3.1 Definition of medical quality and safety

Hospital medical quality management refers to the whole management process of medical institutions' planning, decision-making, implementation, control, coordination, guidance and relevant information feedback and processing of all influencing factors with the goal of improving medical quality and the quality of medical services (Y. L. Wu & Li, 2018).

Hospital safety management refers to the effective and scientific management of the hospital with the help of relevant norms and systems to ensure that the medical staff of the hospital will not be affected and injured by internal adverse factors in the process of providing medical services for patients and receiving relevant services for patients and their families (Cheng & Shi, 2005).

1.4.3.2 Medical quality and safety indicators

Average length of stay of discharged patients refers to the average length of stay of each discharged patient in a certain period. It is calculated by dividing the total number of bed days of discharged patients in a certain period by the number of discharged patients (R. H. Feng & Wang, 2012).

Incidence of pressure ulcer in discharged patients refers to the proportion of the number of pressure ulcer cases in hospitalized patients in a certain period to the number of hospitalized patients in the same period. It is calculated by dividing the number of patients with new pressure ulcer since admission by the total number of hospitalized patients.

Complication rate of discharged patients after elective surgery refers to the proportion of the number of complications of hospitalized patients after elective surgery in the hospital in a certain period to the number of hospitalized patients in the same period. It can be calculated by dividing the number of hospitalized patients with complications after elective surgery by the total number of hospitalized patients.

Incidence rate and injury grade of patients falling and falling off the bed refers to the proportion of the number of inpatients falling or falling off the bed in a certain period, and the injury grade is evaluated according to the injury degree of patients after falling or falling off the bed. Level 1: the degree of injury that requires no or only a little treatment and observation. Level 2: the degree of injury requiring medical treatment, nursing treatment or condition

observation such as ice compress, bandage, suture, or splint fixation. Level 3: the degree of injury requiring medical treatment and consultation.

Unexpected return rate in 48 hours in ICU refers to the proportion of patients who are readmitted to ICU unexpectedly within 48 hours after being transferred out of ICU in a certain period. It is calculated by dividing the number of unexpected returns within 48 hours of being transferred out of the ICU ward by the total number of ICU admissions (Fadi El-Jardali et al., 2008).

Outpatient antibacterial drug prescription rate refers to the proportion of antibacterial drug prescriptions per 100 outpatient drug prescriptions in a certain period. It is calculated by dividing the number of outpatient antibacterial drug prescriptions by antibacterial drug prescriptions per 100 outpatient drug prescriptions.

Outpatient prescription rate of injectable drugs refers to the proportion of the number of outpatient prescriptions of injectable drugs per 100 outpatient prescriptions within a certain period. The calculation formula is dividing the number of injection prescriptions by every 100 outpatient prescriptions.

Incidence of ventilator-associated pneumonia refers to the proportion of ventilator-associated pneumonia in all patients using ventilator in a certain period. It is calculated by dividing the number of ventilator-associated pneumonia cases by the total number of hospitalizations using ventilator.

Incidence of urinary tract infection related to indwelling catheter refers to the proportion of patients with urinary system infections related to the use of indwelling catheters in all patients with indwelling catheters in a certain period. The calculation formula is dividing the number of indwelling catheter-related urinary system infections by the total number of hospitalized patients with indwelling catheters.

1.5 Research methods and technical roadmap

1.5.1 Hospital grading management

This study follows the research paradigm of process research. Due to the significant differences in philosophical cognition between process research and traditional variance research in the field of management, in order to avoid paradigm controversies, this study first explains the legitimacy of process research from the ontological and epistemological perspectives of process philosophy.

(1) The meaning of process research

The term "process" refers to the sequence and evolution of events within an organizational entity over time, which may contain change and development (A. H. VandeVen & Poole, 1995). Process research is concerned with how things evolve over time and why they evolve in this way (A. H. VandeVen & Huber, 1990).

(2) The philosophical basis of process research

The two basic paradigms of social science research are process research and variance research, both of which can be traced back to ancient Greek philosophy (Rescher, 1996; A. H. VandeVen, 2005). From an ontological perspective, the ancient Greek philosopher Democritus proposed materialism, believing that reality is composed of material substance, and that "change" refers to the change in their positioning in time and space (Rescher, 1996). Contrary to this, Heraclitus proposed process theory, believing that reality is composed of processes constructed by constantly changing behaviors (Hershbell, 1977). A group of outstanding modern philosophers, including Peirce, William James, Henry Bergson, John Dewey, and Whitehead, inherited and developed the ideas of process theory.

The ontological debate prompted the management academic community to consider whether the object of management is "material" or "process" (Tsoukas & Knudsen, 2005). As a result, a large number of management studies based on process theory ontology have emerged (Tsoukas & Chia, 2002). From an epistemological perspective, the ontological management studies that based on materialism adopt variance theory to explain management phenomena (Mohr & Hardy,1982). While the ontological management studies that based on process theory adopt process theory to explain management phenomena (Abbott, 1988; Pentland, 1999; Poole, 2000). This study analyzed and compared the characteristics of variance theory and process theory. Overall, variance theory suggests that phenomena can be explained by studying the correlation between independent and dependent variables, while process theory suggests that studying how a series of events unfold is more helpful in explaining phenomena (A. H. VandeVen, 2005).

(3) Process research is suitable for studying dynamic, nonlinear, and complex questions

In recent years, process research has received increasing attention in the field of management. J. M. Huang & Wang. (2011) analyzed the best theses from 1990 to 2009 in the Academy of Management Journal (AMJ) and the best theses from 1999 to 2010 in the Administrative Science Quarterly (ASQ). It was found that the top three theses in terms of influence (calculated based on citation rate) were all process research.

One important reason for the rise of process research is that scholars have recognized the complexity of management phenomena. As Sutherland (1973) said, "if we spend enough time studying the real world, we will find that not all phenomena are deterministic". Some phenomena span multiple levels and elements simultaneously, with blurred boundaries and high complexity and dynamism, making it difficult to analyze these phenomena using traditional quantitative analysis methods (Chiles, 2003; Langley, 1999). Due to the fact that process research paradigms often involve multiple levels and elements, and the qualitative research methods used are also beneficial for tracking time series data, making them the preferred choice for studying complex and dynamic questions (Chiles, 2003). In summary, process research is highly suitable when dealing with complex research problems involving nonlinear changes (Lachmann, 1976).

(4) Summary: Process research paradigm aligns well with the research objectives of this study

In summary, on the one hand, process research is a research paradigm developed based on the ontology and epistemology of process theory, which is gradually becoming one of the mainstream paradigms in academia. It is suitable for studying cross-level, complex, and dynamic research questions. On the other hand, this study aims to explore the labor relationship management behavior of various entities within the enterprise and the process of managing labor-capital conflicts. The management of labor-capital conflicts involves multiple parties and has a cross-level characteristic (involving individual employees, departments including party organizations and trade unions, as well as local governments). Moreover, the process of managing labor-capital conflicts is characterized by complexity and dynamism. Therefore, the process research paradigm is very suitable for this study.

1.5.2 Research methods

(1) Literature review. This method is used for selecting stakeholders. By using PubMed, Medline, CNKI, Wanfang Data and other databases, literature on hospital grade accreditation at home and abroad was reviewed, and possible stakeholders of hospital grade accreditation were predicted through literature review, laying a theoretical foundation for improving the hospital grade accreditation system. (2) Brainstorming. On the basis of literature review, senior staff of G Provincial Center for Hospital Management, Accreditation and Quality Control, who are familiar with hospital grade accreditation in China, were invited to a round table meeting to identify the list of possible stakeholders candidates of hospital grade accreditation. The draft of the expert consultation and evaluation form was obtained based on the existing indicator system

and related policy documents. (3) The Delphi Method. According to the results of literature review and brainstorming, cadres at or above the deputy department level of government health administrative organs at prefecture-level cities and above, heads of the administrative departments of tertiary grade-A medical institutions and medical clinical experts with senior professional titles were selected to participate in the second round of consultation. They evaluated and scored the stakeholders of hospital grade accreditation according to the expert consultation and evaluation form (see Annex A and B). (4) The Mitchell Method. This is the main method applied to stakeholder quantification and practical application of theory. The key stakeholders of hospital grade accreditation are defined by scoring the three attributes of legitimacy, urgency and entitlement (Mitchell & Wood, 1997). (5) Case study. Taking the innovative system, process and development status of the new grade accreditation model of tertiary hospitals in G Province as a case, this thesis summarizes the current grade accreditation work of tertiary medical institutions in G Provincial Center for Quality Control from multiple perspectives by means of field investigation and unstructured interview. From the perspective of core stakeholders, this thesis analyzes the impact of hospital grade accreditation on hospital performance.

1.5.3 Technology roadmap

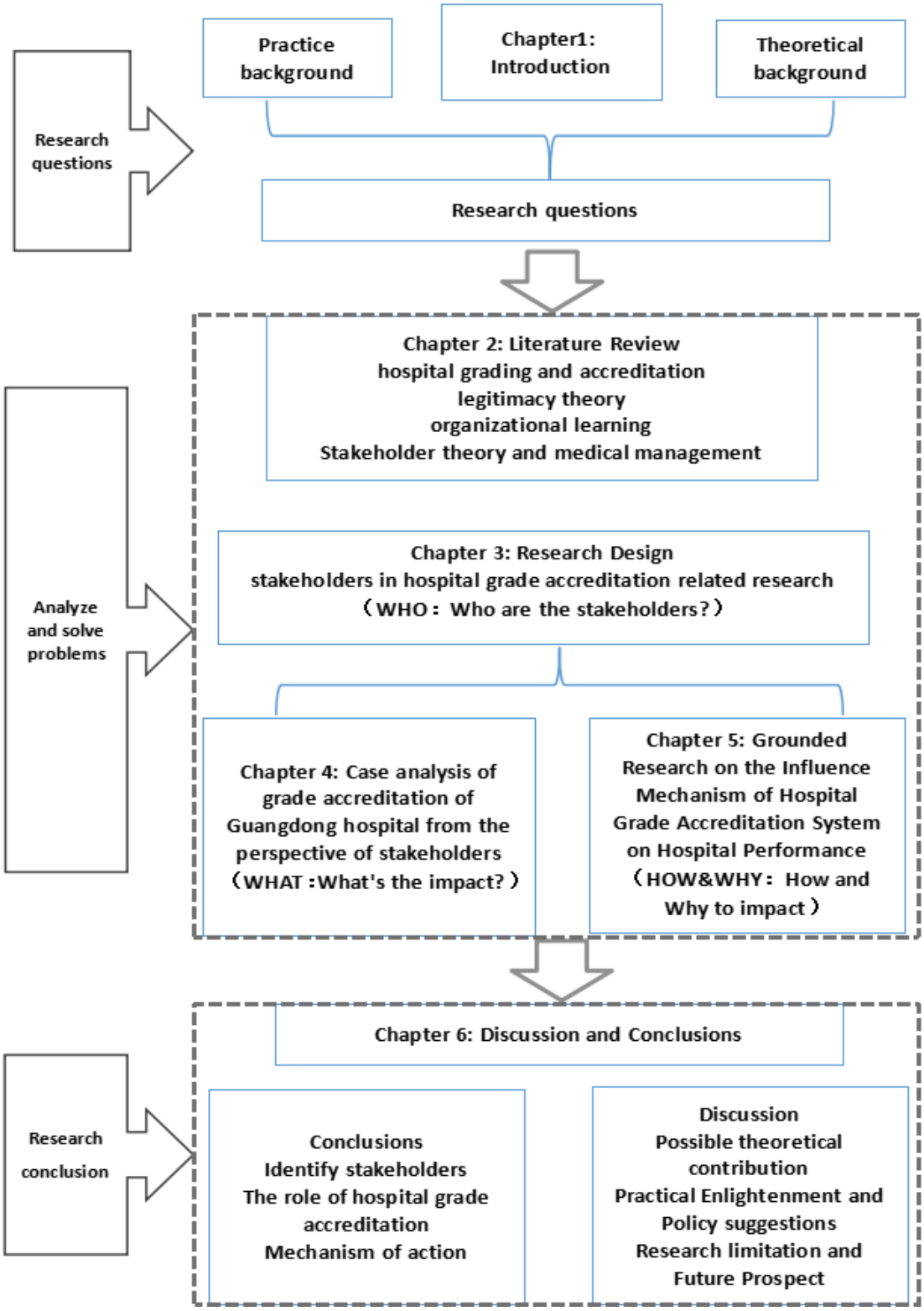

Figure 1.1 The technical roadmap of this study

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Chapter 2: Literature Review

2.1 Literature review of hospital grade accreditation

2.1.1 Theoretical basis of hospital performance evaluation

The concept of "performance evaluation" was first put forward by Daniels (1992) in the United States, which mainly refers to salary and bonus, a management mode of operational figures, and has been widely used in various enterprises, organizations and institutions with different meanings. Since the 1990s, China has introduced the concept of performance management. After more than 30 years of development, performance management evaluation system is not only based on financial resources, but also includes hospital medical quality and safety, service efficiency and benefits, patient satisfaction, operational efficiency and other indicators. It has become a comprehensive evaluation system. The system includes many evaluation indicators for each department and each employee, and uses the performance evaluation results to improve daily management of public hospitals. In this way, employees' motivation to work will be stimulated, and medical quality and safety, as well as the operation efficiency of the hospital, will be improved.

With the continuous advancement of China' health system reform, hospital performance evaluation has become an important link of hospital management, and its ultimate goal is to enhance the social benefits obtained by hospital operation. How to evaluate the overall performance of a hospital objectively? Researchers have been committed to evaluating the structure, process and outcomes of hospital performance by using appropriate evaluation indicators based on the actual situation of a hospital and through the Donabedian Evaluation Theory. Many countries mainly focus on the evaluation of medical quality and safety (Ying, 2015). The fatality rate of each hospital, intermediate outcome indicators and process indicators are used to evaluate hospital performance. The state of Maryland in the United States developed hospital performance evaluation indicators to evaluate state hospitals based on medical treatment volume, average length of stay, readmission rate and other medical operation and quality data. Many scholars in China have also conducted performance management evaluation of public hospitals in terms of medical quality and safety. L. F. Wu (2018) proposed that the performance management evaluation of public hospitals is an important task in the new round

of China's health system reform, and put forward suggestions for the subsequent hospital performance reform based on hospital practices and objective data of medical quality and operational efficiency. Y. C. Chen and Jiang (2019) collected medical quality and safety data of public hospitals in 31 provinces of China and measured the performance management effectiveness of public hospitals. Ge (2020) believed that medical quality and safety of public hospitals is the only way to improve the overall hospital management, which can directly affect the development of public hospitals, and has important constraint and guiding significance for meeting the service quality requirements and promoting the national health management.

2.1.2 Hospital grade accreditation in China

China's hospital accreditation plays an important role in strengthening the supervision and management of medical services, improving healthcare quality, and ensuring patient safety. Hospital accreditation has become a powerful means for health administrators to implement effective hospital supervision (D. R. Zhao et al., 2018). China's hospital accreditation works first began in the 1980s when the then Ministry of Health summed up the experience of constructing a three-tier medical services network. At the time, the country's efforts geared towards creating a "civilized hospital" system drawing upon the international hospital evaluation and assessments experience and practices. The hospital accreditation work was actively explored and culminated in a successful launch of China's Hospital grading management and hospital accreditation system. Chronologically, China's hospital-grade accreditation is divided into three phases described below. Each phase has been conducted with caution and carefulness, however with the lack of experience and China's special characteristics, certain issues and difficulties appeared alone the path of finding the correct pathway for hospital accreditation and evaluation.

2.1.2.1 China's first round of hospital accreditation phase (1989-1998)

At the end of the 1970s, China's hospital evaluation system emerged. Initially, Dandong Hospital pioneered the "civilized hospital" activities whereby they explored the standardized management of hospitals that played a positive role in promoting hospital management systems in the very beginning era in China. It happened to be very appealing to many other Chinese hospitals to visit and understudy the on-site experience in Dandong. These activities then drew the attention of the national health administration (D. Z. Chen & Sha, 1999). Subsequently, in 1987 the National Health Administration launched a nationwide "civilized hospital" (direct translation from the Chinese language which means friendly, hospitable, and ethical hospital)

competition. In the same year, a national seminar on the establishment of "civilized hospitals" (highly ethical hospital) was held to summarize the ongoing experience of hospital management and to promote the four principles of "civilized hospitals" namely: science-driven management, standardization of performance indicators, regularization of activities and standardization of management systems. These principles formed the blueprint of hospital accreditation in China (Y. S. Li, 2006). However, the "civilized hospitals" campaign was marred and temporarily terminated by the lack of unified evaluation standards and evaluation methods whilst the audits were often momentary spot checks, which were lacking long-term accreditation and evaluation mechanisms to refer from. Therefore, this type of accreditation and evaluation could not fundamentally or permanently solve the problem of scientific inadequacy and bring about standardized hospital management framework in China's medical and healthcare system. As a result, in the mid-1980s, health authorities in China gradually conceived the idea of implementing an accreditation system that allowed uniform management and audit of hospitals across the country. It was a bold and innovative concept brought out by the CPC Central Committee and the Ministry of Health; this revolutionary idea can be considered as a solid milestone in China. In 1989, at the National Conference on Medical Administration, the basic standards for hospital accreditation were first considered and adopted. In November of the same year, the then Ministry of Health issued the "Notice on the Implementation of Hospital Grading Management" (89 No. 258) and the "General Hospital Grading Management Standards (Trial Draft)". This marked as the beginning of the first step towards China's standardized hospital grading and hospital accreditation work. After the beginning of hospital grading and evaluation, the then Ministry of Health gradually published the Basic Standards for Medical Institutions, the Standards for Medical Institutions Accreditation, the Detailed Measures for the Accreditation of Medical Institutions, and the Detailed Rules for the Implementation of the Accreditation Standards, the Constitution of the Accreditation Committee of Medical Institutions, and other regulatory documents. In February 1994, the State Council issued the "Regulations on the Administration of Medical Institutions", Article 41 of which stipulates that the State shall implement the accreditation system for medical institutions and an appraisal committee composed of experts shall, according to the appraisal measures and accreditation standards for medical institutions, comprehensively evaluate the practices/activities of medical institutions and the quality of medical services. Since then, China's hospital accreditation as a system of effective state supervision of hospitals has been incorporated into the national legal framework. The China's hospital accreditation was officially entered a development pathway which is significant in China's healthcare and medical history(Y. Wang, 1994).

China's hospital grading and accreditation system are based on the hospital's functional tasks, infrastructure, technical level, medical care quality, and scientific standing (L. Xu, 2021). The hospitals are graded according to the different functional tasks into primary (tier 1), secondary (tier 2), and tertiary levels (tier 3). Furthermore, at each level (tier), the hospitals are then sub-graded as A, B, C based on hospital service, size, management, quality, safety, facility, and medical technology available. Also, above the tertiary hospitals (tier 3) are "top of tertiary" hospitals considered as super specialist hospitals. Therefore, hospitals are divided into three levels comprising ten grades. At the same time, it was proposed for the first time that medical charges shall vary according to the level so as to differentiate hospitals.

Starting from 1990-1991, provinces and municipalities across China began preparations for their hospital accreditations, formulated their own hospital accreditation implementation rules, formed provincial hospital accreditation committees, and set up specific accreditation working groups (Du, 2013). The provincial healthcare department firstly determined the level of each hospital (primary, secondary, and tertiary) according to the hospital's functional tasks and the grading standards issued by the then Ministry of Health. This was followed by the adoption of a point system of evaluation with a maximum score of 1000 points. This was used to assess the hospital's level on the national grading scheme. Grade A is allocated for a score greater than 900, Grade B is between 750-899, while Grade C hospitals scored between 600 and 749. A score less than 600 was considered unqualified for grading. After five years of hospital accreditations, the provinces completed the first cycle of hospital accreditation in 1996-1997. The first cycle of hospital accreditation in China was conducted in the decade spanning from 1989 to 1998, with a total of 17,708 hospitals (558 tertiary hospitals, 3,100 secondary hospitals, and 14,050 primary hospitals) being accredited, accounting for 26.4% of the total number of hospitals in China at that time (S. T. Zhao et al., 2012).

In 1996, the former Ministry of Health issued document No. 42 *"Notice on Further Improving Hospital Grading Management and Hospital Accreditation Work"* nationwide to enhance the development of the accreditation progress. Due to the lack of practical experience in hospital accreditation at that time, the accreditation standards were somewhat decoupled from the realities on the ground, and the actual accreditation process produced some deviations from the intended goals. Challenges and barriers gradually appeared to the surface which is other than the lack of experience, the overall social atmosphere, institutional structure, and political environment. In August 1998, the Ministry of Health issued the *Notice on Hospital Accreditation Work*, suspended the first round of nationwide hospital accreditation and requesting that the Ministry officials concerned "seriously summarize its experience, affirm its

achievements, and effectively correct its mistakes practically and realistically". China's hospital accreditation activities then entered a new stage of discovery and exploration.

Although the first round of hospital accreditation conducted in China was done at the novice and inexperience stage and ran into various unexpected problems, the decade long evaluation gained a special attention by the state and the general public. In 2001, the then Ministry of Health commissioned the China Hospital Management Association to conduct a study on the accreditation of medical institutions in China. The China Hospital Management Association designed, sent out, and collected data by utilizing methods such as questionnaires and subsequently analyzing the data. In China, the proportion of medical personnel and managers who thought that the accreditation work had achieved its purpose was 71.7% while the proportion of those who thought it had partially achieved its purpose was 23.6%. Furthermore, 2.5% thought it had barely achieved its purpose, and the proportion of those who thought that the trial out did not achieve its purpose was 1.6%. Overall speaking, all categories of personnel participated in the research agreed that the hospital accreditation process had a positive effect on hospital management, and more than 70% of them thought it had a huge influence on hospital work and looking forward for further development and reform within the healthcare and medical industry (Q. He et al., 2012).

The above study shows that the first round of hospital accreditation achieved remarkable outcomes. There were lot of doubts coming from the international community on China’s accreditation development due to the limited channel and linguistic barriers for information sharing. However, without a doubt that the first phase of development played a very crucial role in strengthening the standardized management of China's hospitals in the following four aspects: (1) Showing a national trend of unified standardized management during the era of China's uncoordinated hospital management thereby promoting the modernization process of its hospital management systems. (2) It helped to rationalize the allocation and utilization of China's medical and health resources as well as arousing the attention of all sectors of society from top to bottom towards hospital development and management. (3) Increased the local government’s enthusiasm for hospital construction and provision of requisite equipment. (4) Strengthened the training of medical and technical personnel, improving their basic skills so that the quality of medical care and the technical level becomes greatly improved. However, it is undeniable that the first cycle of hospital accreditation was fraught with many problems. The following problems were common to all provincial and city hospitals across the country: (1) the spot test-style system of accreditation resulted in the falsification of scores and pretentiousness; (2) the once-off nature of accreditation caused the phenomenon of formalism

and was costly; (3) the lack of a long-term mechanism for hospital accreditation often resulting in a decline in the quality of hospital care after accreditation; (4) the hospitals' competition for investment in infrastructure leading to a waste of resources.

These problems were mainly due to several reasons: (1) the standards and methods of accreditation were not scientific. In the first cycle, the accreditation method adopted a scoring system that was relatively specific to the isolated hospital units, and the audit of the overall system was lacking. Some of the accreditation criteria were cumbersome and difficult to operationalize. This resulted in the emergence of a formalistic culture and biased accreditation results. (2) Since the first cycle of accreditation was still in the exploratory stage, the lack of clear hospital accreditation guidelines and philosophy led to the wrong direction of development. This resulted in a few hospitals misunderstanding the purpose of accreditation and thus blindly strengthening the acquisition of hospital hardware and medical equipment such as pursuing visual displays, increasing the number of hospital beds, expanding operation theaters, and purchasing highly sophisticated equipment. These investments did not produce significant or positive effects in a short period, it was not a sustainable direction for development and significantly deviated from the original intention from the State government. The terminology of the hospital accreditation standards was also the main reason behind the blind and exaggerated acquisition of hospital infrastructure.

The accreditation organization of each evaluated hospital was not clearly pointed, and not connected to others or the national action plan. Most accreditation committees were temporarily appointed and there was a general failure to establish long-term hospital accreditation mechanisms with a sustainable roadmap. Accreditation was often a short-term activity involving auditors temporarily deployed and arranged by the health authorities. This hindered the establishment of a sustainable, long-term monitoring and evaluation mechanism. After making every effort to be accredited and achieve a high grade, some hospitals slacked resulting in a serious slide in the quality of medical services. Misconducted behavior appeared during some of the accreditation sessions and the results of the accreditation was not considered as valid.

2.1.2.2 The exploratory phase following the suspension of hospital accreditation (1998-2011)

The "Notice on Hospital Accreditation" issued by the former Ministry of Health in 1998 denoted the decision to suspend the first cycle of hospital accreditation in China. With the exception of a few regions where hospital assessments continued, the bulk of the nationwide

hospital assessment and accreditation was temporarily suspended. This marked a phase of exploration of hospital accreditation in China. To better summarize the experience drawn from the first cycle of hospital accreditation while at the same time learning from the international and global medical community, and plan for the next step of medical institution accreditations, in 2001, the Ministry of Health commissioned the China Hospital Management Association to launch a series of studies on the subject of medical institution accreditation. The China Hospital Management Association conducted a large-scale survey that included consulting a large body of literature to learn from the international hospital accreditation experience, especially the "Hospital Accreditation Standards" (2nd edition) prepared by JCI in the United States. Following the learning experience, in 2005, the Ministry of Health then organized a nationwide "Year of Hospital Management" activity premised on "patient-centeredness and improving the quality of medical services". The next five years were spent on such activities as strengthening hospital management systems and improving the quality of medical care. Improving medical services plays an important role in controlling medical costs. Taking advantage of the "Year of Hospital Management", the Chinese government also issued the *"Hospital Management Evaluation Guide (for trial implementation)"* to help strengthen the hospitals' internal audits to ensure quality medical care and patients' safety. The evaluation guide also helped health administration departments strengthen their evaluation and supervision of hospitals. This hospital evaluation was similar to the first cycle of hospital accreditation. The "Hospital Management Year" evaluation system still followed the format of qualitative evaluation, supplemented by quantitative evaluation. All aspects of hospital management, continuous improvement of medical care quality, medical safety, service, and performance were evaluated. This indicator system pays acute attention to the quality and safety of medical services as well as effectively embodies the concept of "patient-centered and continuous improvement of service quality". However, the evaluation method still adopted the 1000-point system, and the total cumulative score was used to judge the merits of the hospital within a single comprehensive evaluation. Compared with the previous hospital accreditation standards, during this exploratory phase, the hospital management department cooperated with the American Joint Commission on Health Care Organization to develop the *Hospital Management Evaluation Guide (Trial)* (H. Wang et al., 2006). The cooperation was very beneficial, and the local auditors learned from the advanced international hospital accreditation practices. The practical insight and experience were essential to the improvement and optimization of the Chinese medical reform framework, and the time and efforts during the discussion between Chinese experts and foreign experts were great significance in that period (H. Wang et al., 2006).

Implementing a new medical reform plan during the rapid development period in China's medical and health industry saw new hospital management problems emerging. Since 2009, the development of the medical industry has been facing serious challenges such as how to regulate medical behavior and promote the healthy development of hospitals under the new trend. The supervision of medical services needed to assume an increasingly important role. International experience and practice dictated that China should establish an effective system of accrediting hospitals that is scientific and standardized, which is can be seen as a milestone step took by the Chinese government and the determination shown to match the international standards.

2.1.2.3 China's second round of hospital accreditation phase (2011-present)

With the continuous promotion of public hospital reform, the General Office of the State Council issued the 2011 new public hospital reform pilot tasks which sought to "promote hospital management evaluation and accreditation" and that "a grade-A hospital must be established in each county with a population of more than 300,000 people by the end of 2011" (Z. Fu, 2011).

In April 2011, the former Ministry of Health issued the "Accreditation Standards for Tertiary General Hospitals (2011 Version)" nationwide, followed by the "Interim Measures for Hospital Accreditation" in September of the same year, marking the restart of a new hospital accreditation era in China. The Shandong Provincial Department of Health coordinated the experts that audited the Second Hospital of Shandong University using the new accreditation standards and methods. The Second Hospital of Shandong University was rated as a Grade IIIA hospital, becoming the first such hospital to be evaluated in full accordance with the new accreditation standards promulgated by the Ministry of Health. The on-site evaluation included the PDCA cycle and tracking methodology. There are four features of the new hospital accreditation system: firstly, the completion of medical reform tasks is considered an important indicator. Medical care quality and medical service performance are the key focus of the accreditation. Secondly, the design of accreditation items is in line with internationally accepted patient safety and quality assurance standards. Thirdly, the evaluation adopts the PDCA principle of continuous quality improvement to judge the implementation of standards, emphasizing process quality assurance, effective coordination between operational links, effective operation of management systems, and effective operation of the hospital systems and procedures. The fourth is the adoption of the continuous tracking and monitoring method, which is suitable for long-term, effective monitoring of process quality assurance, and emphasizes the overall and comprehensive evaluation of the medical service management problems (T. F. Liu,

2011). Compared with the first cycle of hospital accreditation, the present round of hospital accreditation is characterized by the following key innovations (L. Y. Li, 2013):

First, the macroeconomic environment witnessed tremendous changes, which includes the following points. The first cycle of accreditation was mainly constrained by the historical conditions which were characterized by insufficient resources and so largely focused on infrastructure development; the second cycle of accreditation emphasizes the adaptation of hospital size and discipline functions in place. The launch of the current cycle of hospital accreditation was geared to deepen health care reform. The accreditation system guides hospital development and construction. It also guides hospitals, at all levels, to fully implement health care reforms and to accomplish public service functions.

Second, the current phase uses a different approach to accreditation. The Interim Measures for Hospital Accreditation stipulates that the new round of hospital accreditation differs from the previous voluntary declaration in that it is mandatory. In addition, the current cycle of hospital accreditation draws from the advanced methods used by the international hospital accreditation agencies. It also adopts the JCI accreditation concepts and uses the on-site tracking evaluation method. Before undergoing on-site evaluation, the hospitals are supposed to carry out no less than six months of self-assessments and continuous improvement work. The on-site evaluations include four dimensions: a written evaluation, information evaluation, on-site evaluation, and social evaluation. The target score during the evaluation should not be less than 30% of the total score. In addition, there was a change to the traditional scoring system (or deduction system) system. The present scoring system follows the PDCA cycle principle using A, B, C, D, and E grades representing excellent, good, qualified, unqualified, and not applicable (Tao et al., 2013). Grade A represents an excellent state whereby the requirements of the quality management system are being met, there is continuous improvement, and can do PDCA. Grade B represents good, which means there is a system in place and supervision for the quality management system, and the management has results, and it can achieve PDC. Grade C denotes qualified, which means there is a system and effective implementation for the quality system, and it can do PD; Grade D means unqualified, which means there is only regulation for the quality system, but it is not implemented, and it only does P or nothing; E means the quality system does not apply to the hospital. The fundamental requirements of the quality system must be fully met before they can be subject to evaluation/accreditation.

Third, the accreditation standards are different. As a landmark document for hospital accreditation, the *Hospital Accreditation Standards* is developed and implemented closely related to the level and capacity of hospital management, and health administration's needs and

expectations of hospital management at that time. The current cycle of hospital accreditation standards and rules, developed by the former Ministry of Health through document review reflects more emphasis on "people-oriented, patient-centered concept", attention to hospital "resources - quality - cost - efficiency-benefit" and their integrated management capabilities and levels, attention to continuous improvement of scientific management methods, attention to the mobilization of hospital management self-regulatory initiatives, and more attention to the responsibilities and obligations of public hospitals.

At the same time, it is stressed that the provincial health administrative departments, cognizant of the local realities and characteristics, must follow the principle of "standards upward only, not downward; content upward only and not downward", make appropriate adjustments, and report to the Ministry of Health for the record, reflecting the uniqueness and authoritativeness of the accreditation standards. The Chinese General Social Survey (CGSS) aims to collect dynamic information about Chinese residents' life quality. It first included a single question about public satisfaction with the healthcare system in 2013, and included a set of detailed questions about public satisfaction regarding various aspects of public healthcare provision. The timing of these two surveys matched well with the agenda of the second phase of the 2009 Healthcare Reform, and thus has provided good opportunities to study how public satisfaction has changed after the implementation of the reform.

2.1.3 Evolution of hospital grade accreditation systems beyond China

The hospital accreditation system is a popular international evaluation approach featuring non-governmental organizations and peer reviews. The predecessor to the Joint Commission on Accreditation of Health Care Organizations (JCAHO) was established by the American College of Physicians, the American Hospital Association, the American Medical Association, and the Canadian Medical Association with other groups in the early 1950s and renamed in 1987 (Sehgal, 2010). The Australian Council on Healthcare Standards (ACHS) was established in Australia in 1974 and began to implement hospital accreditation in the same year (Springer et al., 2018). After 1980, the hospital accreditation systems gradually spread to Asia and Europe. The purpose of hospital accreditation in various countries is basically to improve the quality and safety of medical services in hospitals so that residents can better enjoy them. However, the approaches adopted by different countries vary slightly.

2.1.3.1 The United States

The current Joint Commission International (JCI) standard in the United States aims to inspire medical staff to improve the work efficiency and thus provide patients with high-quality medical service by conducting comprehensive hospital accreditations. At the same time, both the supply and demand sides in the accreditation systems should be in good cooperation, which can be traced throughout the whole treatment process. The ultimate goal is to achieve safe, effective, and quality care for all patients who seek care. The clinicians, nurses, public policy experts, and hospital administrators participate in the specific implementation processes and the appraisal of accreditation standards. The JCAHO provides that health insurers and the general public are involved in the accreditation activities, with the general public accounting for approximately 20% (Cowin et al., 2008). The government, health insurance agencies, and hospital accreditation agencies cooperate to link the accreditation results to the government's financial compensation and health insurance schemes to make hospitals that do not pass the accreditation be ineligible for some insurance policies or receive government subsidies. Therefore, the hospital accreditation results are highly related to the qualification of government compensation and health insurance. This loop makes the accreditation more mandatory and authoritative so that hospitals can actively participate (Jing et al., 2012).

2.1.3.2 France

The purpose of hospital accreditation in France is to improve the overall standard of hospitals and to ensure that patients receive safe, high-quality care through a mandatory accreditation process that includes self-evaluation, on-site evaluation, and an accreditation report (Shaw et al., 2010). ANAES (Agence Nationale d' Accreditation et d' Evaluation en Santé), a third-party organization established by the government, conducts mandatory audits and accreditation of all hospitals following a five-year cycle. The accreditation experts report the hospitals that do not meet the accreditation criteria to ANAES and the respective regional administrations. The accreditation assessment results are published on the website accessible to the general public, and the regional administrations can adjust their investment in the evaluated hospitals according to the accreditation results (Y. Q. He et al., 2007).

2.1.3.3 The Netherlands

Hospital accreditation in the Netherlands aims to improve the quality of health care services and to promote quality assurance. The NIAZ (the Netherlands Institute for Accreditation of Hospitals) evaluates all departments and functions of hospitals based on 35 criteria and a

holistic evaluation system. The Netherlands Institute for Accreditation of Hospitals has the following characteristics: NIAZ is independent of the government and is directly responsible for the quality of medical care, the patients and insurance companies through the accreditation of hospitals; The hospitals voluntarily apply for accreditation, although public opinion motivates all hospitals to actively participate in accreditation. The auditors who conduct accreditation are all drawn from the health system, some directly from the level of director or head of the quality control departments. Member hospitals have the right to work together to improve the NIAZ accreditation standards. All NIAZ standards are subject to and must meet the PDCA (plan-do-check-act) cycle. The comprehensive audit of all hospital departments and functions shall be in the form of continuous evaluation and peer review; and shall use the holistic standard quality system to seek improvement of the hospitals' healthcare services and quality assurance system (H. Gao et al., 2013).

2.1.3.4 Japan

The purpose of hospital accreditation in Japan is to provide a comprehensive evaluation of hospitals from a neutral standpoint and an academic perspective. The experiences include: evaluating the overall operation of hospitals objectively and fairly through on-site inspections and proposing specific, actionable improvement goals, thereby improving the overall level of hospitals’ medical care and quality assurance; motivating hospital medical staff to take the initiative to identify and address hospitals' problems as well as increase the efficiency of hospital operations; improving the quality of hospital care and medical safety assurance, and increasing the general public's confidence in hospital services (Kawakita & Yoshinaka, 1992).

2.1.5.5 Japan Comparison of major hospital accreditation systems abroad

In Canada, Australia, the United Kingdom, Germany, and Taiwan, China, theoretical and practical exploration of hospital accreditation has been conducted since the late 1980s. As a result, third-party accreditation organizations and systems have been developed in these localities to meet the needs of healthcare institutions and patients (Zhang, 2014), as shown in Table 2.1.

Table 2.1 Comparison of major hospital accreditation systems at home and abroad

Accreditation System	Accreditation Organization	Country/ Region	Start-up time	Core Concept
ISQua	International Society for Quality in Health Care	Multiple countries/regions	1995	To provide high quality medical services to all patients; to continuously improve medical care quality and safety; to implement internationally unified standards for hospital quality accreditation/certification and to certify national accreditation and audit organizations
JCAHO	Joint on Accreditation of Health care Organization	United States	1951	Is patient-centered, requiring quality control to achieve the goals of safety, practicality, timeliness, efficiency, and equality
JCI	Joint Commission International	Worldwide (except USA)	1998	Based on the basic concept of quality management and continuous quality improvement; emphasizing that the accreditation be true, reliable, objective and patient-centered
HQS	Health Quality Service	United Kingdom	1991	Focus on the four elements of quality improvement: people, process, environment, and results
KTQ	Cooperation for Transparency and Quality in Healthcare	Germany	2001	The concept of openness and transparency, fine delineation, and circular management; prompting staff to establish and improve a patient-centered internal quality management system
ACHS	Australian Council on Healthcare Standards	Australia	1988	Establish a continuous improvement system to improve medical care quality and patient safety
JQ	The Japan Council for Quality Health Care	Japan	1995	Evaluate the function of medical institutions from scientific perspective to ensure that hospitals provide reliable, high-quality, and continuously improved medical services
TJCHA	The Taiwan Joint Commission on Hospital Accreditation and Quality Improvement	Taiwan of China	1999	To ensure that patients receive safe care in a safe environment by emphasizing the quality and effectiveness of the overall medical care process with the health needs of community residents in mind
Tertiary Hospital Accredita-tion	There is no national unified third-party hospital accreditation body	Mainland China	2011	Patient-centered, strengthen the internal functions of the hospitals, and improve the overall quality and service level of the hospitals through continuous improvement

Source: (Gunther, 2001; D. Wang et al., 2019)

In terms of influence, JCI is a medical accreditation body recognized by the World Health Organization. In the United States, only hospitals accredited by JCAHO get priority access to the national health insurance system. Internationally, JCI accreditation is a "passport and gateway" for national medical institutions to compete on the international healthcare market (Hashemi et al., 2014). JCI is composed of international experts in medicine, nursing, administrative management, and public policy. The assessment focuses on hospital system design, medical procedures, continuous improvement of health services quality, and patient safety (Joint Commission on Accreditation of Healthcare Organizations International Hospital Accreditation Standards [JCAHOIHAS], 2012). The JCI international quality assurance standards are generic, only providing a framework for action and lack local adaptation to specific country conditions (H. Q. Zhao, 2014). The International Society for Quality in Health Care (ISQua) is an independent, member-based non-profit organization represented in over 70 countries. It brings together, for the first time in the world, several national health care organizations and is dedicated to the implementation of internationally harmonized standards for hospital quality assurance and accreditation. A healthcare evaluating organization expecting to implement a healthcare quality accreditation program on hospitals can apply for accreditation through ISQua as a first stage. Also, ISQua published many documents on healthcare quality accreditation systems used by different organizations worldwide including ISO, EFQM, Baldrige, and IQIP (H. Yang & Liu, 2010).

2.1.4 Research progress of hospital grade accreditation system

With the continuous deepening reform of public hospitals and medical system, people have an increasing demand for high-quality medical treatment. Health administrative departments, medical institutions, academic experts, medical staff and social groups began to conduct more in depth discussions and studies on the hospital grade accreditation system (L. P. Ma, 2018). Y. F. Fu and Qian (2022) sorted out the key points and methods of team building in preparation for hospital grade accreditation by participating in the grade accreditation of a certain hospital, and tried to play the role of a team to improve the overall level of the hospital, so as to promote the quality management for the whole hospital. D Wang et al. (2019) analyzed the difference and similarity of the hospital grade accreditation system in Chinese Mainland and Taiwan region from the four aspects of accreditation standards, procedures, methods and results, aiming to promote the development of China’s hospital accreditation system by referring to the advanced concepts and methods of in the two systems. A. L. Wang and Huang (2022) analyzed the new round of hospital grade accreditation in Shanghai, and summarized the accreditation

process from the aspects of existing problems and deficiencies, highlights, and rectification ideas and planning arrangements.

The existing research does make fruitful discussion on the management of hospital grade accreditation, and puts forward measures and suggestions to improve China's hospital grade accreditation system by literature review. But there are still the following problems: First, current research mainly focuses on case analysis of hospital grade accreditation system, or learn from hospitals beyond China, and pays little attention to the interests of all parties in the accreditation process, especially the needs of patients. Patients are not highly involved in this process, and know little about the changes in medical experience brought by hospital grade accreditation as well as the specific implementation procedures of hospital grade accreditation, so accreditation results are not accurate. Second, current research does not use the existing theoretical system to deeply analyze the mechanism of hospital grade accreditation to promote hospital hierarchical management and ensure medical quality and safety, and does not solve the root problems encountered in the accreditation process; Third, many studies mainly raise problems, and few studies analyze the joint participation in the hospital grade accreditation, failing to solve the problem of how to promote the hospital grade accreditation involving the participation of everyone within the whole hospital. Therefore, it is necessary to further explore the public hospital grade accreditation system from the theoretical level.

2.1.5 Research perspective of hospital grade accreditation system

The grading evaluation of public hospital is based on the hospital grade accreditation system, which not only guides the rational development of hospital equipment and facilitation, but also promotes the coordinated development of hospital software, thereby facilitating the formation of a scientific, standardized, and refined long-term management mechanism in hospitals (Viswanathan & Salmon, 2000). In the new round of hospital grade accreditation, more emphasis is placed on dynamic and continuous improvement. The accreditation criteria are shifting from subjective qualitative to objective quantitative. From hospital managers to ordinary employees, everyone is required to overcome inertial thinking, carefully study the content and clauses of the accreditation standards, and actively adapt to the requirements and rules promulgated by the new standards, and transfer from passive accreditation to proactive accreditation. Since 2018, various forums, conferences, and training sessions related to hospital accreditation and quality promotion have been held in regions of China. Industry experts from various regions have been invited to engage in intense discussions and exchanges on the refinement and improvement of hospital accreditation standards, standardized management of

accreditation organizations, systematic training of accreditation experts, and the application and promotion of accreditation results. Hospital grade accreditation has been deepened to enable the results to be truly applied to improve hospital medical quality, operational efficiency, sustainable development, and patient satisfaction. We will continue to learn from experience, explore new methods, seek new ideas, and try to combine the theoretical basis of the system to draw a new blueprint for the hospital grade accreditation system adapted to China's national conditions.

2.1.5.1 Hospital grade accreditation system from the perspective of legitimacy

The famous American sociologist Parsons believes that an organization's value system "must obtain legitimacy based on the functional importance it can contribute to the template of the superior system", that is, gaining recognition from the system is an important way for hospital grade accreditation to obtain legitimacy (Strauss & Smith, 2009). Through literature search, it was found that although there are many theses on hospital grade accreditation in China (Dong, 2004; L. P. Ma, 2015), there is still no research exploring the legitimacy of hospital grade accreditation in China from a legal perspective. At present, the hospital grade accreditation system in China belongs to a bureaucratic system, and its legitimacy is still in crisis, which seriously restricts the development of hospital management strategies, concepts, and tactics.

The legitimacy of the hospital grade accreditation system, or the degree of legitimacy, is determined jointly by the health supervision department and the public both inside and outside the medical institution (Yi, 2008). J. Wang and Xu (2018) constructed the legitimacy of social work from three dimensions: regulatory legitimacy, recognition legitimacy, and effectiveness legitimacy. They believe that the legitimacy of social work is constructed by universities, governments, and social workers through the introduction of knowledge from outside to inside, top-down institutional construction, and the inexperienced social workers' professional practices. J. L. Xu and Wu (2017) analyzed the mechanism of the legitimacy crisis of community social organizations from the perspectives of regulatory, normative, and cognitive dimensions, and found that there were complex tensions among those dimensions, leading to a new legitimacy crisis. In the process of exploring the hospital grade accreditation system, we have been committed to the establishment of the system and maintaining its survival and continuity from the old environment. In this process, various dimensions have generated synergy and tension with each other, forming the existing institutional scene. Therefore, the grade accreditation system needs to return to the necessary conditions for institutional composition. By following Scott's division of legitimacy dimensions, we can examine how

regulation, norms, and cognition arise, and delve into the interactive process of the grade accreditation system (Smith & Weinstock, 2019).

2.1.5.2 Hospital grade accreditation system from the perspective of organizational learning

In recent years, scholars have demonstrated through theoretical and empirical research that organizational learning (OL) has a great promoting effect on the management of medical institutions and enterprise development (Gunther, 2001). Many public institutions have gradually taken the construction of learning organizations as a goal of organizational development, and have achieved tremendous benefits through practical actions. However, there is relatively little research on OL and hospital grade accreditation. At first, organizational learning theory was proposed by enterprises, and for a long period of time, OL was considered a "patent" of enterprises. Enterprises enhance their core competitiveness through OL, thereby gaining the benefits they pursue (March & Olsen, 2010). While hospitals are usually characterized by non-profit, non-distributive-constraints, and altruism, and generally do not aim at obtaining profits. In this regard, there may be situations where OL does not significantly or directly promote grade accreditation, due to a lack of strong learning motivation. However, Drucker pointed out that OL is not simply about gaining profits, but a task that all organizations must undertake. Regardless of the organization's goals, OL is the most effective means of improving performance, and "profit" is just one of the criteria for testing performance (Yardley et al., 2012). All organizations need to learn. Non-profit organizations not only need to learn, but also need to value and strengthen OL. Due to the many characteristics of hospital grade accreditation that are completely different from those of enterprise management, the classic organizational learning theory of enterprises cannot be simply applied. This study takes the hospitals in G Province as an example to explore the relationship between OL and hospital grade accreditation system.

Research has shown that approximately 20% of the total knowledge applied by a technology personnel is acquired through school learning, while approximately 80% of the knowledge is acquired to meet needs in work and life (Paul et al., 2001). Therefore, the overall quality of hospital employees often depends on the organizational learning capability (OLC). In addition to recruiting high-quality personnel, hospitals should pay more attention to personnel training and development, help medical technicians strengthen their learning, acquire knowledge and technology, and continuously improve their professional skills and comprehensive quality. It is an inevitable choice for hospitals when participating in competition

in the knowledge economy era, to strengthen OL, create learning conditions, encourage employees to continuously learn, update their knowledge structure, and maximize their potential. It is also the fundamental guarantee for healthy development in the fiercely competitive medical market, and the inevitable trend for hospital development (Pu & Wu, 2002).

2.1.5.3 Hospital grade accreditation system from the perspective of stakeholders

The process of hospital grade accreditation involves multiple stakeholders, including the government, health management agencies, participating hospitals, hospital leadership, medical staff, accreditation experts, patients and their families, industry associations, medicine and consumable suppliers, and the ecological environment. Each party has their own interests and demands, and multi-party games will inevitably affect the interests of decision-making bodies. Clarifying the stakeholders involved in hospital grade accreditation is beneficial for a deeper understanding and analysis of the division of responsibilities, rights, and obligations during the accreditation process, so as to avoid potential risks caused by different stakeholders, achieve coordinated development of interests among all parties, and promote hospitals to achieve more scientific and stable modernization of management (Nong et al., 2014). L. Chen et al. (2021) determined the stakeholders of integrated health services according to the Mitchell Classification Principle, broke the service division and established the sharing mechanism among stakeholders through refined and precise demand response, so as to promote the sustainable development of health service. Xiao et al. (2021) found the problems existing in various subjects in medical complaint management through the Stakeholder Theory, analyzed the demands of patients, managers, medical personnel, public security departments and other major stakeholders in hospital complaint management, and provided theoretical support and practical reference for the sound development of medical complaint management. S. H. Zhu et al. (2015) identified the stakeholders of public hospitals from the perspective of the Stakeholder Theory, discussed the factors affecting the comprehensive performance of public hospitals, and found that interests demand of patients and medical staff, hospital managers and governance models, and the competition in health industry as well as its intensity all had an impact on the comprehensive performance of public hospitals. It is recommended that all hospitals "should establish a patient-centered hospital governance mechanism, improve the incentive and restraint mechanism for medical personnel, and accelerate the reform of legal person governance model in public hospitals" to encourage healthy competition among hospitals.

Under the requirements of the new round of hospital grade accreditation, it is also necessary to clarify the operational requirements of each department, establish a stakeholder governance

mechanism, and strengthen external constraints on public hospitals (T. H. Liu, 2008). The health administrative department conducts external supervision of public hospitals through accreditation standards, requirements, data, and on-site evaluation results. They have a close interest relationship with public hospitals, and their attitude towards the establishment of modern hospital management systems directly determines the operation and development of public hospitals, leading the reform of medical institutions and affecting the implementation of modern hospital management systems. The health administrative department conducts external supervision of public hospitals through evaluation standards, requirements, data, and on-site evaluation results. They have a close interest relationship with public hospitals, and their attitude towards establishing modern hospital management systems directly determines the operation and development of public hospitals, leading the reform of medical institutions and affecting the implementation of modern hospital management systems. The experts accredit and grade the hospital based on numerous factors, including the core management systems, such as hospital charter, rules and regulations, resource allocation and operation data, medical quality and safety, and medical service capabilities, the indicators of medical quality and safety, key professional quality control indicators, single disease (surgery) quality control indicators, key medical technology clinical application quality control indicators, supplementary indicators, cultural construction and party building. The hospital leadership is responsible for making hospital decisions, gaining credibility, honor, and social recognition, and instructing the direction of hospital construction. Medical and nursing staff are both the objects and subjects of accreditation, participating in the internal governance of the hospital, which is conducive to the implementation of democratic supervision and enhances the scientific and democratic decision-making of the hospital. They play an important role in the grade accreditation process, directly participate in hospital management, provide medical and health services, and realize self-worth through personal career development. Through hospital accreditation, patients and their families experience changes in the medical environment and process, indirectly express their demands, and participate in management. Other stakeholders can participate in public hospital management through different mechanisms, which can strengthen information communication and prevent the occurrence of internal control within the hospital. Stakeholders from all parties can fully express their demands, and the clear division of labor enhances the execution of policies. Under the coordination mechanism, interests can be balanced and integrated (Mills et al., 2019).

2.2 Review of research on the legitimacy of graded hospitals

2.2.1 Concept of legitimacy theory

As the core concept of institutional theory, legitimacy is regarded as a key resource of organizations and a bridge connecting organizational behavior and the environment. It was first proposed by Weber and later attracted wide attention from scholars. It has been widely used in the fields of political science, sociology, management, psychology and education (Gibelman & Demone, 2002). Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Ted et al., 2003). Suchman (1995) regarded legitimacy as a social perception or assumption that within a social system with norms, beliefs, and values, the actions of an entity are considered correct and appropriate by other social observers. Q. Ma et al. (2015) believed that legitimacy is a judgment and estimation of social members, and stated that under the constraints of legitimacy, the growth of new enterprises depends on the legitimacy performance and legalization behavior of enterprises. Although these studies have some differences in the definition of legitimacy, they all reveal the core connotation of legitimacy, that is, compliance with the norms and values of the social system. Legitimacy refers to the perception of organizational stakeholders to the organization and its behavior, which is embodied in three aspects: regulative legitimacy, normative legitimacy and cognitive legitimacy. Among them, regulative legitimacy comes from the government's regulatory policies and laws and regulations, and the behavioral standards formulated by industry associations and certain powerful organizations. These rules and regulations in different fields often guide and regulate the business behaviors of enterprises, which are recognized by the government (Singh & House, 1986). Normative legitimacy mainly refers to the socialization process of social norms, values and beliefs within the existing system, which will force medical institutions to respect certain codes of conduct and norms in the process of their activities, which is recognized by the public. Also known as moral legitimacy, normative legitimacy originates from social values and moral norms, reflecting the public's "correct judgment" on an organization, which is based on whether corporate behavior is conducive to improving social welfare and whether it conforms to widely accepted social values and moral norms (Morse et al., 2010). Cognitive legitimacy mainly comes from the public's understanding and perception of a certain situation of an enterprise. When a certain activity is recognized by and familiar to

patients, there is a certain degree of cognitive legitimacy, a logical recognition. Cognitive legitimacy is not easily distinguished from the normative legitimacy mentioned above. The former focuses on "being understood and accepted", while the latter emphasizes conformity with shared morals and values (Baker et al., 2003).

Obtaining legitimacy is the basic premise for the survival and development of modern organizations. For hospital organizations, the main body of social responsibility in China, it is particularly important to obtain legitimacy. That is to say, obtaining institutional recognition is an important way for hospital management to obtain legitimacy (W. C. Xu & Zhu, 2017). Although there have been many studies on hospital management in China, there is a relative lack of research on hospital grade accreditation from the perspective of legitimacy of the institutional theory. The hospital grade accreditation in China has been implemented for more than 20 years. The new standards have been continuously improved and revised on the basis of previous standards, and the accreditation rules, methods, and requirements have been more strictly refined. Adhering to the methods of promoting construction through evaluation, promoting reform through evaluation, and integrating evaluation and construction, has improved the legitimacy of hospital management and achieved phased results.

2.2.2 Research progress of legitimacy theory in the field of organizational management

As Powell and Dimaggio (1991) widely applied the concept of legitimacy to explain the interpenetrating relationship between various organizations and the environment through blurred boundaries, the importance of legitimacy for the growth and organizational management of new enterprises has gradually been recognized. The perspective of studying legitimacy in the academic community has shifted from passive requirements in the past to active demands, and many ways to obtain legitimacy have been proposed. From the discussion on the legitimacy of social order to the introduction of legitimacy by Parsons into the field of organizational sociology to explain the convergence of organizational institutional structures, organizational behavior is not only driven by the pursuit of benefits, but also influenced by legal system, socio-cultural norms, beliefs and customs. Legitimacy has become the cornerstone of organizational research (Aldrich & Fiol, 1994). For the management of organizational legitimacy, the essence is how to coordinate the relationship between actions and institutional requirements, either to completely comply with institutional requirements to adjust business activities, or to influence and manipulate the system to meet the needs of its own business activities, and how to achieve production and development in the environment of conflicting

legitimacy, which puts forward higher requirements for the management of legitimacy (J. G. Wang et al., 2020).

Due to the "freshman disadvantage" of entrepreneurial organizations, their survival rate is often lower than that of mature enterprises, and the difficulty in crossing the threshold of organizational legitimacy is the main reason for their premature mortality (Singh & House, 1986). Therefore, biotechnology enterprises are more willing to establish relations with high-status venture capital enterprises to gain legitimacy. Satellite broadcasters obtained market legitimacy through partnerships with other famous enterprises in the early stage. Enterprises, organizations and institutions have improved the competitiveness of technical standards in their pursuit of institutional legitimacy. Research shows that organizations can obtain key entrepreneurial resources such as human and financial resources through legitimacy and can better adapt to the environment to maintain their own survival and development (Calic & Mosakowski, 2016; D. M. Zhou et al., 2020). Shen et al. (2014) analyzed the new institutional theory of organizational sociology from the perspective of legitimacy. Through theoretical reasoning and empirical testing, they concluded that external regulations, norms and cognitive pressures positively affect social strategic responses, filling the gap in the explanatory power of previous research ideas such as "resource-based view (RBV) and competitive advantage", and providing new ideas for organizational management. Shi and Li (2020) used the legitimacy review mechanism to comprehensively implement administrative normative documents, promote the construction of the rule of law, ensure the legality of the main bogy, authority, procedure, description and form of the formulation of administrative normative documents, and provide a high-quality and law-based administrative system for the construction of a rule of law government. H. Xu and Gong (2021) use "legitimacy" as the most important criterion after the implementation of Party regulations, an important yardstick to measure the effectiveness of the construction of the Party regulations, and guide the benign, healthy, orderly, scientific and reasonable development of the system of Party regulations. Liao and Zhu (2019) used the legitimacy theory as the starting point to discuss the crisis faced by the Miao medical culture, constructed a national medical culture system, and maintained the value of Miao medical culture. G. M. Xie (2020) set up the Medical Social Work Department based on the legitimacy mechanism, and explored how to promote the healthy operation of the Medical Social Work Department from the perspective of legitimacy, which requires the joint efforts of the state, hospitals, the medical social work industry, medical social workers, and patients. More institutions, organizations and enterprises are led by the acquisition of cognitive legitimacy in the initial stage, normative legitimacy in the shake-out stage, and regulative legitimacy in the

stable stage, forming an evolutionary path of "cognitive legitimacy - normative legitimacy - regulative legitimacy" to obtain sustainable growth of legitimacy resources at different stages (Z. Y. Peng & Wu, 2019).

However, gaining legitimacy does not necessarily mean that it can be done once and for all (J. Wei & Yang, 2018). Organizations also need to maintain a high level of legitimacy by improving their own organizational image or influencing the external environment. This study defines this type of behavior as the legitimacy management of entrepreneurial organizations. Scholars have pointed out that entrepreneurial organizations can maintain legitimacy by transforming organizational identity (F. Greg et al., 2016), changing storytelling techniques (S. Q. Wu & Feng, 2018), building new network relationships and value connections (Y. T. Chen et al., 2012; M. Y. Liu et al., 2022). Such studies are based on multiple legitimacy thresholds and present similar but different views with spatial dynamics. These studies also believe that the legitimacy threshold is not fixed, but usually has more specific or diversified requirements as the organization enters a more mature development stage, which is a dynamic change in the temporal dimension (F. Greg et al., 2017). One of the most typical examples is the study of F. Greg et al. (2016), who used a technology venture as an example to point out that organizations confront multiple progressive and increasingly complex legitimacy thresholds at different life cycle stages.

2.2.3 Application of legitimacy theory in hospital management

Y. Liu and Wang (2016), starting from the implementation of drug procurement rules, built a composite legal evaluation mechanism to provide a useful way to realize the pre-event, in-event and post-event regulation, fully guaranteeing the legality of the process and outcome of the implementation of drug procurement rules, and putting an end to violations of laws and regulations. X. P. Liu and Wang (2009) used an intelligent medical device management system to automatically form a product dictionary, identifying information from four aspects: product, manufacturer, supplier, and audit, which replaces manual audit, greatly improving the efficiency of legal supervision of medical device products and playing a role in safeguarding medical safety. Medical social work is the field with the strongest social needs, the most active moves, the fastest development, the highest degree of specialization, the greatest social influence, the most significant achievements in system construction, and the strongest development momentum of social work among all practical fields of social work (Baxter & Jack, 2015). Taking Shenzhen Children's Hospital as an example, W. Lu and Wu (2019) analyzed the interaction process of multiple systems in medical social work from the

perspective of legitimacy, and conducted in-depth analysis of the path to legitimacy, aiming to give full play to the professionalism of social workers and constantly promote the improvement and development of organizations. Q. Gao and Gao (2019) analyzed the constitutions of public hospitals from the perspective of legitimacy, and found that the current public hospitals lack the experience and ability to formulate charters, which leads to the imperfect health management system in China. To ensure the legitimacy of the constitution of public hospitals, we should improve the management system of public hospitals from the macro level and promote the internal reform of public hospitals from the micro level, taking the establishment of modern hospital management system as the basis. Taking doctor-patient disputes in public hospitals as an example, P. L. Liu (2010) explained that solving medical disputes through self-remedy lacked a mechanism to objectively evaluate professional medicine and medical law problems, resulting in many medical disputes being unable to be objectively and fairly resolved. Therefore, she analyzed the necessity and feasibility of restricting the right to negotiate from the perspective of legal nature, providing a legal basis for the reasonable handling of doctor-patient conflicts. Based on the basic theories and methods of game theory to analyze the patient party's different resistance strategies during the settlement of medical dispute, she elaborated the crisis of legitimacy during the medial dispute settlement mechanism. Zhu (2017) discussed the legitimacy of medical association engaging in medical damage identification from the aspects of legal basis, establishment of expert database, and improvement of identification procedures, so as to provide relevant basis for the comprehensive improvement of the legal system for medical dispute settlement. Based on the *Criminal Procedure Law* and the *Mental Health Law* in China, compulsory medical procedures were brought into legal orbit, W. C. Xu and Zhu (2017) analyzed how to realize the balance between the professionalism and legitimacy of medical institutions. On the one hand, medical institutions have professional medical technology and personnel, and have their unique advantages in treating and helping mental patients. Therefore, we should further clarify the position and role of medical institutions in compulsory medical procedures. On the other hand, we should make clear the responsibilities through legislation, and promote the combination of the public security department and the medical resources, promote reasonable division of labor and mutual supervision within medical institutions. Professor Yi (2008) deeply explored the root causes and solutions of the legitimacy crisis of hospital management, and believed that the overemphasis on economic interests, the inability of the hospital management system to adapt to the new institutional environment and the lack of independence of the social supervision mechanism were the deep-rooted causes of the legitimacy crisis of hospital management. Whether hospital management has legitimacy, or

what degree of legitimacy the hospital management has, is largely determined by the public and supervisory agencies inside and outside the hospital. It is proposed that the key to solving this problem lies in returning to public awareness, strengthening service functions, establishing a hospital management system compatible with the policy discourse environment, making hospital management and supervision institutions independent, legalizing supervision behaviors, and strengthening the awareness of public relations, to obtain the organizational legitimacy of medical institutions.

From the perspective of cognitive legitimacy, the cultural concept of emphasizing "people-oriented" under the grade accreditation system has a significant effect on improving medical services: (1) The service process has been further simplified and optimized. The average appointment rate of tertiary hospitals in China increased from 32.10% in 2015 to 48.32% in 2022, and the number of medical institutions achieving time-phased appointment increased from 3,329 to 13,085. By June 2023, the average appointment rate of tertiary hospitals in China reached 49.21%, and 13,138 medical institutions achieved time-phased appointment (Hong et al., 2023). (2) The new diagnosis and treatment model has been promoted. The labor analgesia rate of 913 pilot hospitals increased from 27.5% in 2015 to 60.2% in 2022, and the number of medical institutions conducting day surgery increased from less than 100 to 3,104. By June 2023, the labor analgesia rate in pilot hospitals reached 62.7%, and the number of medical institutions conducting day surgery increased by 1848 (Qi et al., 2019). In addition, 2,767 medical institutions above the second level opened at least one of the four new types of outpatient clinics (anesthesia, pain, pharmacy, and health management), and 487 medical institutions opened all the above four new types (J. Z. Li, 2020; J. Xu et al., 2019). (3) The treatment environment has been further improved. 92.09% of public hospitals at or above the second level have implemented "one person, one consulting room" for outpatient visits. For example, Shandong Province strictly protects patient privacy and each consultation area has separate triage and guidance desks to ensure good order of treatment (Y. Huang et al., 2021). Zhejiang Province promotes "smart parking" service through "urban brain", intelligently manages parking spaces and vehicles in hospitals, guides the parking sharing of idle parking spaces, and creates a humanized medical environment for patients (J. L. Yu & Fang, 2023). (4) The service has been further enhanced. Huashan Hospital Affiliated to Fudan University encourages "working with patients" and continuously strives to improve medical processes, service measures, and environmental facilities (W. Liu et al., 2019). The Second Affiliated Hospital of Nanjing Medical University launched the "Health Caravan + Specialized Light Cavalry" touring medical public welfare brand activity, integrating health education and

specialized diagnosis and treatment. Since the launch of the activity, it has traveled nearly 20,000 kilometers, dispatched more than 1,000 medical personnel, visited more than 60 communities, served more than 25,000 people, and served 95 grass-roots units in Jiangsu Province (C. Y. Chen et al., 2016). The Affiliated Tumor Hospital of Xinjiang Medical University improved the management system of social workers and volunteers, carried out psychological assessment and follow-up services for tumor patients, and has served more than 19,000 patients in the past three years (X. M. Wang et al., 2018).

2.3 Review of research on organizational learning

2.3.1 Concept of organizational learning

Cyert and March (1963) proposed that organizational learning (OL) is an experience-based adaptation process, arguing that organizations adapt to three decision-making processes: First, organizations adjust their templates based on previous experiences; second, the organization focuses on specific objects; third, organizations find better ways to search, code, and communicate information. In 1965, Cangelosi and Dill (1964) published *Organizational Learning: Observations Toward a Theory*, which redefined the concept of OL as "the process of discovering errors and correcting them by reconstructing the theory-in-use of organizations, in which the theory-in-use refers to the assumptions behind people's behaviors that are often not recognized", which triggered a upsurge of research on OL theory by scholars around the world. C. Argyris and Schon (1978) proposed that OL involves the detection and correction of error, which must complete the four stages of "discovery-invention-execution- generalization", and clarified the single-loop and double-loop theoretical learning of OL. Argyris is known as the father of "OL", who has had a profound influence on the in-depth development of OL theory. In 1997, he further optimized the concept of OL, pointing out that OL is a process of discovering problems, finding solutions, adopting solutions, and adjusting the implementation effect of solutions (C. S. Argyris, 1978). Stata (1989) argued that OL is the primary process of innovation, and that in fact, the rate at which individuals and organizations learn may become the only sustainable competitive advantage for organizations, especially in knowledge-intensive organizations. In 1990, Senge (1990) OL theory showed that in a learning organization, people continually expand their capacity to create the results they truly desire, where new patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together, and OL must be achieved through learning, although individual

learning does not necessarily lead to OL. In 1995, Slater and Narver (1995) further argued that OL is a repeated dynamic process that develops new knowledge and ideas with influential behavioral potential. Zhu and Wan, the representative scholars on OL theory in China, put forward in their thesis that OL is the process in which an organization constantly adjusts itself to the changing environments and processes through internal and external communication. In 2004, the Chinese scholar G. Q. Chen and Zhou (2018), while retaining the four stages of Argyris and Schon's OL process, also added a "selection" stage between invention and execution, and a "feedback" stage between generalization and discovery, establishing the concept of "6P-1B" OL. Among them, 6P refers to the six abilities of OL, namely, discovery, invention, selection, execution, generalization and feedback, and 1B refers to knowledge base, which describes OL as "a cyclical process of social interaction that occurs across individual, group, and organization, or within organizations, in order to realize their own vision or adapt to changes in the environment, and to continuously generate and acquire new knowledge and behaviors, through interpreting, integrating, and institutionalizing" (Z. T. LIu, 2015). In 2010, Gareth et al. further proposed that "OL" is a process used by managers to promote their members' understanding of the organization and its environment, improve their management ability, and enable them to continuously make decisions that can enhance organizational effectiveness (Armour et al., 2016).

From these definitions of OL, it is found that different scholars have studied OL with different emphasis and perspectives, and they also have different understandings of the concept. Although OL is defined from different perspectives, it can be summarized as follows: (1) OL is not only the learning of individual members, but also that of the organization as a whole. (2) OL is a systematic engineering. In the learning process, an organization is not independent, cannot be completely detached from the external environment, nor is it a simple learning technology behavior. Its process and effect are affected by the internal and external environment of the organization, and it is a systematic process. (3) OL is an activity that involves systematically solving problems and mistakes, learning from one's own past and experience, learning from others, and promoting knowledge diffusion within the organization. (4) OL is a process of effectively collecting, interpreting, processing, and reflecting various internal and external information of an organization to improve organizational behavior. (5) OL is the ability to make independent innovation and improvement by using its own knowledge to improve its adaptability and development potential in the face of a rapidly changing environment. It mainly includes five learning modes. One is the single-loop mode. Following the approach of identifying problems, analyzing their causes, determining responsibilities, and formulating

countermeasures, the main focus is on solving the current problem, while neglecting the causes of the problem. The second is the dual-loop mode. Compared with the single-loop mode, the dual-loop mode not only focuses on solving the current problems faced by the organization, but also optimizes the OL mode and enhances its effect by removing the causes of the problems. The third is the relearning mode. Change one's own mindset, solve practical problems with new ideas, break free from the constraints of traditional thinking, and achieve the effect of improving the efficiency of OL and innovation ability. The fourth is the action learning mode. The organization exercises the collaborative and practical abilities of its members by involving them in various practical projects. The fifth is the strategic alliance learning mode. Organizations form partnerships with other organizations to share knowledge and facilitate knowledge transfer to cope with increasingly fierce external competition. The five learning modes in OL theory provide new ideas for the Party spirit education among Party members in local universities (Y. A. Wang & Sun, 2018).

At present, the uncertainty in China's hospital management environment is constantly increasing. The high correlation and volatility of organizational management means that we need to develop new management concepts and compound cognitive potential to lead the development of medical institutions, and promote them to adapt to the new era with constant development and changes. Based on the definition and research object of OL, this thesis defines OL in hospitals as: in order to further improve the platform construction and enhance self-competitiveness, the hospital constantly examines itself and discovers problems in the grade accreditation, focuses on the review opinions, internal and external information and knowledge to improve the medical environment, improves the internal requirements of sustainable development, and strengthens medical quality and safety, so as to obtain a high-level, high-platform comprehensive tertiary hospital.

2.3.2 Research progress of OL theory in the field of organizational management

OL is an important way for an organization and its members to continuously develop their potentials for innovative thinking and problem solving in a complex and ever-changing environment. In the West, people's research on OL is increasingly in-depth, and the research on organizational management is more mature. However, at present, research on hospital management with Chinese characteristics that is suitable for OL is still relatively weak (X. H. Wang, 2018). H. B. Yu et al. (2008) used the AMOS software to analyze the impact of transformational leadership on OL, and found that the six types of transformational leadership had significant promoting effects on OL. Secondly, OL requires employees to create knowledge

in the process of knowledge exchange and integration. The higher the intellectual capital and quality of employees are, the more obvious the effect of knowledge exchange process will be, that is, the more significant the promoting effect of intellectual capital on OL will be. Hansen (1999) research on knowledge sharing among departments of an enterprise found that the employees who have the most opportunities to access knowledge sources are those who are good at using communication skills, and that improving the intellectual capital of employees can promote OL by increasing the opportunities to access sources. Y. G. Wang et al. (2003) found that in a turbulent competitive environment, OL has a significant positive effect on improving the dynamic capabilities of enterprises. The influence of OL on dynamic capabilities is actually the result of individual learning, that is, individuals drive OL through learning, and then affect the dynamic capabilities of the organization. J. Wei and Jiao (2008) took the senior management as the research object to study the impact of senior executives' individual learning on the dynamic capabilities of the enterprise, indicating that the process of senior executives seeking solutions, continuous trial and error, testing and innovating is actually the process of OL, which has a significant effect on improving the dynamic capabilities of the enterprise. M. T. Wu (2023) applied OL theory to study the current situation and dilemma of creating anti-drug demonstration cities. She believed that OL is a series of effective and long-term development process, taking the three stages of knowledge creation, transfer and retention as the analytical approach to clarify the current situation of the city and promote the sustainable development of the creation of anti-drug demonstration cities.

In addition, OL has a promoting effect on technological innovation, management innovation, strategic innovation, incremental innovation and breakthrough innovation, which has been confirmed by a large number of empirical studies. H. M. Xie and Han (2005) empirically confirmed that OL plays a significant positive role in technological innovation and management innovation. Based on the analysis of the utility of OL in the context of strategic transformation, Rui et al. (2005) pointed out that the utility essence of OL to strategic innovation is to grasp the dynamic environment and cultivate the heterogeneous knowledge of enterprises. A study by Dewar and Dutton (1986) based on the data of 40 shoe manufacturers shows that the degree to which a company acquires new knowledge determines the degree to which innovation occurs, namely radical innovation or incremental innovation. The research by Faems et al. (2005) also indicates that utilization learning is positively correlated with incremental innovation of enterprises, while exploratory learning can significantly promote fundamental innovation of organizations. Meeus et al. (2001) also demonstrated that OL is a key component of the innovation process, and that OL not only enables enterprises to better

achieve improvements within the paradigm, such as continuous improvement, but also promotes breakthrough innovation. Stata (1989) found that OL can improve organizational innovation capability, especially in knowledge-intensive industries, and is the only sustainable source of competitive advantage for organizations. Through empirical research on the information electronics industry in Taiwan Science Park, Lin (2001) argued that OL has a significant positive impact on organizational innovation. Mckee (2010) also proposed that OL has a significant promoting effect on institutional innovation, and Xue et al. (2018) also confirmed such results by using their self-designed OL questionnaire. In the process of exploratory learning, Dai et al. (2020) proposed that individuals, groups and enterprises can form innovative understanding of crisis through intuitive perception, interpretation and integration of crisis information. In the process of applied learning, solutions will also be creatively used during the evolution of crisis. Through bold attempts, enterprises may find opportunities in the crisis, and successfully turn the crisis into opportunities.

2.3.3 Application of OL theory in hospital management

In the era of big data, the ability required for hospitals to gain competitive advantages is no longer limited to traditional technological capabilities, but requires an innovation ability that can rapidly and continuously improve medical technology and services, the foundation of which is OL ability (Yuan, 2010). As knowledge-intensive and technology-intensive organizations, hospitals integrate knowledge in many fields such as medicine, management, nursing, and pharmacology. They are closely related to disciplines such as law, humanities, ethics, and information engineering, and are a combination of a series of instructions and resources. Hospital knowledge has a strong leading role. Knowledge is required to meet the medical needs of patients and reach a new round of hospital grade accreditation standards. It is a necessary prerequisite for the survival and development of organizations, and has become the decisive force and core competitiveness to promote the development of medical technology and management. Whoever can innovate and make good use of knowledge can gain the advantage and get amazing benefits. Advocating OL can comprehensively improve the core competitiveness of hospitals, maintain the internal requirements of scientific and sustainable development of hospitals, and is an urgent need for hospitals to transform from traditional management models to knowledge and modern management.

Nowadays, more and more hospitals have realized that developing and cultivating their OL capabilities is an important guarantee for a hospital to obtain and maintain a competitive advantage. Taking Sir Run Run Shaw Hospital as an example, Cai et al. (2008) elaborated that

the hospital comprehensively manages OL from three stages, knowledge acquisition, knowledge absorption, and knowledge innovation, continuously improves OL capabilities, and advocates the active learning model, which not only greatly improves the professional level and work enthusiasm of organizational members, but also makes the hospital's work recognized by the public. Due to the continuous deepening of OL in hospitals and the recognition of hospital culture and purpose by its members, Sir Run Run Shaw Hospital has achieved remarkable results in just over a decade. By analyzing the characteristics of OL in public hospitals and taking knowledge characteristics and power hierarchy as the standard, Liu constructed a new dynamic process model of OL in hospitals, and put forward countermeasures and suggestions for the new healthcare reform model in China (Yuan, 2010). H. Feng (2010) took Kunming Children's Hospital as the research object and utilized the successful OL theory in enterprise management. Through investigation and analysis of the development status of OL in public hospitals after reform, he confirmed the importance of OL in improving the service level and quality of hospitals, to remain invincible in fierce competition, and emphasized the need to pay attention to the connotation construction of OL. Y. L. Wang (2009) confirmed the positive practical significance of OL in promoting the management concept of providing excellent value to patients and creating excellent organizational performance through urban private hospitals. The whole hospital is aware that continuously acquiring knowledge and resources, updating knowledge, using knowledge, and creating knowledge are important functions of the organization. Only through continuous learning to carry out comprehensive innovation, introduce the OL theory, improve the effectiveness of OL in hospitals, and improve the overall strength level, can it meet the competitive pressure and survival needs from different aspects.

OL in hospitals refers to the activities of acquiring, transforming, applying and innovating knowledge between the hospital and the external environment, departments within the hospital, and different positions in each department in the process of achieving operational and management goals of the hospital (Slater & Narver, 1995). One of the significant differences between OL activities in medical institutions and individual learning activities is that OL activities are achieved through the mutual communication and interaction between hospital members and different stakeholders outside the hospital. Therefore, the goal of this learning activity is to make all hospital members know how to get the best solution to the problem of the hospital as a whole. In addition, there is a close relationship between individual learning and OL in hospitals. Individual learning is an important premise and foundation of OL. On the other hand, OL is not a simple accumulation of individual learning, but mainly the result of individual behavior with a common thinking pattern. Organizations can actively influence the

learning of members in the organization and expand their knowledge, skills, qualities and attitudes. Medical staff are "patient-centered" and provide timely and effective diagnosis and treatment, which is conducive to self-evaluation of their work effectiveness and timely self-adjustment, thus achieving self-management. Medical personnel have a strong sense of responsibility and professionalism, because doctors shoulder the sacred duty of saving lives and healing the wounded, the slightest mistake in the work may cause the cost of life (Eckles et al., 2005). In order to better carry out medical services, strive to master the latest technology, adapt to the continuous development of medical technology, medical staff must constantly learn to update their professional knowledge and skills. In the learning process, organizational members are more likely to reach a consensus on knowledge such as organizational culture and vision, which is conducive to improving the understanding ability of OL. Communication and exchange with each other in daily work and learning will be easier and more comprehensive. Organizational members are also willing to share their acquired information or knowledge with other members, so as to make full use of knowledge.

Experts conducting on-site evaluations are required to participate in OL and receive homogenized training every year. Ma, director of the National Health Commission, put forward four requirements in the hospital accreditation training course. Firstly, establish a professional hospital reviewer (evaluator) system, and realize the four goals, namely specialization, professionalization, modernization (learning to use modern management tools), and internationalization. Secondly, continue to explore a patient-centered evaluation system. Thirdly, gradually build an independent and internationalized third-party evaluation institution. Fourthly, establish the evaluation results announcement system. This clarifies the thinking and points out the direction for the new cycle of evaluation (M. Z. Chen et al., 2019). The subjective evaluation method should be gradually transitioned to the "objective and unified evaluation standards". Training for each reviewer will be conducted through face-to-face teaching and on-site guidance, to ensure a deep understanding of the inspection points and key points of the standards, achieving basic homogenization, forging a national evaluation expert team, establishing a pool of reviewers and teaching staff. On-site evaluation team members should also reach consensus collectively, to effectively avoid unfairness caused by personal subjective biases, and improve the objectivity, fairness, scientificity, and authority of evaluation results (H. B. He et al., 2021).

2.4 Review of research on stakeholder theory

2.4.1 Basic concepts of stakeholder theory

Since its establishment, the stake holder theory has gradually enriched and developed, especially in the 1960s.It is considered that it was first proposed in the book *Strategic management: A stakeholder approach*, written by E. E. Freeman (1984) . Freeman's classical stakeholder concept and management theory were recognized by the academic community (Luo & Jiang, 2011). Stakeholder management theory refers to the management activities carried out by business managers to balance the interests of various stakeholders. The stakeholders include not only the shareholders, creditors, employees, consumers, suppliers and other trading partners or beneficiaries of the enterprise, as well as the pressure groups imposed by government departments, local residents, local communities, public media, environmentalists but also the natural environment, the descendants of human reproduction and other objects directly or indirectly affected by the business activities of enterprises. The broad definition of stakeholder involve all individuals and groups that can affect the ultimate realization of an enterprise's goals, or can be affected in the process by which the enterprise achieves its goals (Luo & Jiang, 2011). This generalized theory is widely regarded as an early pioneer of stakeholder theory in business management practice (Zuzana et al , 2014). In the early days, companies in the United Kingdom, the United States and other countries only believed in the governance mode of externally-controlled companies. With the proposal and development of stakeholder management theory, enterprises in the United Kingdom and the United States gradually recognized and accepted this theory, which also affected many European enterprises' choice of their own governance models, and slowly promoted the management transformation of many European and American enterprises.

According to the stakeholder theory, all stakeholders are closely related to the survival and development of the enterprise. Some may share the operational risks of the enterprise in the operation process, some need to pay the price for the operation and production of the enterprise, and others may even carry out external supervision and regulation on the enterprise, Therefore, before making all operational decisions, enterprises must consider the possible interests of the above-mentioned parties or accept their common constraints. In terms of the specificity of enterprise assets, enterprise resource dependence and the viewpoint of enterprise stakeholders as a key resource provider, all resources of an enterprise not only come from the shareholders,

but also from the employees, suppliers, creditors, and consumer customers. The capital provided by these stakeholders is not necessarily only in the form of material wealth but can also include a unique form of intangible human capital. Since the stakeholders of these enterprises have made specific investments for the enterprise, it is also natural that they should enjoy the residual control and residual claim of the enterprise, which is the so-called ownership of the enterprise. From the perspective of contract theory (Ge, 2008), the stakeholder theory believes that "an enterprise is a group of contracts", so we can consider that "all enterprises are a series of variable contracts between stakeholders", and that each contract participant actually provides a certain degree of personal resources for the enterprise in reality. Therefore, in order to ensure the fairness and impartiality of the enterprise contract, all parties involved have the right to equal and fair negotiation to ensure that the interests of all stakeholders can be taken into account. Only when the enterprise gives a high-quality response to the interest requirements expected by all its stakeholders, rather than please them, can the enterprise continue to survive and develop. These viewpoints and perspectives mentioned above provide a very strong supporting evident for the viewpoint that stakeholders have the right to participate jointly in the management of the enterprise or organization.

In their article on the definition and characteristics of stakeholders, Mitchell and Wood (1997) summarized all 26 representative definitions of stakeholder concepts from the beginning of the Stanford Research Institute's research involving stakeholder theory since 1963 until the mid-1990s, as detailed in Table 2.2.

Table 2.2 Representative Stakeholder Concepts between 1963 and 1993

Time(year)	Source	Stakeholder Concept
1963	Stanford University Graduate School	Without the support of the individuals or group, the organization would cease to exist
1964	Rhenman	Individuals or groups who depend on the development of the organization to achieve their personal interests and whose existence is also dependent on the larger development of the organization
1971	Ahlstedt Jahnukainen	Driven by the interests of an individual or group to participate in the activities of the organization, whose interests are affected by the development of the organization, and at the same time the development of the organization depends on the individual or group
1983	Freeman Reed	Narrowly defined: individuals or groups that the organization must rely on in order to achieve continued survival and development Broad: all individuals and groups who can influence the achievement of organizational goals or can be influenced by the process by which the organization achieves its goals
1984	Freeman	can influence the achievement of organizational goals and is also influenced by the achievement of organizational goals
1987	Freeman	People who are influenced by a business or can

	Gilbert	influence a business
1987	Cornell Shapiro	Beneficiaries who have a contractual relationship with the organization
1988	Evan	Those who have a claim on or an interest in the enterprise and whose rights are respected or violated
	Freeman	in response to the benefit or detriment of the enterprise's activities
1988	Bowie	organization will cease to exist if its support is lacking
1989	Alkhafaji	Groups for which companies are responsible
1989	Carroll	owns shares in the business and also has an interest, rights, and even ownership or legal rights to the business assets
1990	Freeman Evan	People who have a contractual relationship with the business
1991	Thompson et al.	People associated with the organization
1991	Savage, etc.	A person who has the ability to influence and has an interest in the organization's activities
1992	Hill Jones	The association between shareholders who have a claim on the firm is established through an exchange of interests, that is, they provide important resources to the firm so that their own interests are satisfied
1993	Brenner	Those who have a significant and legitimate relationship with the organization
1993	Carroll	Having a stake in the company can be affected by and influence the development of the company
1994	Freeman	People as participants in the process of creating shared value
1994	Wicks et al.	Businesses and stakeholders interact and influence each other, giving meaning and significance to the business
1994	Langtry	Those who have a legitimate claim on the company and for whom the company has a significant responsibility for their interests.
1994	Starik	Those who can and are making their interests known, are currently or may be affected by the business activity in the future, or are currently or may affect the business activity in the future
1994	Clarkson	Risk assumed by investing something of value in the business or its being at risk due to the activities of the business
1995	Clarkson	A person who has or claims a right, interest or ownership in a business and its activities
1995	Nási	The company and its mutual influence and therefore the normal operation of the business
1995	Brermer	Those who are influenced or can influence the development of the company
1995	Donaldson Preston	Individuals or groups whose legal rights and interests are related to the business activity itself in the course of the business activity

Source: (Javanparast et al., 2009; Reed, 1983)

Mitchell and Wood also proposed a score-based approach to classify the attributes of stakeholders that year, scoring possible stakeholders on each of the three attributes, and then determining the type and whether a person or group is a stakeholder of the firm based on the

score (J. Wei & Jiao, 2008). These three attributes refer to *legitimacy*, i.e., whether a group is legally and morally empowered or has specific claims; *power*, i.e., whether a group has the status, ability, and means to influence corporate decisions; and *urgency*, i.e., whether a group's demands are immediately brought to the attention of corporate management. The scoring of attributes in the three dimensions of the Mitchell scale further refines, and enriches the framework of stakeholder theory, As shown in Figure 2.1.

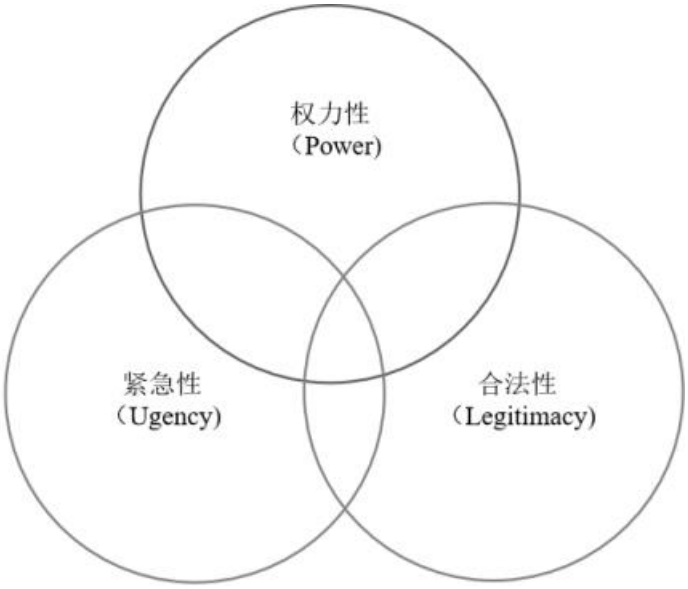

Figure 1.1 Definition and Classification of stakeholders based on Mitchell score-based approach

Source: Mitchell and Wood, (1997)

2.4.2 Application of stakeholder theory

The stakeholder theory in the practice is often used to carry out management research in many different fields. Western scholars such as Mart ń et al. (2016) integrated stakeholder theory into the research and development of new products, and also conducted a systematic analysis of enterprise capabilities and driving factors. When expounding the stakeholder theory. Schang et al. (2016) believed that the most important thing in using the stakeholder theory for analysis is to understand the rights and positions of all stakeholders in the enterprise. It is crucial to identify what interests they have been upholding, what interests they are unwilling to abandon, and most importantly, what resources and how many of them they can mobilize to achieve their own interests. In terms of public health and health policies, Javanparast et al. (2009), applying the stakeholder theory to the public health field in Iran, studied and discussed children's bad cognition. Sergio et al. (2011) believed that using the stakeholder theory to analyze the reform of medical and health policies is actually to collect and sort out the information of public health big data with the help of modern technology, and analyze the positions, rights and interests of

the stakeholders of public medical and health policies. Potential collaborators and many other characteristics and capabilities that may affect the formulation and implementation of government public health policies. Only by understanding and paying attention to the needs of stakeholders in the way of "knowing yourself and your enemy", can we formulate reasonable corresponding strategies, so as to reduce or even resolve the implementation resistance in the medical and health reform, and ultimately improve the feasibility of reform policies. Amanda et al. (1999), Kimani et al. (2016), and Nandraj et al. (2002) have also applied stakeholder theory to public health policies and conducted in-depth research on related issues.

2.4.3 The application of stakeholder theory to hospital management

2.4.3.1 The application of stakeholder theory to the financial analysis of public hospitals

Under the backdrop of China's medical and health reform in the new era, China's public hospitals need to discard and update old perspectives, views and concepts of financial and economic operation analysis. In particular, the core stakeholders of hospitals should fundamentally meet the actual needs of financial and economic operation and management of public hospitals under the new situation in China while considering their own interests and needs. Only in this way can China's public hospitals provide more high-level and diverse medical and health services for patients and the people according to the interests of stakeholders.

To ensure the normal and sound operation of public hospitals, the reform needs the support from hospital stakeholders. Whether a hospital operates stably and well needs to be reflected through the research and analysis of the economic and financial operation of the hospital. The current financial operation analysis system of public hospitals in China is specifically built on the basis of the relevant financial system of public hospitals formulated by the health administration departments. The main objective of economic and financial analysis is to improve the management of a hospital. However, the concerns of stakeholders such as patients, medical staff and senior health administration departments are relatively weak. The backup indicators and data of the analysis system lack relevant financial analysis from the perspective of major stakeholders such as patients, government departments and medical staff. Therefore, it cannot intuitively and comprehensively reflect the needs of public hospital stakeholders for hospital financial analysis in the new era of medical reform. Also, it is not conducive to the hospital stakeholders to understand the financial analysis report comprehensively and pertinently.

First of all, the main stakeholders of public hospitals in the context of China's new medical reform should be defined from three aspects.

Stakeholders involved in the goal of China's new medical reform. From the perspective of the basic reform goal of "maintaining public welfare, mobilizing motivation, and ensuring sustainability" of the new medical reform, it involves the stakeholders of public hospitals. "Maintaining public welfare" is the essential requirement of the government health administration department as the client for public hospitals, and it is also the fundamental demand of patients for safe, effective, convenient, cheap, and accessible medical services. The focus of "mobilizing motivation" is how to mobilize the enthusiasm of medical staff working in public hospitals. Only by ensuring the enthusiasm of all staff in the hospital, can we ensure that patients can obtain safe, effective and convenient medical services and improve patients' medical experience. "Ensuring sustainability" means that public hospitals should pay attention to all the people, money and materials of the hospital, so as to ensure that the hospital can maintain a sustainable development and is able to provide public health services and security. According to the analysis of the objectives of the new medical reform, the main stakeholders involved in the reform are the government, hospitals, patients, and hospital staff.

Stakeholders involved in modern hospital management system are in large number. The management system defines three major stakeholders in China's domestic public hospitals: one is to "adhere to people's health as the center", that can be clarified that patients must be the main stakeholders of public hospitals; Secondly, "implementing the leadership, guarantee, management and supervision responsibilities of the party committee and government for public hospitals". It is very clear that the party committee and government have the attribute of power for public hospitals, so they are also the inevitable main stakeholders of public hospitals; Thirdly, "reasonably defining the autonomous operation and management authority of public hospitals as institutions", the representative grants a certain degree of reasonable independent operation and management authority to public hospitals, which can make it clear that hospital administrators are also the main stakeholders determined by public hospitals.

According to research on public hospital stakeholders by Chinese experts and scholars. According to the literature review on the stakeholders of public hospitals in China, it can be found that most people generally believe that the main stakeholders of public hospitals include the government, patients, public hospitals, employees, private hospitals, primary medical institutions, drug and equipment suppliers, medical insurance institutions, as well as various non-governmental organizations including industry associations, the public, the environment and the media. However, through the stakeholder theory and the defining method of its

attributes -- Mitchell method, it can be defined that the main stakeholders of public hospitals are the government, hospitals, and patients (X. P. Cheng et al., 2015). Since public hospitals have different needs and pursue different goals for their stakeholders, each public hospital will focus on selecting financial information and analyzing it to best meet the needs of different stakeholders.

Financial operational analysis objectives from the perspective of hospital managers: Since the specific interest needs of various types of stakeholders in public hospitals are not exactly the same, their goals will also be different or have certain differences. Each public hospital will generally focus on the selection of relevant financial information, as to analyze the financial information required for different stakeholders and meet the accurate needs of different stakeholders of the hospital to the greatest extent.

A qualified hospital manager needs to comprehensively grasp the hospital's operation ability, service ability, debt paying ability, profitability, social contribution ability, sustainable development ability and other relevant information through the financial analysis of his hospital, and formulate a sustainable, scientific, and reasonable development strategy suitable for his hospital from the levels of human, financial and material.

Financial operational analysis objectives from the patients' perspective: The service objects of all hospitals are social groups with medical needs. Hospitals meet the expected medical needs of patients by providing medical care services. Therefore, the public in society is very concerned about hospitals in essence. They are not only concerned about the quality of medical services, the level of medical technology, and the medical business process that hospitals can provide, but also pay close attention to the price and charge level of hospital medical services and the cost price of non-medical related charges, as to better provide reference for their medical consumption choice.

Financial operational analysis objectives from the perspective of government administrative departments: China's public hospitals are public welfare institutions funded by the government. Whether it is the government's financial compensation policy, the medical service price adjustment policy, the consumables and drugs markup policy, or the national public healthcare resources financing, optimization, allocation, and related policies, etc., all need to be adjusted or formulated by analyzing the overall economic operation of the hospitals under its jurisdiction. Therefore, the financial analysis of the economic operation of the hospitals under the jurisdiction of the functional departments of the government is very helpful to monitor whether the hospitals comply with the relevant policies and regulations of the

government and understand whether the hospitals implement the relevant medical and health functions thus strengthening the management of the hospital by the government departments.

Therefore, we can effectively improve the comprehensiveness and pertinence of the financial analysis of public hospitals through the financial and economic analysis of public hospital stakeholders, so as to continuously meet the needs of diverse parties to better adapt to the modern management mode of public hospitals in the new era of medical reform. More importantly, it can alleviate the current contradictions between public hospitals and their stakeholders, turning their common goals and needs into power, and promoting the communication and cooperation between public hospitals and some stakeholders. It has important practical significance and far-reaching effect on accelerating the realization of the goal of "maintaining public welfare, mobilizing enthusiasm and ensuring sustainability" of medical reform in the new era (Du, 2019).

2.4.3.2 The application of stakeholder theory in chronic disease care

At present, the stakeholder theory has become one of the important management tools and theories in the field of public health management in the world (W. A. Li & Wang, 2007). It not only provides a complete analysis framework of interest relations from the macro top level, but also realizes the integration of the feedback of stakeholders in the whole process of medical care and treatment through micro details. In recent years, the application scope of stakeholder theory in chronic disease nursing related fields has been expanding. The depth of research has also been increasing. Many cases and studies have confirmed that the application of this theory in the actual chronic disease nursing can improve the quality of chronic disease nursing service, improve the satisfaction of patients with chronic disease, and promote the effective communication between doctors, nurses and patients, and the health management of patients' self-chronic diseases have important and far-reaching significance (Sinead et al., 2015).

Ka et al. (2015) indicated stakeholder management refers to a management mode in which managers make appropriate trade-offs through understanding the interests concerned by their stakeholders, and ultimately take the comprehensive balance of the needs of all stakeholders in the organization as the goal. The existing conventional stakeholder management procedures and processes mainly include: (1) identifying the main stakeholders associated with the specific event among numerous stakeholders of different types and attributes; (2) Identify the role of various stakeholders in the occurrence and development of this event, and clearly define the key or core stakeholders; (3) Understand the interest demands and concerns of all parties in combination with the specific status of the event and through a detailed analysis of the actual

resources or conditions; (4) After the above steps, we should effectively formulate personalized decision-making plans and strategies that match the demands of all stakeholders, with a view to ultimately achieving the expected goal of achieving a comprehensive balance of the overall interests of all parties involved in the event, and promoting the continuous optimization and sustainable development of the organization's service quality.

Stakeholder theory is applied to chronic disease care in the following aspects:

(1) In hospital nursing management. Due to the long duration of the disease period, patients with chronic diseases often suffer from repeated illness and persistent symptoms, and the serious patients will also be affected by a variety of chronic disease complications for an extended period of time resulting in the chronic patients and their caregivers need to bear heavy financial, physical and mental burdens. With the help of the diagnosis, treatment, and management of chronic diseases in the hospital has the characteristics of strong pertinence and obvious effect, which is of great significance to reduce the risk of adverse outcomes of patients with chronic diseases. Suzanne et al. (2018) designed and implemented a chronic disease continuing education needs assessment combining qualitative research (45-minute semi-structured interview) and quantitative research (15-minute questionnaire survey) on 234 stakeholders from four provinces in Canada, aiming to seek the maximization of the comprehensive balance of the interests of all parties, objective to explore and analyze the root causes and potential solutions of the gap between the sub optimal experience areas of patients with chronic asthma in hospital disease care (Suzanne et al.， 2018). The results of this chronic disease nursing research identified five sub optimal areas of in-hospital nursing for patients with long-term asthma, and targeted and in-depth analysis of the main reasons for the existing obstacles in this field. At the same time, it provided a strong empirical and effective basis for improving the continuing medical education of chronic disease specialty in the future nursing team, Therefore, it is more conducive to make full use of the limited nursing resources in the medical and health system to improve and provide better quality nursing services for patients with asthma.

(2) In the field of nursing, stakeholder theory has been used as a new management tool, which can play a key guiding role in the diagnosis and treatment of patients with chronic diseases. Based on the stakeholder theory, nursing professionals began to respect the feelings and opinions of various stakeholders, so as to realize the multi-stakeholder participation in disease diagnosis and treatment decision-making, accelerate collaboration and promote the benign outcome of patients' health cure, and continuously improve the efficiency of chronic disease nursing in hospital.

(3) In the family rehabilitation caring of community patients. The application of stakeholder theory to the community family nursing and patient rehabilitation management of patients with chronic diseases has helped effectively exert the functions of the community medical care system (Carello et al., 2018). By focusing on the allocation of nurses and patients in the coordination of community family nursing resources, observing, analyzing and affirming the rationality of the conflict between the needs of various stakeholders, and through in-depth interviews with all parties, it clarified the different interest demands of various stakeholders: Patients with chronic diseases seek high-quality medical care services, and the staff responsible for the care of patients with chronic diseases in the community need to be reasonably assigned While the management of medical institutions responsible for community nursing tasks hopes to reduce relevant expenditure costs. Based on the stakeholder theory, in-depth analysis and comprehensive coordination, a mathematical model can be constructed to deal with the problem of nurse patient resource allocation in community family nursing, and further study the correlation and interaction between the objectives and demands of stakeholders through multi standard optimization. The results of this study show that the application of this model not only solves the potential conflict of interest in nurse patient resource matching, but also reduces the daily burden of community family caregivers, and promotes the optimization and improvement of community family nursing mode. It can be seen that the application of stakeholder theory can form an all-round and multi-level comprehensive stakeholder network, which has important reference value for the accurate decision-making of the matching of chronic disease nursing resources in community and family.

(4) The end-stage palliative care of patients. Palliative care nursing can improve patients' perception of end-stage disease symptoms and improve the quality of life before death through the implementation of a comprehensive assessment of the physical condition of patients at the end of the disease, with the help of a multidisciplinary diagnosis and treatment cooperation model. Relevant studies have confirmed that effective palliative care services can significantly improve the physical and mental burden of patients with end-stage symptoms of the disease, moderately relieve patients' own depression, significantly shorten the time of patients' prolonged hospitalization due to fear, and thus improve the quality of life of patients with end-stage disease (Clement et al., 2016; Kavalieratos et al., 2014). Relevant scholars applied the stakeholder theory to the practice of community family palliative care services, which not only effectively expanded the scope of nursing services provided, but also further promoted the improvement of nursing services. Bone et al. (2016) aimed to assess the unmet needs in home palliative care for terminally ill patients and decision-making in treatment plans. Aiming at the

unmet needs in the service, through qualitative research, they collect feedback from stakeholders of home-based palliative care services for terminally ill patients in communities, so as to integrate the views of various interest groups, and summarize the advantages and challenges faced by the current family palliative care services for patients with terminal illness. The study showed that the five strengths and challenges in the care of end-stage palliative patients were finally refined.

To sum up, the stakeholder theory has been widely applied to the nursing work for chronic diseases, and has helped clinical staff achieve remarkable results in this filed.

2.5 Conclusion of literature review

2.5.1 Hospital grade accreditation is of great significance for hospital grading management

2.5.1.1 Significance for management

(1) Health administration department

In March 2013, the Ministry of Health of the People's Republic of China (PRC) changed its name to the National Health and Family Planning Commission (NHFPC) of the PRC, but its main functions and responsibilities have not changed, that is, to fully protect people's health, deepen the health system reform, and improve the infrastructure of public health. First, under the socialist market economy, the reform and expansion of public hospitals in China have developed rapidly, and some hospitals lack a clear grasp of the direction of public welfare. The non-profit and welfare nature has been weakened, and the goals of some hospital employees, hospital managers and public hospitals conflict with each other. Through the hospital grade accreditation system, the national health administration department can evaluate the functional positioning, medical hardware and software facilities, and comprehensive management ability of each public hospital. Hospital grade accreditation is the decisive factor and the only way for major hospitals to determine their own grade. Through hospital grade accreditation, the national health administration department can judge the specific medical technology level of each hospital. From the macro perspective, it is conducive to the management of many hospitals in China by the Chinese Health Administration Department, realize hierarchical management, and implement the functions and tasks of medical institutions at all levels. Thus, scientific medical and health system reform measures were formulated, and the relevant reform spirits and requirements for public hospitals were integrated into the terms and standards of hospital grade

accreditation. Secondly, since China has carried out further administrative system reform in recent years, removing the centralization of power, and refining management functions of various departments, so that public hospitals have changed from the previous single management of health administrative departments to higher-level administrative departments that need to be connected more professionally. Relevant government administrative departments are responsible for the management of medical and health care, scientific research projects, medical insurance expense settlement, drug safety supervision, teaching quality management, as well as the storage of dangerous goods and chemicals, wastewater, and exhaust emissions. It is also a powerful control measure issued by the health administrative department to further strengthen the management of medical and health business and administrative functions of hospitals at all levels.

(2) Medical institutions

The participating hospitals are the objects of hospital accreditation evaluation, and the evaluation results are closely related to the hospital's own interests. For example, it represents better medical conditions, technologies and services, and indicates a broader development platform, higher medical project charging standards, more advanced hospital construction and equipment purchase, better scientific research project resources. Therefore, the inspection of hospital medical quality and safety can promote the enhancement of hospital management and service supply level, and promote the attention and investment of local governments in local medical and health undertakings. Secondly, the terms and standards of hospital grade accreditation directly determine the medium and long-term goal planning and development direction of public hospitals in various regions. Hospital evaluation and improvement is a continuous process of two-way promotion and win-win promotion. During the first round of hospital grade accreditation in China, only the results and the standards of hardware facilities were paid attention to at that time, which made many medical institutions overemphasize large and comprehensive in order to strive for excellence. Although to a certain extent, it actually promoted the scientific and standardized management of medical institutions, and the infrastructure construction and appearance of hospitals were greatly improved, some potential problems were also found, which have led to formalism and fraud in a few hospitals.

Therefore, in the new round of hospital grade accreditation in China, more attention will be paid to the management of hospital medical quality and safety and the control of the whole medical operation process, with the emphasis on improving the standards. This is aimed at improving the quality of medical services, but also with the aim of implementing the rational use and standardized management of modern medical facilities and equipment. In this new

round of hospital grade accreditation in China, the most important thing is to strengthen the safety of medical services.

2.5.1.2 Significance of service

Based on the needs of the people for medical and health care in the past, the evaluation direction and standards based on the first round of hospital accreditation review in China mainly focuses on the scale and hardware facilities of the participating medical institutions, so as to indirectly protect the rights and interests of patients and ensure the medical quality and safety during medical treatment. The new round of hospital grade accreditation system in China takes the purpose of "patient-centered" as the core guideline, and the system standards are always run through the evaluation process. It includes the hospital's obligation to protect the legitimate rights and interests of medical service objects, implement the quality, comfort, service, order, and consistency of medical service supply, and respect the personality of medical service objects. The specific connotation of attention mainly covers: (1) Create a good and comfortable medical environment for patients and providing warm and thoughtful hospital services. (2) Enhance the convenience and consistency of medical service supply, such as the procedures of liquid transfer and ward transfer of medical staff, timely and carefully respond to the changes of patients' condition during hospitalization, intra hospital referral, inter hospital transfer and even death, and clarify the rights of patients while protecting the legitimate rights and interests of patients. (3) Respect the national customs and the right to freedom of religious belief of all patients, and all medical staff can strictly abide by the rules of safeguarding the rights of patients, and use easy to understand words to help patients understand their own condition in the process of receiving patients. (4) Strengthen the safety in the hospital treatment environment, such as avoiding further infection aggravation or acquiring new infection for infected patients with sudden situation or disease change.

In addition, the new round of hospital grade accreditation in China also included indicators such as patient satisfaction evaluation and social evaluation of medical institutions as key contents in the assessment scope. The inclusion of patients' satisfaction evaluation of the hospital into the review criteria shows that the new round of hospital grade accreditation gradually pays more attention to patients, which is conducive to helping patients enjoy more efficient, higher-quality and safer medical services.

2.5.2 The significance of applying stakeholder theory to hospital grade accreditation

In reality, medical institutions around the world are similar to enterprises. They also have their own clear vision, development plans and goals, and carry out corresponding management activities around their own vision, plans and goals. At present, in the operation of Chinese hospitals, the president responsibility system is mostly implemented in the business administration of hospitals. Some hospital heads often hope to highlight and show their management ability by increasing the number of hospital beds and improving the hospital level during their tenure in order to pursue their personal achievements and career promotion (W. P. Li & Zhou, 2005). However, from another perspective, this might not have a positive effect on hospitals' long-term development. The rapid and blind expansion will bring huge pressure to the hospital management of medical quality and safety. There may even be adverse effects. If stakeholders can participate in the evaluation of hospital medical quality and safety management, they will stand in the perspective and position of safeguarding their own legitimate rights and interests, focusing on the sustainable development of hospital medical quality and safety improvement from different angles. In addition, involving stakeholders in the evaluation of hospital medical quality and safety can not only improve the overall quality and safety of hospital services and improve patients' satisfaction, but also, more importantly, enable stakeholders of all parties to have more effective communication and exchanges with the hospital, to better carry out transposition thinking and mutual understanding, which will be conducive to the sustainable development of the hospital. The traditional stakeholder theory refers to the enterprise management activities carried out by the enterprise managers in order to balance the different interests and needs of various stakeholders. In the context of hospital management and evaluation, this involves balancing various interests among stakeholders in the hospital, returning to the original intention of hospital vision, development, and planning to the "people-oriented and patient-centered" principle. Only with the help of scientific and standardized hospital management, we can continuously improve hospital medical quality and safety, so as to enhance the level of medical technology and ability of the hospital itself. In this case, we can truly provide patients with safer, higher-quality and more efficient medical services, and achieve the goal of making patients feel confident and satisfied with the medical services provided by the hospital they visited. Finally, the hospital can continue to survive and move in the direction of benign development. For a long time, hospital grade accreditation has been regarded as a long-term management mechanism to promote the improvement of hospital medical quality and safety (Zhong et al., 2015). The acceptance of hospital grade accreditation

by participating hospitals is a kind of hospital management activity to promote the overall improvement of their medical service quality management, so that the needs of all stakeholders are met and satisfied. Therefore, the broad definition of stakeholders involves all individuals and groups that can affect the achievement of an enterprise's goals, or that can be affected by the enterprise's process of achieving the goals. According to that, it can be deduced that the stakeholders of medical institutions participating in the accreditation should include the organizations, institutions and individuals that affect the accreditation and enjoy the dividend of medical quality and service improvement of medical institutions. So the hospital grade accreditation experts evaluating whether the hospital's medical quality and safety goals are achieved or not are obviously the stakeholders who affect the realization of the hospital's goals, and the administrators and patients in the hospital are the individuals and groups that can be affected by the process of achieving the goals after the hospital's participation in the grade accreditation, that is, the stakeholders that help realize the continuous improvement of the hospital's medical quality and safety. The application of this stakeholder theory to the hospital grade accreditation, which can continuously improve the medical quality and safety of hospitals, is to explore how to better carry out the hospital grade accreditation to satisfy all stakeholders of the hospital, so that the medical quality and safety of the hospital can get a real boost. This is a question that China's medical system has always been thinking about.

2.5.3 An integrated study of legitimacy, OL theory and hospital grade accreditation is required

The development of medical and health institutions in China has entered a new stage over time, and the development and reform of hospitals are facing infinite opportunities and challenges. How should hospitals learn the lessons of history and how can hospital managers grasp the cutting-edge direction of hospital operation and development to maintain a leading position in the highly competitive medical service market? Implementing the hospital grade accreditation system through the common theoretical model of stakeholders is a feasible choice to balance the interests of all parties, and strive to actively coordinate and communicate with stakeholders such as health administrative authorities, medical staff, patients and families. On the premise of balancing the interests of administrative departments and hospital staff, to ensure that patients can enjoy more cost-effective medical services to the maximum extent, it is conducive to the integration of interests and public welfare value, and to maximizing economic and social benefits. Fundamentally speaking, the hospital grade accreditation promotes the team building of hospitals, improves hospital management and constructs the modern hospital management

system under the new situation, to stimulate reform through evaluation, promote construction through evaluation, and integrate evaluation and construction. Based on the comprehensive definition and management of the stakeholders of the public hospital grade accreditation, we aim to promote the public hospitals to better adapt to the changes of social environment, establish a comprehensive and high-quality management among all hospital staff, and realize the all-round development of China's medical cause.

Although the importance of legitimacy and OL status has been recognized, there are relatively little research that combine institutional theory with hospital management from the perspective of stakeholders, and there is mainly independent research on each state. It can be predicted that the future research of deepening hospital management will not only develop towards the fine-grained direction of its various dimensions, but also towards the comprehensive direction of studying the interaction between organizational background and organizational experience and their joint impact on hospital development. To maintain conservatism with a certain degree of flexibility, hospitals must have stable daily norms and norms that break the routine, standardize institutionalized management and processes to eliminate conflicts of interest, and fully take into account the interests of stakeholders. Then hospitals will be able to not only learn from their own successes or failures, but also from the experiences of their peers and competitors, to ensure continuous innovation.

Based on the dilemma of research on hospital grade accreditation in China, this study uses institutional theory as the basis and applying the "legitimacy" and "OL" theoretical mechanisms to break through the barriers of stakeholder segmentation. It explores how hospital grade accreditation can achieve integration in the environment of institutional change, so that the integration process of evaluation not only needs legitimacy, but also seeks OL. The theoretical basis of legitimacy and OL provides an important driving force for grade accreditation from the perspective of stakeholders. Similar to the function of a protective umbrella, it avoids extreme efficiency determinism and protects organizations from immediate punishment due to changes in technical performance. This undoubtedly has a practical significance for the deepening reform and long-term development of the entire healthcare service field.

Chapter 3: The Identification of Core Stakeholders of Hospital Grade Accreditation

The implementation of hospital grade accreditation cannot be achieved over night as stakeholders who affect or are affected by hospital grade accreditation are in large numbers. Therefore, to carry out hospital grade accreditation, it is necessary to take the feelings and demands of stakeholders, especially core stakeholders, into consideration. In order to deeply understand whether hospital grade accreditation can really enhance the medical quality and safety of hospitals, this thesis attempts to focus on the core stakeholders of hospital grade accreditation. Starting from the most influential core stakeholders, this thesis explains the influence of hospital grade accreditation on their condition and the changes in their roles after accreditation. At present, the existing literature mainly centers on hospital stakeholders' identification, but rarely on the identification of stakeholders, especially core stakeholders, in hospital grade accreditation. Therefore, exploring the sustainable development of hospital grade accreditation from the perspective of core stakeholders is of great significance.

3.1 Determination of stakeholders in hospital grade accreditation

Hospital grade accreditation refers to the evaluation of the medical hardware and software quality of a healthcare institution by a third-party authoritative organization other than the hospital itself, so as to correctly evaluate whether the healthcare institution meets the standards of medical quality and medical safety systems. Therefore, stakeholders in hospital grade accreditation refer to individuals and groups, who have specific interests in the hospital accreditation and can basically affect the realization of the evaluation goals, or those who are influential during the hospital accreditation process.

Chinese and foreign scholars have classified stakeholders from multiple perspectives, and the multidimensional subdivision of stakeholders has deepened people's understanding of the stakeholder theory. Mitchell believes that stakeholders can be divided and graded according to three attributes: power (whether a group has the status, ability, and corresponding means to influence organizational decisions), legitimacy (whether a group is endowed with legal, moral, or specific claims to the organization), and urgency (whether a group's demands can

immediately draw the attention of the organization's management). Then, according to the score, it is determined whether an individual or group is a stakeholder of the organization, and what type of stakeholder it is. The Mitchell scoring method has become the most commonly used method for stakeholder classification due to its strong operability.

3.1.1 Research process

There are many stakeholders in hospital grade accreditation, involving multiple industries and organizations. This study uses methods such as literature research, brainstorming, and the Delphi method to classify stakeholders in the review of public hospitals. Firstly, the literature research method was used to retrieve 82 Chinese and international literature related to hospital grade accreditation in recent years in databases such as PubMed, Medline, and China National Knowledge Infrastructure (CNKI), and the possible stakeholders of hospital grade accreditation were predicted through literature reading. Then, a roundtable meeting was held with senior personnel from the G Provincial Center of Hospital Management, Evaluation and Quality Control, who are familiar with hospital grade accreditation. The brainstorming method was used to select the candidates for stakeholders among the possible stakeholders predicted in the literature research.

Through the brainstorming and literature research, a list of candidates for stakeholders in hospital grade accreditation was determined, and then the Delphi method was used to design and make the expert consultation evaluation form (see Annex A and B) for stakeholders in hospital grade accreditation for a two-round consultation. The Mitchell Stakeholder Theory includes two important factors: stakeholder identification and stakeholder attributes, including legitimacy, power, and urgency.

To ensure the representativeness of the experts, a group of 25 experts were invited from 21 cities of G Province, China, including cadre from government health administrative agencies at or above the prefecture level, administrative staff from administrative departments in tertiary medical institutions, and medical clinical experts with senior professional titles. Expert inclusion criteria: 1. Professional title/position: Administrative experts and medical clinical experts working in hospitals are required to have senior titles, cadre working in government agencies are required to have positions at or above the deputy division level; 2. Work experience: More than 10 years of work experience in the medical industry; 3. Experts must be familiar with hospital grade accreditation and stakeholders (Annex C). (1) The first round of consultation: All members of the expert group never met each other and the survey was respectively conducted in the written form. In the first-round survey, experts were asked to

evaluate and classify the candidates for stakeholders in hospital grade accreditation based on the dimensions of legitimacy, power, and urgency. A 5-point scale is used. A score of 5 represents the strongest level of legitimacy, power, or urgency, a score of 4 represents the second strongest level, and a score of 0 represents the weakest level. Besides, the experts were also informed that the candidate list was not fixed and it could be added. (2) The second round of consultation: the opinions of the experts from the first-round survey were compiled and analyzed, and candidates who did not meet the inclusion criteria were excluded. The second-round questionnaire was prepared based on the results, and the experts were asked to judge whether the stakeholder candidate with the highest frequency of selection is identified as a definitive stakeholder. These stakeholders possess all three attributes: legitimacy, power, and urgency. Legitimacy refers to whether a group is endowed with legal, moral, or specific claims to hospitals. Power refers to whether a group has the status, ability, and corresponding means to influence hospital decisions. Urgency refers to whether a group's demands can immediately draw the attention of hospital management.

3.1.2 Research results

In the Delphi scoring process, the background of the experts was fully considered, including age, education level, professional title, years of experience working in the major professional field, and familiarity with public hospitals in China. The basic information, combined with the results of the questionnaire survey, reflects the experts' level of participation, authority in the field, concentration of opinions, and coordination of opinions. Among the 25 experts who participated in the consultation, eight were officials of health administrative agencies, ten were hospital administrators and seven were medical expert consultants. Their age ranges from 35 to 55 years old, 76.56% of them have a postgraduate degree, and 90.23% have a deputy senior professional title, and on average they have worked in hospital management for 26.44 years and are familiar with hospital grade accreditation system and stakeholder theory. They have rich theoretical and practical experience in hospital management, ensuring the professionalism and representativeness of the consulting experts.

3.1.2.1 Level of participation

The level of participation of experts can represent their attention to and attitude towards the research subject of the consultation survey, which can be reflected through the feedback of the collected consultation forms distributed to the experts. According to literature research, in general, when the recovery rate of the consultation forms is over 50%, the collected opinions

can be used for result analysis. If the recovery rate exceeds 60%, it indicates a good level of participation and if it exceeds 70%, it indicates a very good level of participation. In this study, a total of 25 relevant experts were invited to participate in the consultation. The recovery rate for the first round of consultation was 88%, and the second round had a 100% recovery rate. The recovery rates meet statistical requirements. However, in both rounds of consultations, experts did not propose additional candidates.

Table 3.1 Experts' level of participation in two rounds of consultation

Round	The number of distributed consultation forms	The number of recovered consultation forms	Recovery rate
The first round	25	22	88%
The second round	25	25	100%

3.1.2.2 Authority in the field

The authority of experts is determined by their judgment basis (Ca) for stakeholders and their familiarity (Cs) with hospital grade accreditation. The calculation formula is: (Ca + Cs) / 2 = (Cr). The judgment basis for stakeholders is based on the expert's own perception, consultation with peers, analysis of literature reports, and practical experience, with weight coefficients of 0.2, 0.4, 0.6, and 0.8 respectively. The familiarity with public hospital grade accreditation is described as: very unfamiliar, unfamiliar, moderately familiar, familiar, and very familiar, with weight coefficients of 0.0, 0.25, 0.50, 0.75, and 1.0 respectively. The experts' authority in the field of the two rounds of surveys is shown in Table 3.2.

Table 3.2 Experts' authority in the field

Results	Familiarity (Ca)	Judgement (Cs)	Authority coefficient (Cr)
The first round	0.84	0.68	0.76
The second round	0.88	0.76	0.82

3.1.2.3 Concentration of opinions

The concentration of expert opinions on the stakeholders of public hospitals is represented by the average scores given by the experts in terms of the dimensions of power, legitimacy, and urgency. The calculation formula for the arithmetic mean is:

$$Mj = \frac{1}{mj} \bullet \sum_{i=1}^{mj} Cij (j = 1,2,\ldots..n) \tag{3.1}$$

Among this, m*j* represents the number of experts participating in the evaluation of stakeholder j, and C*ij* represents the score given by expert i to stakeholder j. The larger the arithmetic mean obtained by a stakeholder in a certain dimension is, the higher grade the stakeholder holds in that dimension.

Through two rounds of Delphi expert consultations, the main stakeholders in public hospital grade accreditation were determined, including reviewed hospitals, review experts, patients and their families, hospital medical staff, health administration authorities, government departments, pharmaceutical and medical suppliers, schools, media, blood stations, technology management departments, social work entities, industry associations, private medical institutions, and ecological environment, totaling 16 categories. The results of the concentration of expert opinions in the first round are shown in Table 3.3.

Table 3.3 Results of the first round of expert review of stakeholders in hospital grade accreditation

No.	Candidates for stakeholders	Supporters (%)	Power	Legitimacy	Urgency
1	Reviewed hospitals	22 (100%)	4.23	4.25	3.89
2	Review experts	22 (100%)	3.85	4.58	3.42
3	Patients and their families	22 (100%)	3.21	4.05	4.25
4	Hospital medical staff	21 (95%)	4.36	4.06	3.96
5	Hospital managers	21 (95%)	4.01	3.87	3.59
6	Health administration authorities	21 (95%)	3.52	3.63	2.60
7	Government departments	20 (91%)	3.61	3.85	2.57
8	Pharmaceutical and medical suppliers	18 (82%)	2.86	2.74	2.59
9	Schools	18 (82%)	1.90	2.63	2.79
10	Media	17 (77%)	2.65	2.26	3.54
11	Blood stations	17 (77%)	2.02	1.89	2.57
12	Technology management departments	16 (73%)	2.48	2.06	1.80
13	The public	14 (64%)	2.19	1.83	2.07
14	Industry associations	14 (64%)	2.37	2.41	2.56
15	Private medical institutions	14 (64%)	1.95	2.44	2.53
16	Ecological environment	12 (50%)	2.08	1.91	2.78
17	Consumer protection associations	10 (45%)	1.80	1.51	1.54
18	Medical and educational institutions	10 (45%)	1.75	1.81	1.99

Candidates who did not meet the inclusion criteria were excluded and the stakeholders who were included went through a second-round evaluation. The results of the concentration of expert opinions in the second round are shown in Table 3.4.

Table 3.4 Results of the second round of expert review of stakeholders in hospital grade accreditation

No.	Candidates for stakeholders	Supporters (%)	Power	Legitimacy	Urgency
1	Reviewed hospitals	25（100%）	4.85	4.76	4.09
2	Review experts	25（100%）	4.88	4.05	4.13
3	Patients and their families	25（100%）	4.01	4.27	4.16
4	Hospital medical staff	25（100%）	4.06	4.11	4.59
5	Hospital managers	25（100%）	4.32	4.17	4.79
6	Health administration authorities	23（92%）	3.55	3.39	2.28
7	Government departments	22（88%）	3.14	3.20	2.07
8	The public	22（88%）	3.11	2.05	2.07
9	Pharmaceutical and medical suppliers	21（84%）	2.91	2.77	2.35
10	Schools	21（84%）	2.95	2.73	2.71
11	Media	21（84%）	2.15	2.39	2.74
12	Blood stations	17（68%）	1.68	1.77	1.79
13	Technology management departments	17（68%）	2.08	2.55	1.83
14	Industry associations	16（64%）	2.37	2.71	2.46
15	Private medical institutions	15（60%）	1.85	2.40	2.53
16	Ecological environment	15（60%）	1.92	1.61	2.77

The results of the second round of expert evaluations showed a high acceptance rate of 100% for reviewed hospitals, review experts, patients and their families, hospital medical staff, and hospital management staff. However, there was a lower level of support for blood stations, technology management departments, industry associations, private medical institutions, and the ecological environment.

3.1.2.4 Degree of opinion coordination

The degree of opinion coordination reflects the extent of disagreement among experts in their ratings of stakeholders in the three dimensions (power, legitimacy, and urgency). It is represented by the coordination coefficient W, which ranges from 0 to 1. A higher value of W indicates a better level of coordination among expert ratings of stakeholders. Generally, after 2 rounds of consultation, the value of W fluctuates around 0.5. The calculated coordination coefficients for the two rounds of expert consultation on stakeholders in public hospitals are 0.398 and 0.642, respectively. This indicates an improvement in the consistency of expert opinions during the second round of consultation, with clear differentiation in stakeholder ratings.

A non-parametric chi-square test was conducted on the scores given by experts, χ^2 = 1086.95, P < 0.01, indicating that the coordination coefficients are statistically significant. This suggests a high level of consistency in expert ratings, and the results can be used.

3.2 Classification of stakeholders in hospital grade accreditation

Drawing on the Mitchell scoring method, the results of the second round of expert ratings on stakeholders of public hospitals were analyzed from the perspectives of power, legitimacy, and urgency.

3.2.1 Perspective of power

From the perspective of power, if experts score stakeholders in hospital grade accreditation with 3 points or above, it indicates that they have a strong influence on hospital grade accreditation in terms of their position, ability, and means. The stakeholders with a significant influence on hospital grade accreditation are review experts (scored as 4.88 from the perspective of power), reviewed hospitals (scored as 4.85 from the perspective of power), hospital management staff (scored as 4.32 from the perspective of power), hospital medical staff (scored as 4.06 from the perspective of power), patients and their families (scored as 4.01 from the perspective of power), health administration authorities (scored as 3.15 from the perspective of power power), government departments (scored as 3.14 from the perspective of power), and the public (scored as 3.11 from the perspective of power).

If experts give stakeholders in hospital grade accreditation with scores between 2 and 3 from the perspective of power, it indicates that they have a moderate level of influence on hospital grade accreditation in terms of their position, ability, and means. The stakeholders with a moderate level of influence on hospital grade accreditation are pharmaceutical and medical suppliers (a score of 2.91 from the perspective of power), industry associations (a score of 2.37 from the perspective of power), media (a score of 2.15 from the perspective of power), technology management departments (a score of 2.08 from the perspective of power), and schools (a score of 2.02 from the perspective of power).

If experts gave stakeholders in hospital grade accreditation with scores below 2 from the perspective of power, it indicates that they have a weak influence on hospital grade accreditation in terms of their position, ability, and means. The stakeholders with relatively weak power are the ecological environment (a score of 1.92 from the perspective of power),

private medical institutions (a score of 1.85 from the perspective of power), and blood stations (a score of 1.68 from the perspective of power).

Table 3.5 The results of the three-dimensional scoring of stakeholders in hospital grade accreditation

Stakeholders in hospital grade accreditation	Power	Legitimacy	Urgency	Comprehensive correlation degree
Reviewed hospitals	4.85	4.76	4.09	4.57
Hospital managers	4.32	4.17	4.79	4.43
Review experts	4.88	4.05	4.13	4.35
Hospital medical staff	4.06	4.11	4.59	4.25
Patients and their families	4.01	4.27	4.16	4.15
Health administration authorities	3.15	2.99	2.28	2.81
Government departments	3.14	2.93	2.07	2.71
Pharmaceutical and medical suppliers	2.91	2.77	2.35	2.68
Industry associations	2.37	2.71	2.46	2.51
Schools	2.02	2.73	2.71	2.49
Media	2.15	2.39	2.74	2.43
The public	3.11	2.05	2.07	2.41
Private medical institutions	1.85	2.40	2.53	2.26
Technology management departments	2.08	2.55	1.83	2.15
Ecological environment	1.92	1.61	1.78	1.77
Blood stations	1.68	1.77	1.79	1.75

3.2.2 Perspective of legitimacy

The results of ratings from the perspective of legitimacy show that the stakeholders with strong legitimacy in hospital grade accreditation are reviewed hospitals (a score of 4.76 from the perspective of legitimacy), patients and their families (a score of 4.27 from the perspective of legitimacy), hospital management staff (a score of 4.17 from the perspective of legitimacy), hospital medical staff (a score of 4.11 from the perspective of legitimacy), and review experts (a score of 4.05 from the perspective of legitimacy). All the ratings for these stakeholders from the perspective of legitimacy are above 3.

The stakeholders with a moderate level of influence from the perspective of legitimacy in hospital grade accreditation are health administration authorities (a score of 2.99 from the perspective of legitimacy), government departments (a score of 2.93 from the perspective of legitimacy), pharmaceutical and medical suppliers (a score of 2.77 from the perspective of legitimacy), schools (a score of 2.73 from the perspective of legitimacy), industry associations (a score of 2.71 from the perspective of legitimacy), technology management departments (a score of 2.55 from the perspective of legitimacy), private medical institutions (a score of 2.40 from the perspective of legitimacy), media (a score of 2.39 from the perspective of legitimacy),

the public (a score of 2.05 from the perspective of legitimacy). The ratings for these stakeholders from the perspective of legitimacy are all between 2 and 3.

The stakeholders with relatively weak legitimacy in hospital grade accreditation are blood stations (a score of 1.77 from the perspective of legitimacy) and ecological environment (a score of 1.61 from the perspective of legitimacy). The ratings for these stakeholders from the perspective of legitimacy are below 2.

3.2.3 Perspective of urgency

The results of ratings from the perspective of urgency show that the stakeholders with a strong sense of urgency in hospital grade accreditation are hospital management staff (a score of 4.79 from the perspective of urgency), hospital medical staff (a score of 4.59 from the perspective of urgency), patients and their families (a score of 4.16 from the perspective of urgency), review experts (a score of 4.13 from the perspective of urgency), and reviewed hospitals (a score of 4.09 from the perspective of urgency). All the ratings from experts for these stakeholders from the perspective of urgency are above 3.

The stakeholders with a moderate level of influence from the perspective of urgency in hospital grade accreditation are media (a score of 2.74 from the perspective of urgency), schools (a score of 2.71 from the perspective of urgency), private medical institutions (a score of 2.53 from the perspective of urgency), industry associations (a score of 2.46 from the perspective of urgency), pharmaceutical and medical suppliers (a score of 2.35 from the perspective of urgency), health administration authorities (a score of 2.28 from the perspective of urgency), government departments (a score of 2.07 from the perspective of urgency), and the public (a score of 2.07 from the perspective of urgency). The ratings for these stakeholders from the perspective of urgency are between 2 and 3.

The stakeholders with relatively weak urgency in hospital grade accreditation are technology management departments (a score of 1.83 from the perspective of urgency), blood stations (a score of 1.79 from the perspective of urgency), and ecological environment (a score of 1.78 from the perspective of urgency). The ratings for these stakeholders from the perspective of urgency are below 2.

3.2.4 Comprehensive correlation degree of stakeholders in hospital grade accreditation

The comprehensive correlation of stakeholders (PX) is the average score of stakeholders in hospital grade accreditation in terms of power, legitimacy, and urgency. This indicator is used

to validate the previous research results on the classification of stakeholders in hospital grade accreditation. The calculation formula is:

$$PXi = \frac{1}{3}\sum_{i=1}^{3} Vij \quad (3.2)$$

Where PXi indicates the comprehensive correlation of the i-th (i = 1, 2, 3, ..., 16) stakeholder in hospital grade accreditation, and Vij indicates the score of the stakeholder in the j-th (j = 1, 2, 3) dimension. Details of the calculation results are shown in Table 3.5.

The results of the comprehensive correlation of stakeholders are classified based on the scores: a score above 3 is categorized as the most relevant stakeholder group, a score between 2 and 3 is categorized as a moderately relevant stakeholder group, and a score below 2 is categorized as a weak relevant stakeholder group. The results show that reviewed hospitals, hospital managers, review experts, hospital medical staff, and patients and their families have average comprehensive correlation scores above 3 and can be included in the most relevant stakeholder group. Health administration authorities, government departments, pharmaceutical and medical suppliers, industry associations, schools, media, the public, private medical institutions, and technology management departments have average comprehensive correlation scores between 2 and 3 and can be included in the moderately relevant stakeholder group. Blood stations and ecological environment have comprehensive correlation scores below 2 and can be included in the weak relevant stakeholder group. This result aligns with the previous conclusion of categorizing stakeholders in hospital grade accreditation into core stakeholders, potential stakeholders, and marginal stakeholders from the perspectives of power, legitimacy, and urgency.

3.2.5 Classification of stakeholders in public hospitals

Based on the expert ratings of stakeholders from the perspectives of power, legitimacy, and urgency, stakeholders in hospital grade accreditation can be classified into core stakeholders, potential stakeholders, and marginal stakeholders. The results are shown in Table 3.6.

Table 3.6 The results of the three-dimensional classification of stakeholders in hospital grade accreditation

Dimension	> 3	2-3	< 2
Power	Review experts, reviewed hospitals, hospital managers, hospital medical staff, patients and their families, health administration authorities, government departments, the public	Pharmaceutical and medical suppliers, industry associations, media, technology management departments, schools	Ecological environment, private medical institutions, blood stations

Legitimacy	Reviewed hospitals, patients and their families, hospital managers, hospital medical staff, review experts	Health administration authorities, government departments, pharmaceutical and medical suppliers, schools, industry associations, technology management departments, private medical institutions, media, the public	Blood stations, ecological environment
Urgency	Hospital managers, hospital medical staff, patients and their families, review experts, reviewed hospitals	Media, schools, private medical institutions, industry associations, pharmaceutical and medical suppliers, health administration authorities, government departments, the public	Technology management departments, blood stations, ecological environment

3.2.5.1 Core stakeholders

These stakeholders have scores of 3 or above in at least two dimensions and are integral to the hospital grade accreditation process. They are closely linked to the public hospital grade accreditation and can directly influence the evaluation process. The core stakeholders in hospital grade accreditation include reviewed hospitals, hospital managers, review experts, hospital medical staff, and patients and their families.

3.2.5.2 Potential stakeholders

These stakeholders have scores ranging from 2 to 3 in at least two dimensions and they are moderately linked to hospital grade accreditation. Their interests should be given attention in the review process. Potential stakeholders in hospital grade accreditation include health administration authorities, government departments, pharmaceutical and medical suppliers, schools, media, the public, technology management departments, industry associations, and private medical institutions.

3.2.5.3 Marginal stakeholders

These stakeholders have scores below 2 in at least two dimensions and have a relatively weak relationship with hospital grade accreditation. They passively receive the impact of the review process, and they are paid relatively little attention. Marginal stakeholders in hospital grade accreditation include blood stations and the ecological environment.

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Chapter 4: The Influence of Hospital Grade Accreditation from the Perspective of Core Stakeholders

Chapter 3 has already explained that core stakeholders in hospital grade accreditation include reviewed hospitals, hospital managers, hospital medical staff, patients and their families, and review experts. In this chapter, descriptive case study method and participatory observation method are used and hospital grade accreditation system in G Province is selected as the research object. The researchers have participated in the grade accreditation of hospitals in G Province for a long time, and directly observed the changes of hospitals before and after the accreditation, including business guidance, pre-evaluation and formal accreditation. At the same time, semi-structured interviews were conducted in the hospital for these five groups of stakeholders, and relevant data of the hospital's grade accreditation will be collected to have a deeper understanding of the hospital's situation. Based on the case study, the analysis of interview data and participatory observation records and from the perspective of stakeholders, this thesis summarizes the main impacts of hospital grade accreditation on hospital performance, and explains the impact results, aiming to understand the relationship between hospital grade accreditation and hospital performance.

4.1 Methodology and process of the case study

4.1.1 Connotation of case study

What is a case? Robert Stake defined that a case "can be a child, a child's classroom, or an event, a happening [...] It is one among many [...] It is a bounded system (Lincoln, 2005)." Then, what is a bounded system? According to H. L. Lu and Li (2007), as well as Y. J. Peng and Jiang (2010), the "bounded" refers to the distinction between a case and other cases and their different environment, and the "system" refers to the relatively integrated research unit composed of the case and its various components. According to the definition, it is clear that a case is related to its context.

What is a case study? Platt (1992) defined a case study as a logical set of research designs. What does "a logical set of research designs" mean? Robert. et al. (2010) interpreted it as follows. Firstly, a case study is an empirical research method, typically conducted in a real-

world context, focused on investigating phenomena as they unfold. This method is particularly suited to situations where the boundaries between the subject of the study and its context are blurred or inseparable. Secondly, the logic of a case study also entails adherence to specific research procedures and techniques. This includes specific data collection and analysis techniques, as well as the principle of triangulation.

The case study method originated from social and anthropological research in the early 20th century. Malinowski, an anthropologist and sociologist, pioneered this method through his research on the indigenous people on Pacific Islands. Subsequently, this method was widely adopted in the field of sociology. By the mid-20th century, case studies began to be applied in the field of management, Leading to significant theoretical contributions such as Patterns of Industrial Bureaucracy by Gouldner (1954), Strategy and Structure: Chapters in the History of the American Industrial Enterprise by Qian (2002), and the theory of national innovation system of Nelson (1993). Since 2007, the Journal of Management World has co-hosted the China Qualitative Research Forum on Business Management annually with the School of Business of Renmin University of China, making the rapid development of case study methods in China.

There are some differences in the academic community regarding the classification of case studies. K. M. Eisenhardt (1989) categorized case studies based on research objectives into three types: descriptive, theory-building, and theory-testing case. X. P. Chen (2008) classified case studies into descriptive, exploratory, and casual case studies. From the perspective of the number of cases, case studies are divided into single case studies and multiple case studies.

4.1.2 Reason for using the case study method

The case study method is suitable when the research question involves “how” and “why” (Robert. et al., 2010). K. M. Eisenhardt and Graebner (2007) suggest that the legitimacy of using the case study method should be articulated before its implementation. The rationale for employing the case study method in this research is multi-faceted:

From the standpoint of research paradigms, the case study method is particularly well-suited for process research. It is the most commonly utilized method in this domain. Process research typically deals with subjects that are highly complex, dynamic, and nonlinear, attributes that align well with the strengths of case studies. On one hand, the strengths of case study lie in “understanding the dynamic process in a certain single context” (P. Li et al., 2012), enabling a rich and thorough description of phenomena. On the other hand, case study is well-suited for longitudinal, process-oriented research, often yielding results that are both unexpected and credible.

The case study method is suitable for Research issues within the Chinese context. Both Chinese and foreign scholars are increasingly focusing on how to conduct "indigenous Chinese management research" and develop "Chinese-style management theories" (Tsui, 2006). In this study, topics such as public hospital grade accreditation and hospital reform are localized issues with distinct Chinese characteristics, Making the case study method and ideal approach to highlight these local contexts (Robert. et al., 2010).

From the perspective of research purposes, the case study method is suitable for theoretical research. Theory is the core of management research (K. M. Eisenhardt, 1989), and one of the important advantages of case studies is its potential for theory development (Pan, 2016).

This study analyzes the effects of the hospital grade accreditation system from the perspective of stakeholders. To date, no scholars have conducted research on hospital grade accreditation in China, which lends an exploratory nature to this study. Moreover, the study of hospital grade accreditation in G Province is a representative and exemplary case, making the application of the case study method necessary.

In terms of research quality, the case study method helps to enhance the quality of research. Good academic study should be interesting and practical (Eden & Rynes, 2003), and case study is often considered the "most interesting research" and has practical value due to its proximity to reality (Bartunek, 2006).

4.1.3 Reason for adopting a single case study

The single case study method focuses on in-depth exploration of phenomena, understanding the case background, and conducting thorough analysis. Each case is a typical and representative system in itself; despite the small number of cases, they are significant. Therefore, when selecting cases, emphasis is placed on their extremity and potential for insight, to uncover unique research opportunities. Single case studies provide a comprehensive depiction of real situations, crafting engaging stories and enhancing the reader's immersion and understanding (B. G. Glaser et al., 1968). A single case is more effective in highlighting specific phenomena, illustrating the process of events, and revealing underlying relationships and patterns, thereby establishing a holistic theoretical framework (K. M. Eisenhardt & Graebner, 2007). At the same time, the social environment and specific system in which the case is situated provide a basis for developing theories and the potential of exploring the overall research by examining the relationships between different parts of the system and the larger system background.

In this study, the innovative institutions, processes, and current state of the tertiary hospitals in G Province under a new model are taken as the case. The G Provincial Center for Hospital

Management, Evaluation, and Quality Control conducts a multi-faceted analysis and summary of the current evaluation of tertiary medical institutions. This study is representative and typical, necessitating the application of the single case study method.

4.2 Case background

The hospital grade accreditation system in China has its origins in healthcare system reforms and the country's focus on medical quality and safety. Since 2009, China has undergone a series of healthcare reforms aimed at improving the quality and efficiency of healthcare services, strengthening the management of doctors and hospitals, and improving the patient experience. The Chinese government places great importance on medical quality and safety, dedicating itself to safeguarding patients' rights and health. Hospital grade accreditation has thus emerged as an important management tool for promoting ongoing improvements in medical quality. With varying levels of medical services across different hospitals in China, where some excel in equipment, technology, personnel, and services, while others face some problems and challenges. Hospital grade accreditation can help identify the level of service provided by hospitals and improve the efficiency of medical resource allocation. The aim of this system is to foster higher standards in medical service quality, streamline resource distribution, and ensure superior medical care.

As one of the most economically developed provinces in China, G province has seen substantial growth in the healthcare sector. The adoption of new technologies and equipment, advancements in medical quality, and progression in healthcare standards are pivotal issues in the medical sector. The implementation of the hospital grade accreditation system in G province is tailored to the development needs of the healthcare sector, driving improvements in medical quality and safety, and accentuating hospital standards and service capabilities, thereby catalyzing further growth in the healthcare sector in G Province. The objective of this system is to is to improve the quality, efficiency, and sustainable development capability of medical services in G Province, so as to provide better medical security for the residents of G Province.

4.2.1 Hospital grade accreditation work in G provincial hospital

The smooth progress of the hospital evaluation work is a prerequisite for ensuring the improvement of medical quality and safety in the participating hospitals. As of October 2020, the G Provincial Hospital Management Evaluation and Quality Control Center had undertaken 72 review and evaluation tasks for tertiary grade A hospitals in G Province. This included 24

instances of professional guidance (on-site counseling), 22 pre-accreditations, and 26 formal reviews (shown in Table 4.1). The distribution of the 26 hospitals that underwent formal accreditation across different cities is shown in Table 4.2. The increase in professional guidance sessions from 2018 to 2020, as compared to the same period in previous years, indicates a growing recognition of the G Provincial Hospital Management Evaluation and Quality Control Center's role in advising medical institutions. The expertise and scientific approach of the assessment experts have been acknowledged. The fact that the number of hospitals undergoing formal reviews matches the number of those successfully passing the reviews suggests that tertiary grade A hospitals in G Province have a thorough understanding of the review requirements. They are generally able to make necessary improvements and operate in compliance with relevant standards.

Table 4.1 Summary of tertiary grade A hospitals conducted review (from April 2018 to October 2020)

Year	Professional guidance	Pre-accreditation	Formal accreditation	Total
2018	2	6	9	17
2019	13	12	9	34
2020	9	4	8	21
Total	24	22	26	72

Among the 26 hospitals that have passed the formal accreditation, 23 hospitals passed the assessment at the second review and 3 passed at the first review. Their regional distribution is shown in Table 4.2.

Table 4.2 Regional distribution of hospitals passing formal accreditation

City	Number of hospitals	Passed the first review	Passed the second review
Guangzhou	12	1	11
Shenzhen	3	0	3
Huizhou	3	0	3
Dongguan	2	0	2
Qingyuan	1	0	1
Heyuan	1	0	1
Zhuhai	1	1	0
Chaozhou	1	0	1
Shanwei	1	1	0
Foshan	1	0	1
Total	26	3	23

4.2.2 Self-assessment results of the hospital grade accreditation and opinions from experts

The 2011 Version of the accreditation standards for tertiary grade A hospitals comprises 637 clauses, including 48 core clauses. The assessment is conducted across five levels: A (excellent), B (good), C (qualified), D (unqualified), and E (not applicable), each with specific scoring criteria. Both pre-accreditation and formal accreditation Involve expert guidance on identified issues. Table 4.3 shows the comparison of the results of self-assessment and expert review

(based on a sample of 18 tertiary grade A hospitals that have passed self-assessment, pre-accreditation and formal review). The number of A-grade clauses in the hospitals' self-assessments significantly exceeds those in the expert reviews. The difference in B-grade clauses is not significant, but there is an increase from self-assessment to formal review. The number of C and D-grade clauses in self-assessment is less than that in expert reviews. On average, two clauses are not evaluated in the self-assessment, indicating that some of the hospitals cannot fully understand the clauses. However, all clauses are covered in the expert review. To a certain extent, it reflects that the experts have reached the standardization requirements in terms of professionalism and homogeneity. The standardized score of the self-assessment is 74.27, while the standardized score of pre-accreditation and formal accreditation are 59.81 and 64.96. The result of ANOVA showed significant differences between self-assessment, pre-accreditation and formal accreditation ($p=0.031<0.05$). As illustrated in Figure 4.1, the self-assessment results are mainly concentrated in A and B grades, while the expert review results are mainly concentrated in B and C grades. In summary, the overall self-assessment results are better than the results of expert review.

Table 4.3 Comparison of self-assessment results and expert review opinions (n=18)

	A	B	C	D	E	No comment	Scoring terms	Standardized scores	P
Self-Assessment	255	248	103	6	23	2	635	74.27	0.031
Pre-accreditation	137	244	212	19	25	0	637	59.81	
Formal accreditation	151	292	158	12	24	0	637	64.96	

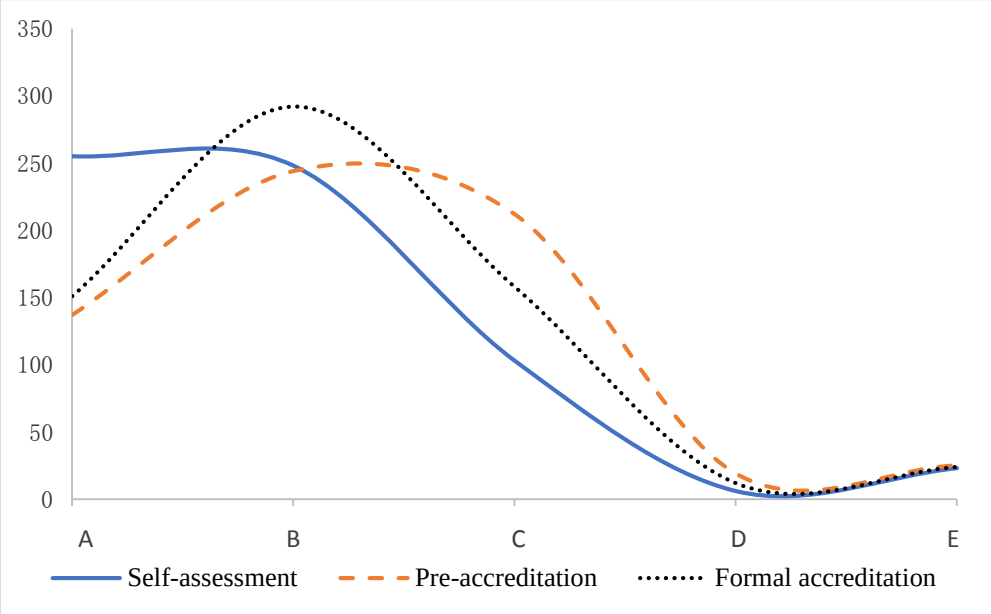

Figure 4.1 Distribution of self-assessment and expert review results (n=18)

4.2.3 Analysis of the main problematic clauses in hospital grade accreditation

An analysis of the non-compliant clauses in the 26 hospitals that have passed the formal review allows for an approximate identification of the issues and shortcomings in hospital management, medical quality, and safety among tertiary grade A hospitals in G Province. Statistically, these 26 hospitals had a total of 176 non-compliant clauses with 303 occurrences during the formal review stage. The hospital with the fewest non-compliant clauses had only 1, while the one with the most had 28; on average, there were 12 non-compliant clauses per hospital, with a median of 10.

Table 4.4 presents the top 10 most frequently non-compliant clauses. Notably, clauses 6.6.2.2 from Management Group 2, “Implementation of the Chief Accountant System”, failed 15 times, indicating a widespread lack of adoption of this system in the financial management of tertiary grade A hospitals in G Province. The medical quality and safety management of the department of pathology is also at great risk. The failed result occurred for 11 times in 4.17.6.9, “There is a system to ensure the standardization and accuracy of pathological diagnosis of postmortem examinations”, and occurred 5 times in 4.17.5.2, “Support lower-level hospitals to solve pathology diagnosis problems”. There is considerable scope for improvement in the establishment and standardization of nosocomial infection departments. The absence of any failed clause from Medical Group 1 in the top 10 suggests that these hospitals generally did not have major problems in the areas covered by this group.

Table 4.4 Top 10 failed clauses in formal review

Clause Code	Content	Frequency	Group
6.6.2.2	The hospital implements the chief accountant system	15	Management Group 2
4.17.6.9	There is a system to ensure the standardization and accuracy of pathological diagnosis of postmortem examinations	11	Medical Group 2
4.10.2.1	Departments of nosocomial infection are set up according to the relevant regulations. The building regulations, medical equipment, facilities, and staff should meet the relevant national regulations	8	Nosocomial Infection Group
4.17.5.2	Support lower-level hospitals to solve pathology diagnosis problems	5	Medical Group 2
4.13.1.1	Hospitals and physicians implementing pain therapy need to have the medical subjects and physician qualifications specified by health regulators. The scope of pain therapy services is clearly defined	4	Pharmacy Group

4.13.5.1	There is a quality and safety management team or a certain person responsible for quality and safety management in the department	4	Pharmacy Group
4.26.3.3	Laboratories for internal examination should use appropriate quality control methods and check the performance of equipment	4	Nosocomial Infection Group
5.2.3.1	Reasonably allocate human resources according to the characteristics of inpatients, the proportion of nursing levels, and the utilization rate of beds	4	Nursing Group
6.8.6.2	Rational use of video surveillance resources	4	Management Group 2
6.11.3.1	Establish a quality control system and database for social review to ensure the objectivity and impartiality of social review results	4	Management Group 2

The frequencies of all the non-compliant clauses were categorized according to the seven review groups, and their percentage distribution is illustrated in in Figure 4.2. According to the figure, Medical Group 1 had the smallest proportion of non-compliance, less than 5%, while Medical Group 2 had the highest, nearly 20%. Analyzing the content of both groups, it is evident that there are significant risks in medical quality and safety in departments like anesthesiology, pathology, and radiology. This is probably because the hospitals are paying more attention to the medical quality and operation of outpatient and inpatient clinical departments, while neglecting these auxiliary ones. The frequency of non-conforming terms in Management Group 1 and Management Group 2 has the same proportion and is at a high level. This indicates a long-standing tendency in G provincial tertiary grade A hospitals to prioritize medical treatment over management. This area, which has significant potential for improvement, requires future attention.

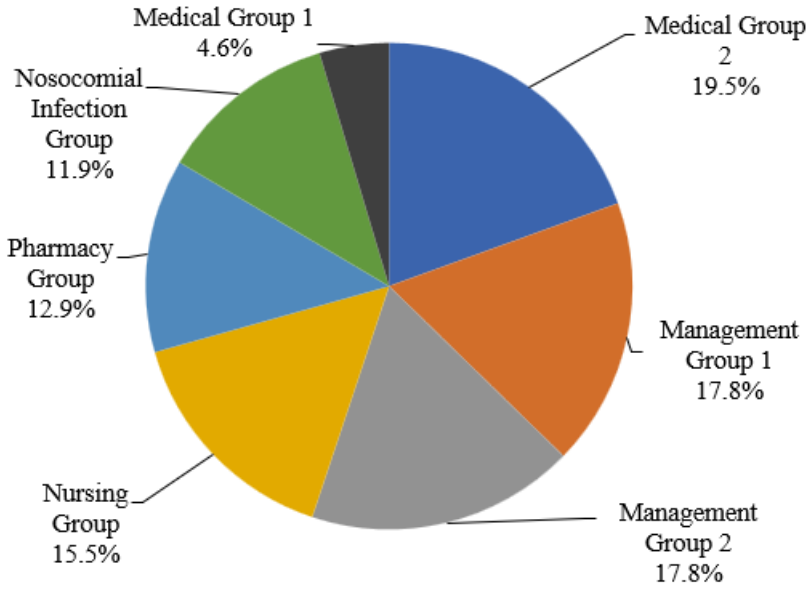

Figure 4.2 Frequency distribution of the occurrence of failed clause

4.3 Participatory observation

4.3.1 Application of participatory observation research

Participatory observation research is an important qualitative research method (Fine & Torre, 2004). Compared with other methods, it can provide more in-depth and comprehensive research data (Musante & DeWalt, 2010).

Since 2018, the author has participated in the hospital grade accreditation carried out by G Provincial Center for Hospital Management, Accreditation and Quality Control and also participated in various aspects of the accreditation for many times, including the hospital guidance in the early stage of the review, the preparatory work of the accreditation, and the formal accreditation. In this process, the author not only observed the performance of each subject, but also had in-depth exchanges with hospital administrators and medical staff to solve problems together. This experience enables the author to truly understand the specific situation of the hospital's participation in the accreditation.

At the same time, the author also visited a number of tertiary grade-A hospitals on the spot for many times and participated in some of their medical work, including medical care and work related to medical technology in the wards. In the process, the author had in-depth communication with the medical staff to understand their working attitude and views. This is of great help to understand the internal operation mechanism of the hospital and the attitude of the medical staff towards participating in the accreditation.

Long-term participation and in-depth experience help the author establish a deep trust relationship with research objects. It provides a strong guarantee for the follow-up interview. What's more, the author also played the role of both participant and observer, and was able to record first-hand research materials.

Through the process of participatory observation, the author took a lot of notes. They mainly include: records of the performance and attitude changes of hospital managers in different accreditation stages, the enthusiasm of medical staff to participating in the accreditation process and their views on problems, the cooperation among various departments within the hospital, some details of patients' medical experience, hospital culture and working atmosphere, etc. These first-hand materials provide rich reference for the follow-up research. All the notes were classified, catalogued and analyzed together with other data to support the research conclusions.

4.3.2 Access to participatory observation data

Hospital grade accreditation involves internal management and medical quality of hospitals. They are highly confidential and crucial for studying the impact mechanism of hospital grade accreditation. Through long-term participation in the accreditation work, the author has obtained first-hand internal information, such as hospital self-evaluation report and expert review report, which is of great significance to the research. These materials reflect the real situation of the hospital, and are of great reference value to the research. It is possible to communicate with hospital administrators and medical staff at any time to understand their real thoughts, which is difficult to obtain through other means. The author has participated in and observed the daily work in the hospital on the spot, learning the hospital culture and internal operation mechanism, which is of great significance for understanding the motivation of hospital participating in the accreditation. The author can also follow up the later improvement of the hospital at any time, understand the long-term impact of the accreditation on the hospital, and establish a long-term trust relationship with the hospital, which is conducive to further follow-up research.

Through participating in the research, the author obtained the rare first-hand internal information, which is of great help to have in-depth study the impact of the hospital grade accreditation system, which is also an advantage that is difficult to be replaced by other methods.

4.4 Semi-structured interview

4.4.1 Introduction of semi-structured interview methods

Semi-structured interview is a commonly used interview method for qualitative research (Braun & Clarke, 2006). Compared with unstructured interview, semi-structured interview designs a more detailed outline before the interview. The outline of the interview contains topics and questions related to the research question. The outline does not need to be in order, nor does it need to be worded in a certain way. The outline design needs to take the research questions and purpose into consideration, and propose thematic questions, follow-up questions, and in-depth questions. Thematic questions are used to guide the interview, follow-up questions are used to delve into the topic, and in-depth questions are used to get more information (Braun & Clarke, 2006). The interview process allows the interviewer to ask questions based on the outline, but it also allows the interviewer to ask new questions based on the interviewee’s answers. This

differs from the stricter outline of structured interviews. The interviewer needs to follow up on the subject's answers and ask in-depth questions to get more information. Interviewees are free to answer according to the questions, and are not restricted by a strict order. However, the answers need to be centered around the topic. Interviewees can also take the initiative to raise new insights and questions. In addition to notes, the entire process needs to be recorded or videotaped so that it can be sorted out and analyzed afterwards. Semi-structured interview is relatively flexible and interviewers can adjust the questions in time according to the answer of interviewees, so the information collected is richer and more comprehensive. This is an effective method commonly used in qualitative research (Kallio et al., 2016).

4.4.2 Selection and implementation of interviewees

In order to collect valuable research materials, the author used semi-structured interviews. An interview typically consists of a well-designed organizational structure consisting of main questions, tracking questions, and probing questions. The main issues need to be designed in advance to ensure that all major parts of the research problem can be included; Tracking questions explore the interviewee's explanations of the topics, concepts, and events they have mentioned; Exploratory questions can help us manage conversations, grasp the progress of the conversation, keep the conversation centered around the topic, and suggest to the interviewee the level of depth we need (Hasanpour et al., 2022). Therefore, when preparing the interview outline, we only need to list the possible main questions, which are transformed and decomposed from research questions, and can guide the interviewee to answer the information needed for the research.

This study conducted a total of 33 interviews from June 2020 to October 2022. The details are as follows: There were 10 interviews with accreditation experts scheduled for June 2020, October 2021, and August 2022, with each interview lasting an average of 30 minutes. Medical staff were interviewed 12 times, with sessions arranged for August 2020, March 2021, and October 2022, each lasting an average of 25 minutes. Hospital administrators were interviewed 11 times, with sessions scheduled for October 2020, July 2021, and September 2022, each also averaging 25 minutes. All interviews were conducted using a semi-structured format. Interviewees were asked to respond to outlined questions, with interviewers allowed to ask follow-up questions for more in-depth information as needed. To ensure the quality of the interviews, all sessions were recorded and noted in real-time. After the interviews, the researcher organized and summarized the interview records, incorporating key information into the case study database.

The interview outline of this paper takes the stakeholder perspective and relevant theories as clues, and guides the communication between interviewers and interviewees through a series of questions. The questions and topics in the outline can be adapted and modified to suit the respondent's background and research purpose. At the same time, it is suggested to provide more specific definitions and explanations in the interview to ensure that both sides of the interview have the same understanding of the relevant theories. The details are as follows:

Table 4.5 Interview outline

Subjects	Questions
Interview topics for Evaluation experts	1. What do you know about the accreditation system of the hospital grade accreditation in G Province? What do you know about the impact of this accreditation system on hospital medical quality and safety? 2. What is your role in the hospital rating system? As a stakeholder, do you think there is room for improvement in the hospital grade accreditation in G Province? 3. Do you think the accreditation process of the accreditation system of the hospital grade accreditation in G Province is transparent and fair enough? How do you think to strengthen the continuous improvement of the long-term mechanism of hospital accreditation?
Interview topics for Evaluation hospital medical staff	1. As a medical staff of the hospital, would you please talk about your views on the hospital grade accreditation? 2. What are the effects or changes of hospital grade accreditation on the medicine, teaching, scientific research and other aspects of your hospital? 3. Do you have any suggestions for the hospital grade accreditation?
Interview topics for Evaluation hospital administration staff	1. As the administration staff of the hospital who has passed the hospital grade accreditation, would you please tell me your opinion on the hospital grade evaluation? 2. What are the effects or changes of the hospital grade accreditation on the management of your hospital? 3. Do you have any suggestions for the hospital grade accreditation?

Table 4.6 Interview record

Interviewee	Interview Time	Main Content
Reviewer A	June 2020	Introducing the history and purpose of hospital grade accreditation system, and sharing his own experience in the accreditation process.
Reviewer B	June 2020	Explaining the meanings and requirements of various accreditation indicators in detail and presenting a case of a tertiary hospital.
Reviewer C	June 2020	Introducing his work in organizing accreditation teams and arranging accreditation, and discussing methods to ensure fairness.
Reviewer D	October 2021	Comparing the accreditation results of a hospital in 2018 and 2019, and pointing out that the hospital needs

		improvement in medical quality management and other aspects.
Reviewer E	October 2021	Giving advice on operating room management of a hospital and sharing excellent experiences for reference.
Reviewer F	October 2021	Analyzing the effectiveness of hospital grade accreditation in improving medical quality and service over the past few years.
Reviewer G	August 2022	Evaluating the medical quality management system of a hospital and pointing out the areas that need to be strengthened.
Reviewer H	August 2022	Introducing new requirements for the next accreditation to hospital managers and suggesting that the hospital prepare in advance.
Reviewer I	August 2022	Sharing some hospital accreditation models from abroad and putting forward experiences that can be learned to enhance the credibility of the accreditation.
Reviewer J	August 2022	Predicting that hospital grade accreditation will place greater emphasis on medical safety and patient experience, and that the accreditation will use more quantitative indicators.
Medical staff A	August 2020	Hospital grade accreditation has put forward higher requirements, promoting the optimization of diagnosis and treatment processes and equipment management, and effectively improving medical quality
Medical staff B	August 2020	Hospital grade accreditation can identify deficiencies in medical procedures and help hospitals identify areas for improvement which is very helpful for improving medical quality and safety.
Medical staff C	August 2020	Hospital grade accreditation has prompted hospitals to strengthen the training of medical personnel, improve their clinical skills and services, thus boosting medical quality.
Medical staff D	March 2021	Hospital grade accreditation has raised higher standards and promoted the establishment of a more comprehensive quality management system, which is important for improving medical quality and safety.
Medical staff E	March 2021	Hospital grade accreditation can identify problems, and hospitals can improve overall level by sharing experiences in conferences.
Medical staff F	March 2021	Hospital grade accreditation is conducive to promoting continuous learning and improvement in the hospital, and helpful in enhancing personal professional capabilities.
Medical staff G	March 2021	Hospital grade accreditation has put forward higher requirements, and medical personnel need to continuously learn and improve, which is conducive to improving medical quality.
Medical staff H	March 2021	Hospital grade accreditation is conducive to promoting the establishment of a sound quality management system in hospitals, which is important for ensuring medical quality and safety.
Medical staff I	October 2022	Hospital grade accreditation serves as guidance for hospitals to optimize medical processes, which is very helpful for improving medical quality.

Medical staff J	October 2022	Hospital grade accreditation has put forward higher requirements, and medical personnel need to continuously learn and improve their professional skills, thus improving medical quality.
Medical staff K	October 2022	Hospital grade accreditation can encourage hospitals to strengthen the training of medical personnel, which is beneficial for improving their clinical skills and service quality.
Medical staff L	October 2022	Hospital grade accreditation has promoted the optimization of diagnosis and treatment process management in hospitals, which is important for improving medical quality.
Hospital Manager A	October 2020	Through Hospital grade accreditation, we have learned that there are deficiencies in certain management aspects of the hospital. Based on the accreditation result, the hospital has timely adjusted and improved relevant systems, effectively enhancing the hospital's management level.
Hospital Manager B	October 2020	There are problems in the construction of the hospital's training system, and the hospital has strengthened internal training based on the accreditation, which has significantly improved the professional ability of medical personnel.
Hospital Manager C	October 2020	Hospital grade accreditation has put forward higher requirements, which prompts hospitals to actively carry out internal reforms and optimize management processes, thus improving hospital performance.
Hospital Manager D	October 2020	The hospital had hidden dangers in a certain work, and timely remedial measures have been taken based on the accreditation, effectively improving the work quality.
Hospital Manager E	July 2021	Through hospital grade accreditation, we have learned from excellent practices of other hospitals on the same issue, and the hospital has effectively improved its management model.
Hospital Manager F	July 2021	Hospital grade accreditation guided the hospital to identify its own shortcomings, and the hospital carried out internal reforms based on the accreditation, significantly improving the overall management level.
Hospital Manager G	July 2021	Hospital grade accreditation has proposed higher standards, encouraging hospitals to actively optimize various work processes and effectively improving the quality of various operations.
Hospital Manager H	September 2022	The hospital has adjusted and improved its medical quality management system based on the accreditation results, which is conducive to improving the efficiency of daily quality management.
Hospital Manager I	September 2022	The hospital has optimized some work processes and significantly improved the efficiency of related operations.
Hospital Manager J	September 2022	Hospital grade accreditation encourages hospitals to actively carry out internal reforms and continuously optimize various tasks, thus improving overall operational level.

Hospital Manager K	September 2022	Hospital grade accreditation has improved medical quality management system, promoting daily quality management.

4.5 Data collection and analysis

4.5.1 Data collection methods

This thesis collects information mainly through the following three channels: First, conduct multiple in-depth interviews with various stakeholders of hospital grade accreditation, including experts, hospital administrators, medical staff and patients, and the interview contents were recorded in the whole process; Second, collect all kinds of hospital grade accreditation documents and materials; Third, collect various statistical reports including business guidance, pre-accreditation and formal accreditation to form triangular verification.

We began the research in 2018 and conducted multiple investigations and studies on the hospital grade accreditation system. Finally, considering the research purpose of this study and the logic of theoretical sampling, the hospital grade accreditation system in G Province was selected for the study. The reasons for choosing this case are as follows:

First, the availability of data. The hospital grade accreditation system in G Province has a complete institutional framework, and we are members of the G Provincial Hospital Administration Evaluation and Quality Control Center, which allows for easy access to detailed data records and ensures the availability of data.

Second, long-term tracking research. We have been involved in the G Provincial Hospital Administration Evaluation and Quality Control Center since 2018 and have participated in numerous evaluations, including 24 instances of professional guidance, 22 instances of pre-accreditation reviews, and 26 instances of formal accreditation. In total, there have been 72 evaluation and assessment activities. This extensive involvement provides an in-depth understanding of the hospital grade accreditation system of G Province and lays the foundation for the quality of this study.

4.5.2 Result analysis methods

(1) Case study. This study selected hospital grade accreditation in G Province as the case. After understanding the overall accreditation situation, we analyzed the performance of interviewees after participating in the grade accreditation, such as self-assessment results, expert review results and major nonconformity problems. In addition, literature was reviewed to summarize

the possible effects of the hospital grade accreditation, such as the improvement of medical quality and management. The analysis results of the case hospitals were linked with the theoretical impact to determine which aspects were affected, such as medical quality, and multi department collaboration. Finally, based on interviews with hospital managers and medical staff, the thesis further demonstrates the impact of hospital grade accreditation from the perspective of core stakeholders.

(2) Participatory observation. In addition to case studies, this study also adopts the method of participatory observation to collect data. Researchers have been involved in the hospital grade accreditation in G Province for a long time, and observed the changes of hospitals before and after the accreditation by participating in the whole process, such as business guidance, pre-accreditation, and formal accreditation. At the same time, the author also participated in the follow-up improvement work of the hospital to understand how the hospital absorbs the review opinions and continuously optimizes. This provided first-hand participatory data for the study. Participatory observation can supplement the information that is difficult to obtain by other methods, such as discussions in hospital internal meetings and the daily work attitude of medical staff. Such information is very important for understanding the motivation and impact of hospital participation in accreditation. Through long-term participation, the author has developed a deep relationship of trust with hospitals, which is conducive to obtaining real and reliable research data. Participatory observation is an important data source for this study, which is conducive to a comprehensive and in-depth study of the problem.

(3) Interview research. This study interviewed hospital administrators, medical staff and review experts. The interviews were conducted in a semi-structured way, and the interview data were classified and summarized and subject analysis was used to derive conclusions. The interview data were classified and summarized, the main contents related to the research questions were extracted, the contents were marked and classified according to different topic, the relationships among the topics were found out, the arguments and evidence under each topic were summarized, the logical relationships among different topics were analyzed, the possible conclusions were discussed and the possible conclusions were summarized (Appendix D). To sum up, this study uses a variety of materials to demonstrate through the combination of case studies and interview research, which improves the reliability of the research conclusions.

4.6 The influence of hospital grade accreditation on core stakeholders

4.6.1 Analysis of the influence of hospital accreditation on hospital managers

From the perspective of hospital administrative staff, this study aims to understand and analyze the impact of hospital grade accreditation. It focuses on the perceptions and related issues of directors or department heads of medical institutions in G Province that have passed the hospital grade evaluation, analyzing the views that frequently emerged during the interviews.

4.6.1.1 Multisectoral collaboration is improved

The enduring focus of hospital management is on enhancing medical safety and improving quality of care. However, in practice, these objectives involve numerous departments, and being a high-risk industry, it's often challenging to advance quality and safety initiatives in healthcare. The latest round of hospital accreditation has deviated from the traditional approach of separate medical, nursing, and logistics inspections. Instead, it implements cross-departmental tracking and mutual inspections, blurring the lines between medical treatment, nursing, infection control, and management. This approach underscores the importance of unified and standardized hospital management and multi-departmental collaboration to address complex management issues. The accreditation emphasizes interdepartmental cooperation, ensuring that patients receive consistent services, treatment, and care throughout the hospital, regardless of their location. It also highlights a service model where functional and medical technology departments are geared towards clinical service and patient care. The new round of accreditation focuses on more clearly defining the roles and responsibilities of each department, ensuring that all operations are centered around patient convenience, comfort, and safety.

4.6.1.2 Administrative staff's ability in using quality management tools is promoted

Strengthening hospital quality and safety management necessitates a more stringent accreditation system and enhancing the ability of administrative staff to apply quality management tools, which is an effective strategy for advancing refined hospital management. The accreditation process adopts the Plan-Do-Check-Act (PDCA) management philosophy, focusing on continuous quality improvement. The PDCA cycle represents a procedural, standardized, and scientific approach to management. Hospital managers actively utilize management tools in the context of hospital accreditation, undertaking initiatives such as inviting quality management experts for lectures, presenting and reviewing continuous quality

improvement cases in functional departments, organizing annual exemplary management case selections, and conducting quality control circle competitions. The widespread application of quality management tools like the quality control circle has been achieved through consistent training, learning, and practice, enabling staff in functional departments to proficiently use the PDCA method to continuously enhance quality.

4.6.1.3 Administrative staff's ability in using quality management tools is promoted

The scientific and standardized system is the important foundation of the efficient operation of the hospital, the core key to promote the innovation and development of the hospital, and the fundamental guarantee for the effective landing of the hospital management concept, management thought and management strategy. Therefore, hospital managers pay special attention to the construction of the system.

A sound hospital system can promote public hospitals to form a governance mechanism of mutual coordination, mutual checks and balances, and mutual promotion among decision-making, implementation, and supervision, which promotes the standardization, refinement and scientization of hospital management. On the basis of ensuring the public welfare of the hospital, it can improve the operational efficiency of the hospital and provide higher quality medical services for patients.

A good working mechanism and sound scientific rules and regulations can standardize the behavior of workers, gradually make them develop good behavior habits, stimulate their enthusiasm for work, make them have rules and evidence to follow, allow them to strive in the entrepreneurial atmosphere, constantly improve the technical level, optimize the service means, and improve the service quality, thus improving the core competitiveness of the hospital and establishing an excellent hospital culture brand.

4.6.1.4 The construction of each committee is improved to be fully functional

The specialized management committees of the hospital are the decision-making and control layers of the relevant professional quality and safety management. Effectively giving full play to the functions of the professional management committees is of great significance to improve the quality and safety management of the hospital. In the past, there were some problems in the work of some management committees, such as irregular meetings and discussions and failing to perform the corresponding duties. The new round of hospital accreditation issued detailed rules for the assessment of professional committees, requiring hospital managers to take each committee as a starting point, attend relevant committee meetings every quarter, and assess the committee meetings every quarter, to promote the committees to give full play to their functions.

4.6.1.5 Administrative staff is urged to attach more importance to comprehensively improve hospital's ability in financial management

In China, the continuous advancement of medical and health system reforms emphasizes the importance of scientific and adaptable management in promoting overall hospital development. While comprehensive hospitals primarily focus on clinical medical technology and quality medical care, financial management is a crucial aspect of hospital administration. It permeates every facet of a hospital's operation, from daily fund collection and use, accounting of financial investments in healthcare, managing funds for scientific and educational projects, to resource allocation, asset and bill management, cost control, budgeting, financial planning, and supervision. It ensures the asset safety and efficient operation of the hospital in all aspects. In fact, with the preparation for the accreditation, the hospital financial management has been reshaped and sublimated in the process of continuous improvement. At present, the Implementation Rules of the Evaluation Standards of Tertiary General Hospital (2011 Edition) (hereinafter referred to as the Standards) is used for the implementation, Section 6 of Chapter 6 of which is Financial and Price Management. Except for the parts of price, audit and performance, there are eight items directly related to financial management. It is reported that the item of decision-making mechanism on major economic matters will be included in the core provisions in the new evaluation standards. In the review organization, financial management is divided into the financial logistics group, in which professional financial experts participate in the review. Therefore, financial management is one of the necessary modules in the evaluation of tertiary hospitals, which has an influence on the evaluation results of the whole hospital. Judging from the existing evaluation provisions, the awareness of quality, participation, risk, and continuous improvement are everywhere, and the evaluation standards have high requirements for financial management.

In recent years, the reform of public hospitals has been continuously deepened. By the end of 2017, public hospitals in all cities across China have cancelled the drug price addition (except for pieces of traditional Chinese medicine), and the policy of abolishing the price addition of sanitary materials is being pushed forward. In the face of the new economic situation, there is no way out for hospitals. Hospital managers should constantly sort out the existing systems and processes, strengthen budget management and cost accounting, strengthen the training of compound financial talents, and transform financial work from task-oriented to management-oriented. The hospital accreditation will be taken as an opportunity to enhance the connotation

of financial management and make continuous improvement to adapt to the changing economic environment and better serve the development of the hospital.

4.6.1.6 Administrative staff is urged to regularly assess the functional departments to improve the management

Regular assessments of functional departments by administrative staff play a significant role in enhancing hospital quality and safety management. Therefore, hospital managers need to have specific evaluation plans for these departments, with designated departments responsible for conducting these evaluations. The primary assessment criteria include: (1) Cases of continuous quality improvement in functional departments, evidenced by data indicators and achieving tangible results; (2) Prompt and written feedback on corrective action reports addressing suggestions from the evaluations of functional departments, along with the implementation of these corrective actions; (3) Effective reporting of adverse events, with clinical pathways and the control of multi-drug-resistant bacteria showing real progress; (4) Re-examination and follow-up on standards achieved in initial inspections; (5) the completion of the work plans formulated at the beginning of the year. The undertaking department shall regularly check whether the functional departments fulfill the above work in accordance with the requirements, and give them regular assessment.

4.6.1.7 Hazard vulnerability analysis is conducted to perfect functional departments' performance in emergency drill

According to the relevant provisions of the Implementation Rules of the Evaluation Standards of Tertiary General Hospital (2011 Edition), the hospital should make it clear the main emergencies that need to be dealt with, formulate, and improve all kinds of emergency plans, and improve the rapid response ability of the hospital. The risk of hazard vulnerability should be avoided to ensure the safe operation of the hospital and the safety of patients. Hazard vulnerability analysis is an important tool to evaluate and prevent disasters, which helps to transform disaster rescue and post-disaster disposal to pre-disaster prevention and early warning. Hospital managers carry out hazard vulnerability analysis, identify the major emergencies that the hospital needs to deal with and the coping strategies, urge relevant departments to formulate response plans, and carry out emergency drills to improve their emergency handling capacity. To promote hospitals' emergency handling capacity of all kinds of emergencies, the functional administrators, in accordance with the requirements of hospital accreditation, urge departments to formulate and report annual plans for all kinds of emergency drills, participate in some drills in person, and supervise and summarize the completion of the drills every quarter. The

personnel of various functional departments have made considerable progress from dealing with things randomly to seriously preparing for drills, whose ability of emergency handling has been gradually improved.

4.6.1.8 Repeatedly strengthen training and standardize behavior habits

The hospital accreditation is not the end point of hospital development, but a new starting point. By accepting the inspection and guidance of national accreditation experts, the hospitals under trial and all administrative medical staff are deeply aware of the problems and deficiencies in the management work. The administrative management of the hospital repeatedly strengthens the training for the whole staff of the hospital, making them skillfully master the rules and regulations, work process, operating norms, required knowledge and skills, and all kinds of guidelines to strictly implement the standards and develop good working habits. Further efforts are also made to study the methods of handling problems, make clear the direction and goal of joint efforts, learn, and explore the application of scientific quality management tools, constantly improve work quality and service quality, and make management more effective, practical, and scientific, so that the tertiary hospital's work is conducted on a daily basis and becomes normalized, and continuous improvement and optimization are made.

4.6.2 Analysis of the influence of hospital accreditation on medical staff

4.6.2.1 Medical diagnosis and treatment behavior are standardized

Hospital accreditation aims to standardize medical treatment practices by implementing key regulations and guidelines, including the Eighteen Medical Core Systems, Clinical Technical Operation Standards, Clinical Diagnosis and Treatment Guidelines, Pharmaceutical Administration Regulations of Medical Institutions, Prescription Management Measures, Guiding Principles for Clinical Application of Antibiotics. In integrating theory with clinical practice, hospitals require medical, technical, and nursing staff to operate under these management systems. Their adherence to duties, standardization of medical record documentation, implementation of perioperative patient assessment and management, medication guidance, and medication safety and rationality are monitored and assessed. The results of these assessments are then fed back to departments for continuous improvement. To ensure quality and safety in hospital services, it's crucial to enhance staff safety education, raise awareness, and implement a system for reporting adverse medical events. Standardized procedures should be established to identify and address potential risks. Departments are expected to self-examine and self-correct, reporting within set deadlines. For departments that

lack thorough analysis, the hospital's academic committee organizes discussions and analyses to ensure effective rectification. These measures aim to safeguard the legal rights and interests of both medical staff and patients.

4.6.2.2 Nursing quality is improved continuously

Nursing work, as an important part of the medical and health cause, is not only the core of hospital work, but also one of the important links to ensure the safety of patients. Therefore, the importance of nursing work in the hospital is self-evident. In the process of accreditation, nursing gets involved in the key issues, mainly including the construction of rules and regulations, the basis of process design, and the implementation of operational norms, especially the core nursing system, which requires nurses to abide by the rules or guidelines of action. Through hospital accreditation, continuous improvements are made in the following aspects of nursing.

(1) Nursing adverse event management. Through accreditation, a nursing adverse event system is established, and the education and training of nurses are strengthened, which makes it necessary to take the initiative to report adverse events. With the establishment of a unified reporting network, nurses are 100% aware of the procedures and contents of the report, and the causes of adverse events are analyzed and discussed regularly and recorded.

(2) Risk assessment management. This involves establishing a comprehensive system for assessing, reporting, managing, and creating plans and procedures for patient falls, including the risk of falling off the bed. This includes conducting risk assessments for patients, proactively informing high-risk patients about the potential for falls, and implementing effective preventative measures to mitigate these risks. Additionally, standards for assessing, reporting, diagnosing, treating, and nursing care for pressure sores must be developed. Nurses are required to be proficient in these operational standards as part of the preventive strategy.

(3) Care for critically ill patients. Establish nursing routine, rescue nursing process, discuss critical cases regularly, make emergency plans and measures, and evaluate critical risks in real time, especially for the assessment and management of pressure sores, falls, falling beds, activities of daily living, pain, and loss.

(4) Key nursing link management. This encompasses the administration of various crucial aspects in nursing care. These include establishing emergency plans and procedures for handling hospital emergencies such as power failures, water outages, fires, and information system breakdowns. Additionally, it involves the preparation and handling of chemotherapeutic drugs and sharp instruments, perioperative management, administration of medication to

patients, blood transfusions, treatments, and specimen collection. There are also established protocols for providing protective care to isolated patients during treatment and nursing.

(5) Nursing rounds. Establish a system for regular nursing rounds and case discussions, as well as a working system for consulting on complex nursing issues. This system aims to address patients' practical problems and ensure the effective implementation of nursing rounds, case discussions, and nursing consultations. Additionally, it involves specifying clear qualification requirements for nursing consultation personnel.

4.6.2.3 Hospital's ability in patient safety management and critical value management comprehensively are improved comprehensively

Patient safety management. Establish a patient identification system, strengthen the bar code management of key departments, and more than two identification methods are used. Handover records are needed in the key patient transfer, such as surgical patient handover, ICU critical patient handover, and emergency patient handover. Correct use of wristband, especially in ICU, CCU, SICU, and RICU. It is best to use PDA scanner to confirm the identity of patients, to ensure the treatment and medication safety of patients.

Critical value management. The medical staff who receive the critical value report shall fully and accurately record the patient identification information, the critical values, and the information of the reporter, and report it to the supervisor or the doctor on duty in time after checking and confirming it according to the process. Doctors should track, dispose, and record in time after receiving the critical value report.

4.6.2.4 The management of clinical blood transfusion is improved

Clinical blood transfusion management is one of the core points in the management and continuous improvement of medical quality and safety. To improve the management level of clinical blood transfusion, medical staff began to take the hospital accreditation as an opportunity to make continuous improvement in some key process nodes, such as blood use evaluation, informed consent, blood application, sample collection, transmission, reception, transfusion compatibility testing, blood storage and distribution, transfusion process monitoring and post-transfusion curative effect evaluation.

The hospital set up a clinical blood use management committee to give full play to the subjective initiative of the committee members, which was responsible for formulating relevant systems and procedures and plans. Further improvement was made in implementing rules and assessment methods of clinical blood use. A clinical transfusion quality inspection team was set up, consisting of the members of the Blood Transfusion Department and the Quality Control

Office. A regular inspection system was also established. The approval systems of routine blood consumption and massive blood transfusion were established for department directors and attending doctors. The Clinical Blood Management Committee trains all the medical and nursing staff and specimen transfusion personnel of the hospital in stages and majors. The training has greatly improved the understanding of medical staff and promoted the clinical science and rational use of blood.

4.6.3 Analysis of the influence of hospital accreditation on patients and their families

4.6.3.1 Hospital is urged to value patient and family's satisfaction

Patient satisfaction refers to the level of satisfaction patients have with the services provided, based on their evaluation after receiving care from a hospital. As hospitals are complex entities with various departments and functions, each patient engages with numerous processes during their care. Every interaction presents an opportunity for improvement based on patient feedback. While hospitals often aspire to enhance service quality, finding the right approach and perspective can be challenging. Patient satisfaction surveys provide an excellent foundation for this. The more comprehensive and wide-ranging these surveys are, the more accurately they can reflect the true opinions of patients. Since hospital accreditation emphasizes the satisfaction of patients and their families, hospitals can utilize data from these surveys to assess patients' subjective satisfaction. This, in turn, allows for scientifically sound and reasonable improvements to be made to the objective conditions of care, management, and service processes, ultimately enhancing the convenience of patients' healthcare experiences.

Simultaneously, the correlation between subjective and objective evaluations aids in guiding hospitals to identify and rectify deficiencies in medical service quality. This improvement process, based on patient satisfaction, encompasses aspects like dietary services, frequency of ward rounds, and doctor-patient communication, thereby facilitating the establishment of a PDCA (Plan-Do-Check-Act) closed-loop management system for continuous quality enhancement. The process of improving medical services in hospital accreditation is ongoing and perpetual. Patient experience data serve as a testament to patient-centered medical services. Satisfaction surveys play a critical role in evaluating and refining processes, clarifying the current state of internal management, conducting in-depth analyses to identify root causes, and determining areas for self-improvement. This involves developing practical measures for systemic improvement and fundamentally resolving issues, thus elevating the level of service management to genuinely prioritize and serve patients' needs.

4.6.3.2 Patient satisfaction is improved

Hospital Z conducted hospital accreditation under the new model in G Province in October 2020. By collecting and comparing patient satisfaction data from August to December 2020, an analysis was conducted to explore the impact of the accreditation on patient satisfaction, as shown in Figure 4.3. The data reveal that patient satisfaction at the hospital exhibited a monthly upward trend during this period. A statistical difference was noted with a correlation coefficient (r) of 0.984 and a p-value of 0.002. Particularly notable was the increase in patient satisfaction from 94.67% to 95.88% between October and December, indicating that the hospital accreditation positively influenced patient satisfaction.

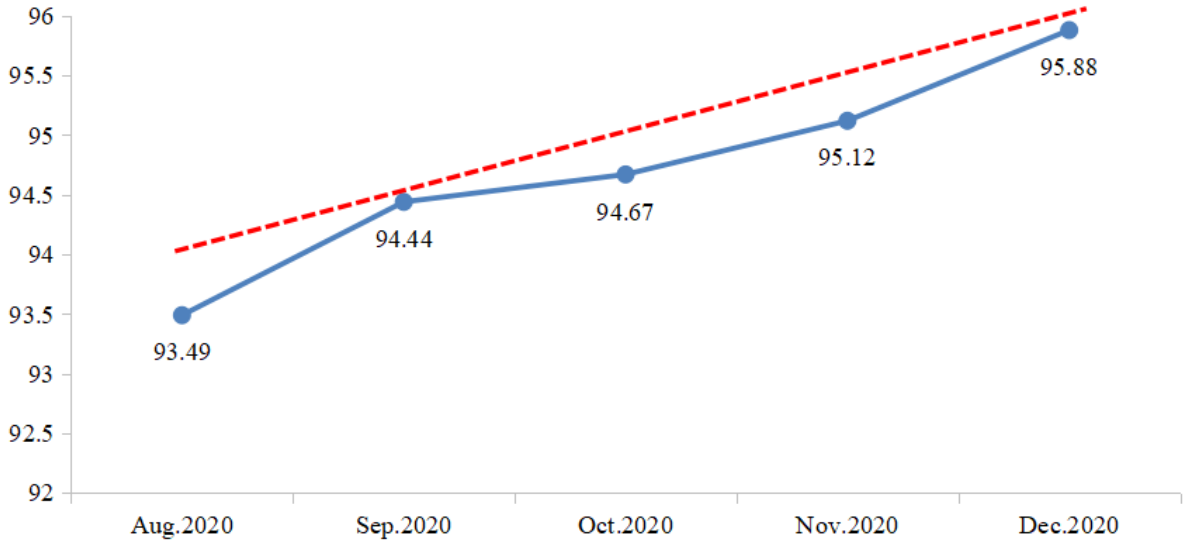

Figure 4.3 The changing trend of patient satisfaction before and after the accreditation of hospital Z

4.6.4 Analysis of the Influence of hospital grade accreditation on reviewed hospitals

4.6.4.1 Medical quality is improved

Hospital X passed the pre-accreditation review for tertiary grade A hospitals in G Province in March 2019 and successfully completed the formal accreditation in June 2019. Now, we have compiled some medical quality indicators of the hospital from March to August 2019 (Table 4.7). Overall, since passing the pre-accreditation review in March, Hospital X has shown a gradual improvement and optimization in terms of medical quality and safety indicators. The specific manifestations are as follows:

(1) The average length of stay for discharged patients has continuously decreased overall. The largest monthly reduction in average length of stay occurred in the months of March and

April following the pre-accreditation review, dropping by 0.51 days. After the formal accreditation, from June to August, it shortened by 0.40 days.

(2) In terms of surgical complications and patient safety indicators, there was an overall decline from March to August. The incidence rate of pressure ulcers in hospitalized patients dropped to zero starting in July. The rate of complications after elective surgery for discharged patients saw a slight increase in May but reached zero in August, indicating a general downward trend. This suggests that the prevention and management of postoperative complications were initially overlooked during the pre-accreditation review, leading the hospital to focus its improvement efforts on other areas and resulting in poor control of this indicator in May. However, this issue was identified during the formal accreditation review, leading to measures being taken for improvement.

(3) The rate of unexpected readmissions to the ICU within 48 hours is one of the quality metrics in critical care medicine. From March to August, this rate consistently remained at zero, indicating the hospital's effective control over this indicator.

(4) Key monitoring indicators for rational medication use in tertiary grade A hospitals include outpatient antibiotic usage and the amount of injectable medication used. At Hospital X, both the prescription amount of outpatient antibiotics and the proportion of injectable medication per hundred outpatient prescriptions have been continuously decreasing for six months starting from March. This trend suggests that the hospital's accreditation process has played a positive role in promoting rational medication use.

(5) Regarding the quality monitoring indicators for hospital infection control, the incidence rate of urinary system infections related to indwelling catheters has been consistently decreasing, dropping from 5.77‰ in March to 0‰ in August. Observing the indicator trends for the three months following both the pre-accreditation and formal accreditation reviews, the incidence rate of ventilator-associated pneumonia fluctuated. However, when analyzed in three-month intervals, this rate was 20.22‰ for March, April, and May, and decreased to 17.90‰ for June, July, and August. Therefore, over a three-month period, there has been a reduction in the incidence rate of ventilator-associated pneumonia.

In summary, hospital accreditation can help hospitals identify risks and gaps in medical quality and safety management and guide them to take measures for improvement. Hospital X's supervision of medical quality and safety did not slacken because of the accreditation process; rather, it continued to make improvements during a certain period. The formal accreditation process has positively contributed to enhancing the medical quality at Hospital X, implying that hospital accreditation plays an active role in improving its medical quality.

Table 4.7 Partial medical quality indicators of hospital X from March to August in 2019

Order	Name of indicators	March	April	May	June	July	August
1	Average inpatient days of discharged patients	8.89	8.38	8.71	8.67	8.53	8.27
2	Incidence of pressure ulcers in hospitalized patients	0.087%	0.031 %	0	0.072 %	0	0
3	Incidence of postoperative complications in discharged patients after elective surgery	0	0	0.07%	0.07%	0.10%	0
4	Unexpected 24/48-hour return rate of ICU-1	0	0	0	0	0	0
5	Number of antimicrobial prescriptions per 100 outpatient prescriptions	20.83%	18.50 %	17.61%	16.47 %	15.65 %	14.60 %
6	Number of injection prescriptions per 100 outpatient prescriptions	4.67%	4.14%	4.09%	3.23%	2.95%	2.87%
7	Incidence of ventilator-associated pneumonia	26.55‰	11.94 ‰	13.67‰	7.33‰	21.94 ‰	9.93‰
8	Incidence of urinary tract infections associated with indwelling catheters	5.77‰	5.81‰	5.03‰	4.98‰	2.30‰	0‰

4.6.4.2 Medical quality is improved

Hospital Y went through the pre-accreditation in September 2019 and the formally one in December 2019. Some medical quality indicators of the hospital from 2016 to the second quarter of 2020 are collected for comparative analysis, to explore the effect of pre-accreditation and formal accreditation on continuous improvement of medical quality and safety.

① Average inpatient days of discharged patients

As can be seen from Figure 4.4, from 2016 to 2020, the average inpatient days in hospital Y showed a decreasing trend year by year. The minimum value appeared in the first quarter of 2019, that is, 7.81 days, 1.30 days shorter than that in 2016. Prior to 2019, the reduction in the average length of stay in the hospital was minimal, but the decline became more significant starting in 2019, indicating that the continuous accreditation processes played a role in shortening the stay. However, there was a rebound in this indicator in the second quarter of 2020, which is attributed to the COVID-19 pandemic. It was found that during the pandemic, patients with mild conditions were reluctant to be hospitalized, leading to a relatively higher vacancy rate of hospital beds compared to previous years. Consequently, the hospital's inpatients were predominantly those with severe conditions. Hospital physicians, faced with fewer patients waiting for admission and less bed occupancy pressure than before, may have

allowed some patients with severe conditions longer hospital stays. This resulted in an extension of the average hospital stay in the first quarter of 2020.

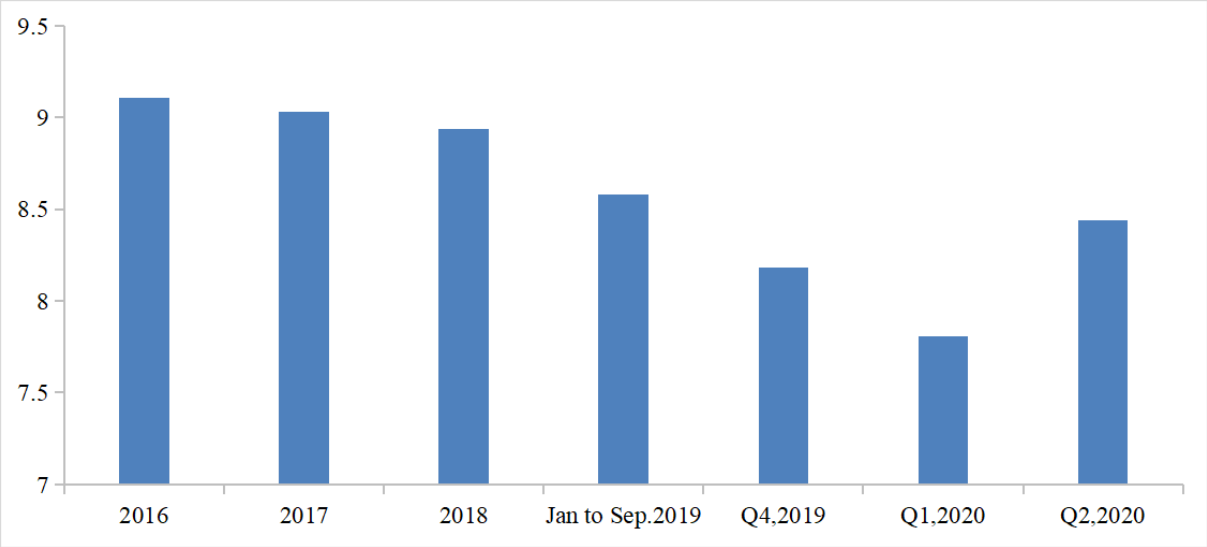

Figure 4.4 Change trend of average inpatient days in hospital Y from 2016 to 2020

② Incidence of pressure ulcers during hospitalization

Table 4.8 shows the incidence of pressure ulcers during hospitalization among patients discharged from hospital Y from 2016 to the second quarter of 2020. Overall, the highest incidence of pressure ulcers was observed from January to September 2019, with the incidence plummeting to 0.029% after the pre-accreditation. After the formal accreditation, it rebounded, but still lower than the level before the pre-accreditation. It indicates that the work of hospital accreditation has reduced the occurrence of pressure ulcers to a certain extent. Then, we further analyze the severity of pressure ulcers. The incidence of Grade I and II pressure ulcers peaked from January to September in 2019, and remained at a low level after the pre-accreditation, while Grade III and IV pressure ulcers never occurred since the pre-evaluation.

Table 4 8 Incidence of pressure ulcers among patients discharged from hospital Y during the Q2 of 2013 to 2017 (%)

Year	Total	Grade I pressure ulcers	Grade II pressure ulcers	Grade III pressure ulcers	Grade IV pressure ulcers	Number of discharged patients
2016	0.017	0	0.015	0.002	0	46477
2017	0.056	0.019	0.029	0.002	0.002	48474
2018	0.049	0.033	0.02	0.002	0	49196
Jan to Sep, 2019	0.097	0.05	0.06	0	0	38065
Q4, 2019	0.029	0.007	0.022	0	0	13565
Q1, 2020	0.038	0.023	0.015	0	0	13114
Q2, 2020	0.042	0.021	0.021	0	0	14379

③ The incidence and injury level of patients falling from bed

Table 4.9 shows the incidence and injury level of patients falling from bed in hospital Y from 2016 to the second quarter of 2020. Overall, the incidence of patients falling from bed was the lowest between January and September in 2019. Although it increased slightly after the pre-accreditation, the indicator showed a continuous decline after the formal accreditation. The overall level of the following stages after the pre-accreditation was lower than that before 2019. After the pre-accreditation, the proportion of Grade I injuries increased gradually, while those of Grade II and Grade III injuries decreased. The number of Grade II injuries in the second quarter of 2020 was down to zero. It is indicated that the injury level of patients falling from bed was decreasing after the accreditation.

Table 4.9 Incidence and injury level of patients falling from bed in hospital Y during the Q2 of 2013 to 2017

Year	Total			Injury level					
				Grade I		Grade II		Grade III	
	Number of injury incidents	Times of falling	Incidence rate (%)	Number of events	Proportion (%)	Number of events	Proportion (%)	Number of events	Proportion (%)
2016	55	78	70.51	26	47.27	17	30.91	12	21.82
2017	63	67	94.03	38	60.32	21	33.33	2	3.17
2018	56	74	75.68	40	71.43	10	17.86	6	10.71
Jan to Sep, 2019	43	70	61.43	30	69.77	9	20.93	4	9.30
Q4, 2019	15	21	71.43	9	60.00	3	20.00	3	20.00
Q1, 2020	15	22	68.18	13	86.67	1	6.67	1	6.67
Q2, 2020	15	23	65.22	13	86.67	0	0	2	13.33

④ Quality monitoring indicators of ICU

Figure 4.5 illustrates the trend in unexpected 48-hour ICU return rates in hospital Y from the Q3 in 2018 to the Q2 in 2020. During the pre-accreditation period of the Q3 of 2019, this indicator reached the minimum value of zero and rebounded in the Q4 of 2016. But it dropped to 0.5% in the first two quarters of 2020, which is significantly lower than the level before pre-accreditation. Looking at the trend continuously, there has been a gradual decline in this indicator since the Q3 of 2018, suggesting that the accreditation process has been beneficial in reducing the unexpected 48-hour return rate to the ICU.

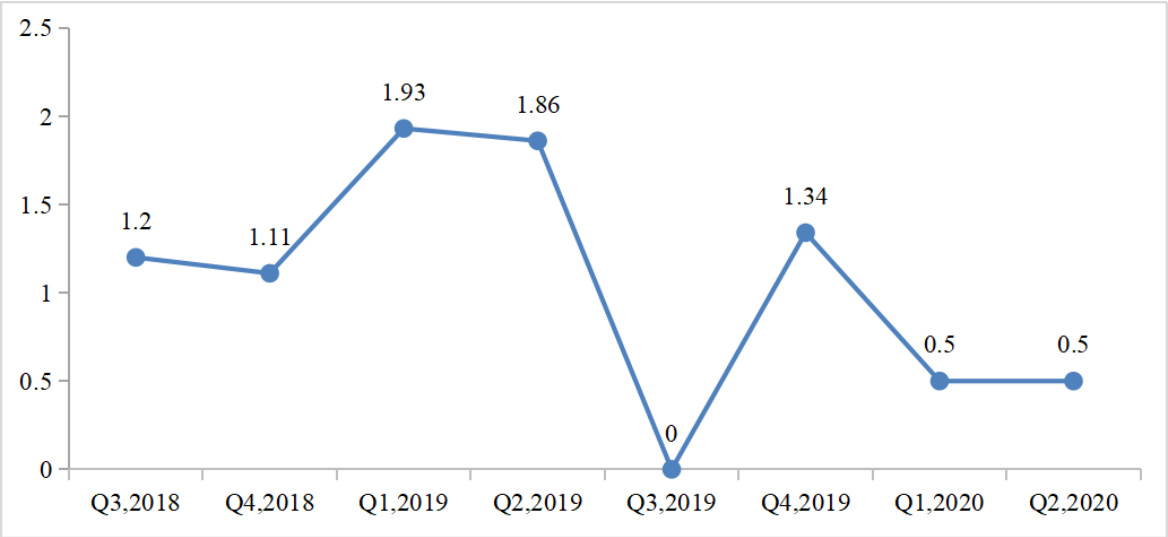

Figure 4.5 Unexpected 24/48-hour ICU return rates (%) in hospital Y from Q3 in 2018 to Q2 in 2020

Figure 4.6 shows the incidence (‰) of VAP in hospital Y from the Q4 of 2018 to the Q2 of 2020. From the Q4 of 2018 to the Q1 of 2020, this indicator showed a clear and continuous downward trend. The decrease was the greatest after the pre-accreditation and remained at the lowest level for three months after the formal accreditation, indicating that the incidence of VAP was effectively controlled by the two accreditations. It is worth noting that this indicator showed a tendency to rebound in the Q2 of 2020, suggesting that management personnel and medical staff should not lose control of important indicators after the accreditation.

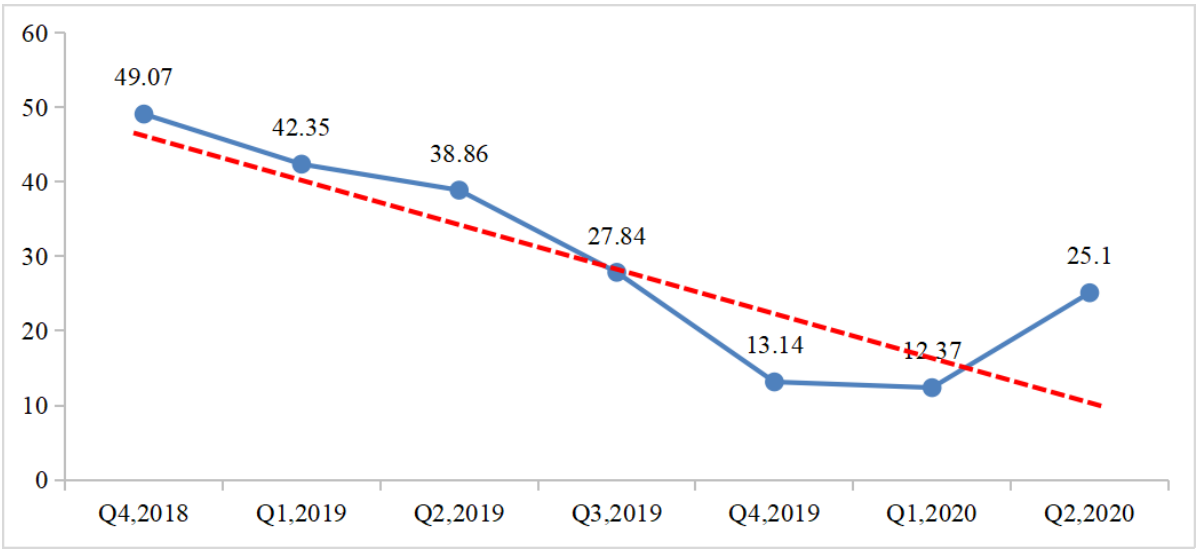

Figure 4.6 Incidence of VAP in hospital Y from Q4 in 2018 to Q2 in 2020 (‰)

⑤ Monitoring indicators of rational drug use

Table 4.10 shows the utilization rate of antibiotics and injections in the outpatient department of hospital Y from 2016 to the Q2 of 2020. According to the accreditation standards and drug use regulations, antibiotics and injection drugs are the key of drug control in tertiary

Grade A hospitals. In order to prevent the abuse of the two, it is necessary to strictly control their utilization rate. In general, the fluctuation in the utilization rate of these two drugs has been basically identical since 2016. From 2016 to the Q1 of 2020, the trend of continuous decline was the greatest after the pre-accreditation and reached the lowest value after the formal accreditation. Later, a slight rebound occurred in the Q2 of 2020. The results indicate that the two accreditations have a positive effect on the standardization of antibiotics and injections in outpatient clinics, and are conducive to the rational use of drugs. However, enhanced supervision still needed after the accreditation.

Table 4.10 Changes in rational drug use indicators in hospital Y, 2016-2020, second quarter

Indicator	2016	2017	2018	January - September 2019	Fourth quarter of 2019	First quarter of 2020	Second quarter of 2020
Number of outpatient antimicrobial prescriptions/per 100 outpatient prescriptions (%)	17.61	17.27	17.50	17.20	14.16	13.44	15.45
Number of injectable prescriptions/per 100 outpatient prescriptions (%)	12.77	11.61	10.60	9.34	7.32	7.25	7.27

⑥ Hospital infection control quality surveillance indicators

Table 4.11 shows the changes in the incidence rate (‰) of ventilator-associated pneumonia (VAP) and the incidence rate (‰) of urinary tract infections associated with indwelling catheters in hospital Y from the third quarter of 2019 to the second quarter of 2020. After the pre-accreditation at the end of the third quarter of 2019, the incidence rate of VAP decreased the most; after the formal accreditation at the end of the fourth quarter of 2019, the indicator reached a minimum value of 13.56 ‰ in the first quarter of 2020, and rebounded more significantly in the second quarter of 2020, indicating that the two accreditation works contributed significantly to the control of VAP incidence in the short term, but the long-term improvement mechanism was not obvious. Incidence of urinary tract infections associated with indwelling catheters, on the other hand, has continued to decline only since the formal accreditation, and still maintains a good control situation.

Table 4.11 Changes in quality indicators of hospital infection control in hospital Y from the third quarter of 2019 to the second quarter of 2020

Indicator	Third quarter of 2019	Fourth quarter of 2019	First quarter of 2020	Second quarter of 2020
Incidence of ventilator-associated pneumonia (VAP) (‰)	29.13	16.78	13.56	25.33
Incidence of urinary tract infections associated with indwelling catheters (‰)	3.75	4.06	2.44	2.27

4.7 Summary

Through the investigation of hospital grade accreditation of several hospitals in G Province, based on semi-structured interviews and the analysis of the participatory observation records during the long-term participation of the author in the hospital grade accreditation process, this study analyzed the hospital grade accreditation from the perspectives of multiple core stakeholders such as hospital administrators, medical staff, patients and family members. It was found that hospital grade accreditation could promote hospital medical quality and medical safety, that is, improve hospital performance. Specifically, the hospital managers believed that the hospital grade accreditation can promote the standardization of hospital management; The medical staff said that the hospital grade accreditation is beneficial to improving their clinical skills and level; Patients and their families feedback that the accreditation can improve the quality and satisfaction of medical treatment. In addition, through the data analysis of the medical quality indicators of the two hospitals, it was found that the indicators had significantly improved after the accreditation. However, we also noticed that after the hospital grade accreditation, the momentum of continuous improvement in medical quality and safety management of hospitals slowed down, and some indicators rebounded. This indicates that the hospital's improvement in medical quality and safety management needs continuous improvement in a long term, and cannot rely on only one accreditation. To sum up, it is concluded that hospital grade accreditation can promote hospital performance, but its long-term mechanism needs to be strengthened to ensure the continuous improvement of hospital performance after the accreditation.

Chapter 5: The Mechanism of Hospital Grade Accreditation Affecting Hospital Performance from the Perspective of Core Stakeholders

According to the previous chapter, which explores the impact of hospital accreditation on hospital performance from the perspectives of various core stakeholders, we have preliminarily found that hospital grade accreditation can promote medical quality and safety, thereby enhancing hospital performance, from the perspectives of multiple core stakeholder groups such as participating hospitals, hospital administrators, hospital healthcare workers, patients, and their families.

However, we have also identified three problems from the overall situation of hospital grade accreditation in G Province. The first problem is a discrepancy between the self-assessment results of some participating hospitals and the formal results of expert review. Specifically, some participating hospitals did not have a comprehensive understanding of the assessment indicators and requirements in their self-assessment. They may have been overconfident that they underestimated their own problems and deficiencies during the self-assessment, thus resulting in a higher self-assessment score. The second problem is a relatively higher non-compliance rate as per the management indicators, such as hospital management system, and personnel management. This is mainly because hospitals have long focused on medical work while to some extent neglecting the importance of management, a typical "emphasis on medical care over management". The third problem is that although hospital grade accreditation can promote short-term improvements in the medical quality and safety of participating hospitals, the lasting impact of a single assessment is limited. We have also observed from the data of medical quality and safety of the participating hospitals after accreditation that, although the indicators of medical quality and safety have remained relatively sound in a short term after formal accreditation, some indicators begin to decline or even show a trend of negative rebound after a longer period. This suggests that we should delve into how hospital grade accreditation affects the intrinsic mechanisms of medical performance. Only by understanding these mechanisms can we target the key factors to further leverage the long-term mechanisms for the continuous improvement of hospital grade accreditation.

In this chapter, interview research and coding analysis will be employed to explore the intrinsic mechanisms through which hospital accreditation impacts medical performance. By collecting data from in-depth interviews and employing a systematic, layered coding analysis—including first-level, second-level, and third-level coding—we can gradually delve into the data to identify, classify, and integrate key concepts. This exploration aims to reveal how hospital grade accreditation affects hospital performance and its intrinsic mechanisms, helping us understand the deep-seated reasons behind the impact of hospital grade accreditation on hospital performance, and thereby providing a basis for optimizing the hospital grade accreditation system.

5.1 Interview Research, Coding Analysis, and Implementation Process

5.1.1 Interview Research

Interview research is a significant qualitative research method that involves in-depth, face-to-face exchanges where the perceptions and experiences regarding a specific question of the interviewees are understood (Kallio et al., 2016). Interview research exhibits the following characteristics: it employs semi-structured or unstructured questions, allowing researchers to outline the main questions based on the research question while also permitting the introduction of new questions during follow-up interviews to gather more information (Rosenthal et al., 2016). The emphasis is on engaging in-depth dialogues with the interviewees, wherein researchers enable them to fully express their perspectives through active listening and questioning. The interviews will be audio-recorded or transcribed in real time, which helps the researchers thoroughly review and organize the data afterward. Researchers will classify and code the interview data, extracting key thematic concepts and summarizing new insights into the research question. The outcomes of interview research focus more on understanding the research question itself rather than quantifying it from a statistical perspective. This method can be integrated with other qualitative approaches, such as literature review and observation, to form a multifaceted research design. Interview research prioritizes in-depth interaction with interviewees, and obtains firsthand information through open-ended questions, which is particularly important for understanding complex research questions and forms an essential component of qualitative research methods (Benlahcene et al., 2021).

5.1.2 Coding Analysis

This study employs coding analysis to analyze interview data in depth. Coding analysis is a common qualitative research method that classifies and abstracts the raw data to extract principal concepts and categories pertinent to the research question, thus elucidating the internal logic (Khokhar et al., 2020). The coding analysis in this research unfolds through three stages: first-level coding, second-level coding, and third-level coding. In first-level coding, researchers begin with a detailed review of all interview records for an overall picture, followed by the open coding of each interview record to extract the main concepts related to the research question. Each identified concept is then labeled and associated with supporting original statements, culminating in the compilation of a first-level coding list. In second-level coding, researchers sort and organize the results of first-level coding, identifying the internal connections to extract higher-level categories. This phase requires constant comparison of different first-level concepts to uncover their underlying principles and thus refine the second-level categories. In third-level coding, the focus shifts to conducting a thorough analysis of the most critical and representative categories from second level coding. The aim here is to explore the intrinsic logical relations and integrate related categories into a higher-level classification system. This stage demands a repetitive examination of the original data and the iterative refinement of the classification scheme. The whole coding analysis process requires continuous comparison and feedback between concepts and data to ensure the scientific rigor and authenticity of the classification scheme. This method can help researchers unearth the key points of the research question and clarify their internal relations, which lays the foundation for subsequent theory construction.

5.1.3 Implementation Process

In this study, the researchers will go through the cyclical process of "data collection—data verification—data comparison—revision and validation" to discover, develop, and validate relevant theories. The essence of this study is rooted in the application of multiple data sources and analytical techniques to achieve a more comprehensive and in-depth comprehension of the proposed research question. Consequently, the study will code and categorize the gathered data, which mainly encompasses first-level coding, second-level coding, and third-level coding. Coding is performed by continually comparing the events and concepts to form more coding categories and features, and to conceptualize the data (B. G. Glaser, 1992). First-level coding

is primarily used in the early stage of data analysis to define the concepts discovered in the data, and analyze their attributes and categories. Second-level coding focuses on exploring the mainline of a certain category to discover and construct the inherent connections between the main category and the subcategories. After axial coding, third-level coding selects core categories and focuses analysis on codes related to the core categories.

This study will combine the interview data for systematic analysis, and specific steps are as follows: (1) Data Collection: Interview records from individuals involved in hospital grade accreditation are collected as research material through semi-structured interviews. (2) First-level Coding: Preliminary coding is applied to the collected interview records to identify and distill first-level concepts related to the research question. (3) Second-level Coding: The relations between first-level concepts are compared to discern their internal connections, thus extracting second-level categories. (4) Third-level Coding: Key categories are selected for detailed coding analysis to uncover the logical relations among categories, forming a third-level classification system. (5) Constant Comparison: A constant process of comparison between data and concepts is maintained. (6) Theoretical Conceptualization: This phase involves the formulation of theoretical concepts and the establishment of their underlying connections. Concepts from all levels are integrated to reveal their logical relations in explaining the research question, thereby constructing a theoretical framework. (7) Theoretical Model Construction: A theoretical model explaining the impact of hospital grade accreditation on hospital performance is constructed, incorporating the perspectives from various stakeholders. (8) Theory Validation: The theory is further analyzed and corroborated with different stakeholders' perspectives. Through repeated coding and theoretical model construction, this study with the above steps will delve deep into the research question from different perspectives and levels, thereby forming a systematic conclusion.

5.2 Data collection

5.2.1 Data collection methods

This chapter utilizes interview research to collect data for the study. Interview research, a pivotal qualitative research method, involves in-depth, face-to-face exchanges with interviewees to grasp their perspectives and experiences concerning a specific issue. All interviewees are contacted in advance and interviewed with their consent. The interviews are semi-structured, and primarily based on an outline of questions, with the flexibility to introduce

additional questions as necessary during follow-up. The entire interview is audio-recorded, during which notes are taken to guarantee data integrity. The selected interviewees can be the key stakeholders in hospital grade accreditation, which can help us gain a comprehensive and multi-faceted understanding of the grade accreditation process and its impact.

5.2.2 Data analysis methods

To improve the validity of the research, in conducting data analysis, this study adheres to a set of guiding principles, starting with a coding analysis method. By establishing a database for interview records, it allows for the systematic organization and input of all interview records, thereby facilitating efficient management and retrieval. The second principle is the creation of an evidence chain. This involves contrasting the descriptions provided by different interviewees to construct a continuum of evidence either supporting or contesting theoretical concepts. Besides, reflection is also integral to the whole study. Researchers will engage in continuous self-reflection and critique throughout the coding and analysis phases. This critical engagement should ensure that preconceived notions do not skew the findings. Moreover, the research process is designed to be transparent. Every step, from data collection to analysis, is documented in detail, enabling other researchers to replicate the study easily. Comparability is also a focus. The research adopts standardized interview outlines and questions, thus maintaining comparability across different interviews. Finally, the study should guarantee comprehensiveness by ensuring that no potential area of inquiry is overlooked before concluding any interview, thereby ensuring the sufficiency of the data collected.

To improve the internal and external validity, reliability and reproducibility of the study, the following methods were adopted:

To improve the internal validity of the study, a three-member research team has been formed to collaboratively engage in data collection, coding, and analysis, thereby reducing potential bias. Also, a double coding strategy has been implemented, wherein two researchers have independently coded identical data and addressed any discrepancies through discussions.

To improve the external validity of the study, hospitals from multiple regions in G Province were selected as study sites to increase the generalizability of research results in different settings. The study process was recorded in detail to improve replicability.

To improve the reliability of the study, a standardized interview guide and coding framework were adopted to minimize inconsistencies in the data collection and analysis. Besides, reliability checks of coders were also conducted among researchers to reduce subjective errors.

Finally, to increase the reproducibility of the study, the design, sampling, data collection, and analysis processes were thoroughly recorded. The coding results were publicly shared to allow other researchers to replicate the research methods.

5.2.3 Software for data analysis

In addition to manual coding for data analysis, the study also adopted NVivo 12, a well-known qualitative research analysis software that can effectively help researchers manage, organize, and analyze qualitative data. In this study, all the collected data of hospital accreditation, such as interview transcripts and documents, was imported into NVivo 12 to create a "Hospital Grade Accreditation" Project.

First-level coding was carried out in NVivo to extract concepts from the raw material to form first-level nodes. Based on first-level nodes, the second-level coding was carried out in NVivo to explore the relationship between first-level nodes to form second-level nodes. After these two procedures, researchers analyze each second-level node (such as theme/category) formed in second-level coding in NVivo to find their logical relationship. For example, researchers may find that the four second-level nodes of "Decision Making", "Labor Relations", "Industry Regulation", and "Laws and Regulations" are intrinsically related, for together they explain the concept of "Compliance with Legal Regulations". Thus, researchers can categorize these four second-level nodes under a new third-level node "Compliance with Legal Regulations" in NVivo. At the same time, this third-level node, "Compliance with Legal Regulations", is clearly defined. For example, it "refers to compliance with the regulatory policies and laws and regulations of governments and public administration, and the standards of conduct set by industry associations and certain powerful organizations, in order to avoid illegal and disciplinary behaviors". By continuously analyzing and comparing other second-level nodes, a clear picture of each third-level node and their logical relationships is formed in NVivo, and the third-level coding was completed.

5.3 Data analysis

Based on the literature review, this study focuses on the implementation effect of the hospital grade accreditation system.

Through the study of the hospital grade accreditation system in G province, it is found that the grade accreditation system influences the medical quality and safety of hospitals through external and internal stakeholders.

5.3.1 First-level coding

First-level coding is the process of initially categorizing and conceptualizing the raw data. The purpose is to extract primary concepts pertinent to the research question from a vast amount of textual data. This study reshuffles all the gathered data materials and refines the concepts according to the research needs and concludes different first-order concepts based on common characteristics shown in the sample data (Annex E).

This study employs an open coding method for first-level coding. The specific steps are as follows: All original materials are revisited for a preliminary understanding to determine the research focus. This study aims to explore how hospital grade accreditation affects hospital performance. Fragmented sentences relevant to the research focus are extracted from the materials and conceptually labeled. Different conceptual labels are categorized and organized, with each concept named. The names can be directly taken from the materials or conceptualized based on the research question. Each concept is illustrated with examples, supported by more than three original sentences. This facilitates the understanding of the meaning of each concept. All concepts are then coded and organized to form a first-level coding table, which records each first-level concept along with its definition and supporting examples. The coding table is repeatedly checked to ensure clear concept categorization, accurate definitions, and ample supporting examples. Through the above steps, this study has completed the preliminary open coding of the original materials, extracting the main first-level concepts related to the research question and laying the foundation for further analysis.

5.3.2 Second-level coding

First-level coding involves the refinement of initial concepts. It entails summarizing various first-order concepts based on G provincial hospital grade accreditation. However, second-level coding is required due to the lack of thorough research on the interconnections of the first-order concepts. Second-level coding means a comprehensive analysis of the first-order concepts to discover their interrelationships (Linneberg & Korsgaard, 2019). Subsequently, it delves deeper into exploring the logical connections among these first-order concepts, and ultimately the second-level categories are extracted (Annex F). The specific steps taken in this study are as follows: Reexamine each first-level concept in the first-level coding table. Analyze the connotations and attributes of each first-level concept to identify their internal connections, and aggregate the intrinsically related first-level concepts into new categories. Then, name each

category to clarify its content, and create nodes in the NVivo software to assign related first-level concepts to the corresponding second-level nodes. Also, define each second-level category, repeating the previous steps to gradually identify all second-level categories, ensuring that the definitions of second-level categories accurately match the included first-level concepts. Finally, organize all second-level categories and their definitions into a table, forming the second-level coding results. Through these steps, the study completes the refinement from first-level concepts to second-level categories, revealing the internal relations between concepts and laying the foundation for further theory construction.

5.3.3 Third-level coding

Third-level coding involves further refinement and generalization of the logical relationships among second-order categories as manifested in second-level coding. Employing a method of "constructive interpretation," the third-level coding aims to clarify the interconnections among the second-order categories, thereby presenting the comprehensive framework of the case study, so as to form the basic theoretical structure of the study. Therefore, the third-level coding is based on the consolidation of first-level and second-level coding. This study, through analyzing the relationships between second-order categories and other categories, excavates and refines the "implementation effect of hospital grade accreditation system" as the core, based on which the relationship structure between the second-order categories and their intrinsic connections with the main category are established (Annex G).

Third-level coding or core coding is the process of further identifying core categories from overarching categories, combining with the primary sources and depicting the relationships, behaviors and phenomena between each element in the form of "storyline". This study begins with analysis of the connotation and nature of the six overarching categories.

"Unifying cognitive thinking" overarching category refers to stakeholders continuously optimizing and enhancing their cognitive level on the indicator system of hospital grade accreditation and hospital operation and management, and reach a consensus on it.

The core logic of "Focusing on industry norms" overarching category is to focus on industry standards, codes of conduct and norms that stem from society's expectations for hospital ethics and values.

"Compliance with laws and regulations" overarching category refers to compliance with regulatory policy and laws and regulations set by government and public administration, as well

as with standards of conduct set by industry associations and certain powerful organizations, in order to avoid illegal and unethical behavior.

"Innovative learning" overarching category refers to exploratory learning that goes beyond existing knowledge and experience in order to enhance competence.

"Applied learning" overarching category refers to internal sharing and training of existing knowledge and experience in order to improve overall level and the application effect.

"Medical quality and safety" overarching category refers to the entire management process of all planning, decision-making, implementation, control, coordination, guidance, influencing factors, and the feedback and processing of relevant information in medical institutions with the goal of improving medical quality, so as to improve medical service quality and ensure the safety of medical care.

By further comparing the above six overarching categories with those in the existing studies, this study finds that the three overarching categories of "Unifying cognitive thinking", "Focusing on industry norms", and "Compliance with laws and regulations" obtained from the grounded research have a strong intrinsic connection in terms of content, and together they explain the basic form of "legitimacy acquisition" in Theory of Legitimacy. Therefore, this study categorizes "cognitive legitimacy", "normative legitimacy" and "regulative legitimacy" as "legitimacy acquisition", and defines its connotation as "the behavior of an entity conforms to corresponding system of standards, values, beliefs and definitions in a specific social structure, and is considered to be reasonable, correct and appropriate". Similarly, "Innovative learning" and "Applied learning" can be categorized as "organizational learning", which refers to "the process of organizing personnel to identify problems, find solutions, adopting the solution, and adjusting the implementation effect of the solution". By further analyzing the logical relationships among overarching categories, the causal "storyline" between these categories of this study emerges: with the indicator system of hospital grade accreditation and the guidance of experts, hospitals' stakeholders promote medical quality and safety through internal organizational learning and external legitimacy acquisition, thus enhancing hospitals' reputation, influence and operational performance. The relationship between core coding variables is shown in Figure 5.1:

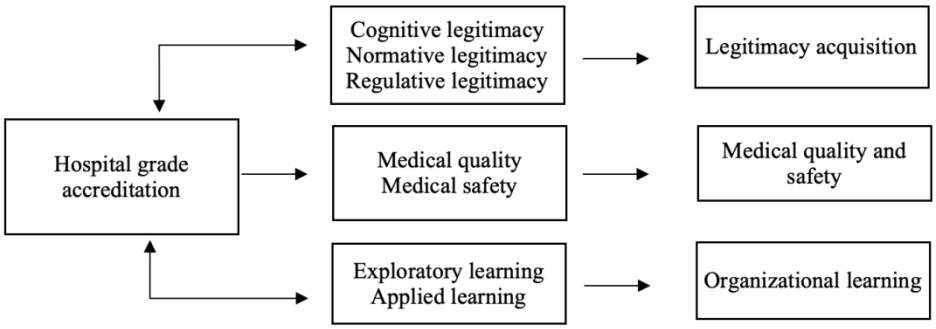

Figure 5.1 Mechanism model of hospital grade accreditation influencing hospital performance

5.4 Fingdings

5.4.1 Influence of hospital grade accreditation on hospital legitimacy acquisition

Through the establishment of a sound index system, the hospital grade accreditation clearly requires that the hospital should comply with various standards and specifications and relevant laws and regulations in all its operations and management. The accreditation emphasizes that medical quality and safety management must comply with multiple standards such as the Regulations on the Administration of Medical Institutions and The Law for Practice of Medical Institutions, and also requires hospitals to establish and improve internal management systems and strictly implement them. This provides clear guidance for hospitals to focus on the compliance with norms and laws and improve the legitimacy of their operations.

Implementing hospital grade accreditation is conducive to improving the hospital legitimacy acquisition. On the one hand, during the accreditation, the accreditation experts will inspect the implementation of laws and regulations, the protection of patients' rights and interests, effectively supervise whether the hospital complies with relevant regulations, so as to ensure the legal operation of the hospital. On the other hand, through the accreditation, the hospital can know its shortcomings by the indicators, such as poor performance in the patient satisfaction survey, which indicates that the hospital needs to optimize the patient service, and secure more patients' rights and interests to enhance the legitimacy of operation behavior. In addition, the recognition attained by grade accreditation can not only enhance the legitimate image of the hospital in the society, but also enhance the hospital's awareness of legal operation, thus further promoting the hospital to continuously improve internal management, and enhance

the standardization and legitimacy of its work, so as to achieve the continuous improvement of the hospital legitimacy.

By guiding the hospital to pay attention to the implementation of norms and laws, supervising the operation of the hospital and giving suggestions for improvement, the hospital grade accreditation effectively promoted the improvement of the hospital legitimacy acquisition and realized the continuous improvement of the hospital legitimacy.

5.4.2 Influence of hospital grade accreditation on hospital organizational learning

The hospital grade accreditation will give the gap analysis of the hospital in various indicators according to the accreditation results of different years, and point out what the hospital needs to improve. This serves as the feedback, by which the hospital can identify its own problems so as to make targeted improvements. For example, if the accreditation results showed there were problems in patient satisfaction, it suggests that the hospital needs to carry out internal training and optimize the service process and attitude, thus improving the patient experience. During the hospital grade accreditation, the accreditation experts will also give professional guidance on the problems and shortcomings of the hospital, and introduce the advanced experience and practices of more excellent hospitals. This provides a learning opportunity for the hospital. Through learning and exchange, hospitals can absorb better practices of other hospitals in terms of the same index, and carry out internal promotion and application to improve themselves. In addition, in order to pass the next accreditation, the hospital will also carry out internal training according to the accreditation results, strengthen the indicator understanding and grasp of medical staff and managers, and promote the dissemination and application of knowledge and experience within hospitals.

By giving feedback and guidance, the hospital grade accreditation identifies the problems and deficiencies of the hospital, and provides opportunities for learning and reference, which effectively promotes the organizational learning within the hospitals, such as learning and exchanges, internal training and other activities, and promotes the dissemination and application of knowledge and experience within the hospitals, so as to achieve the continuous improvement of the hospital management.

5.4.3 Influence of hospital grade accreditation on medical quality and safety

The hospital grade accreditation takes medical quality and safety as an important assessment indicator. It emphasizes that hospitals should attach great importance to medical quality

management and safety guarantees through clear index requirements and strict scoring standards, which places high demands on hospitals. On the one hand, the hospital grade accreditation will lead to a comprehensive inspection of the quality and safety of all medical procedures in the hospital. Accreditation experts will randomly check medical records, check the use of medical equipment, observe the operation process of medical staff, so as to find existing problems and hidden dangers. This provides a comprehensive and systematic self-diagnosis basis for hospitals to identify which medical links and work need to be improved. For example, through inspections, accreditation experts may find that there are potential safety hazards during certain surgical procedures, which prompts the hospital to optimize the operating room management and operating procedures. At the same time, during the accreditation, some problems in the maintenance of medical equipment may be found, suggesting that the hospital needs to strengthen equipment management. On the other hand, the hospital grade accreditation will also give professional guidance to the hospital on medical quality and safety. Accreditation experts point out the problems existing in the hospital, which provides valuable learning and reference opportunities for the hospital. Hospitals can refer to these constructive suggestions and take effective and systematic measures to improve their quality management system and safety measures. At the same time, the hospital will also strengthen the supervision and control of medical procedures, and find and solve problems in a timely manner to ensure the quality and safety of work.

Through comprehensive inspection and professional guidance, the hospital grade accreditation can effectively identify the deficiencies of the hospital's medical quality and safety, and provide excellent experience for reference. This prompts the hospital to continuously optimize the quality management system and safety measures, and improve the quality of medical staff, so as to achieve long-term improvement in medical quality and safety.

5.4.4 Mechanism of hospital performance in hospital grade accreditation

Based on the interview research, hospital grade accreditation mainly affects hospital performance through two mechanisms, "legitimacy acquisition" and "organizational learning".

Legitimacy acquisition mechanism. The hospital grade accreditation has established a set of strict assessment standards and requirements, which provides a legal, legitimate and appropriate reference frame for hospital work. Through the accreditation, the hospital understands the expectations of society and the industry, and realizes the importance of improving medical quality and safety. In order to pass the accreditation, the hospital needs to adjust its own ideal and behavior to meet the accreditation standards. This has prompted the

hospital to adjust and optimize its management philosophy and operation mode in order to gain recognition from all aspects of society, which has helped to realize the improvement of hospital legitimacy acquisition.

Organizational learning mechanism. The hospital grade accreditation not only points out problems, but also provides excellent experience for hospitals. Hospitals absorb these experiences and lessons through internal training and other ways, and transform them into their own management practices. At the same time, hospitals will carry out continuous internal learning and improvement in order to pass the next accreditation. This promotes the continuous improvement of knowledge level and management ability in hospitals to realize organizational learning.

Through the joint effect of the above two mechanisms, hospitals can not only obtain the recognition of all aspects of the society, but also improve their internal management. This has promoted the improvement of hospital performance in multiple dimensions such as medical quality, service level and operational efficiency.

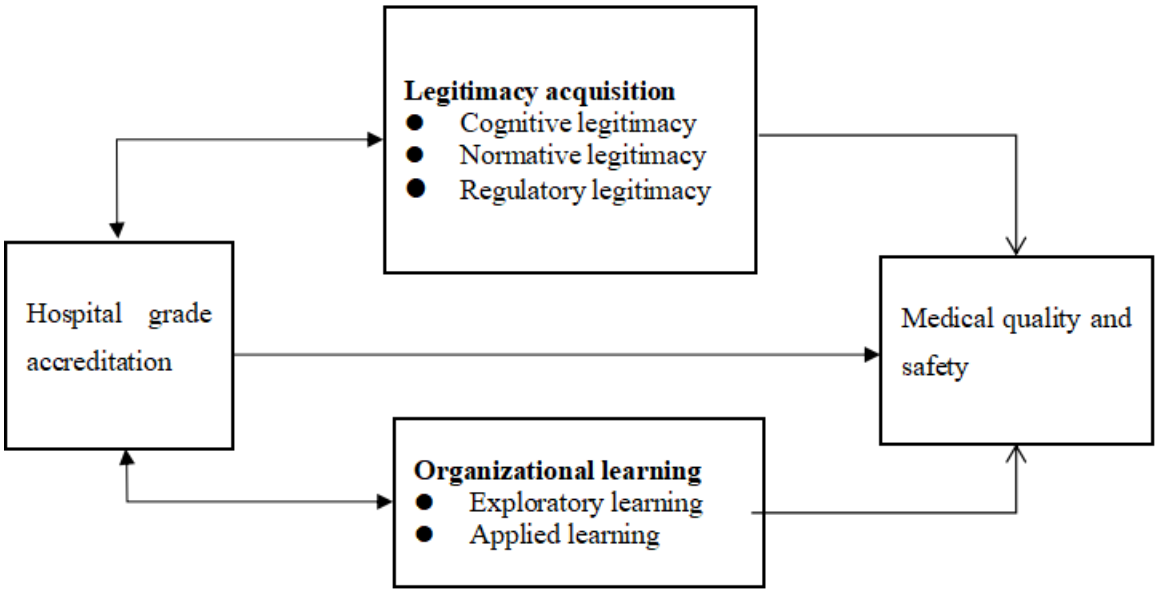

Figure 5.2 Mechanism model of hospital grade accreditation affecting hospital performance

5.4.5 Long-term mechanisms for continuous improvement of hospital grade accreditation

In the overall analysis of the accreditation results of hospitals in G Province, two issues were identified: 1. The results of hospital self-assessment were better than the results of formal hospital grade accreditation, indicating that some participating hospitals still do not have a good understanding of the accreditation terms; 2. The frequency ratios of unqualified terms in management teams are similar and relatively high, reflecting hospitals' emphasis on medical

care over management. Through interview research, this chapter studies the mechanism of hospital grade accreditation on healthcare quality and safety performance. Combined with the case study of hospital grade accreditation in G Province, it aptly corroborates the two issues found in the hospital grade accreditation in G Province: Hospital grade accreditation promotes internal organizational learning, including learning about the requirements and terms of the accreditation. However, only one round of accreditation is not enough to enable hospital staff to fully grasp the connotation of accreditation term. As a result, different degrees of incomplete understanding have occurred. Even though hospitals have accomplished continuous improvement in accordance with accreditation terms, it turns out that evaluation results of self-improvement are better than that of experts' evaluation during the formal accreditation. In addition, management teams have a higher failure rate as the cycle of enhancing legitimacy with the help of external forces is relatively short. Thus, management personnel's rectification and implementation of terms of management teams still need to be improved, and management requirements of relevant laws and regulations still need to be further implemented. Therefore, the overall situation of hospital grade accreditation in G Province confirms on the one hand that the two factors, organizational learning and legitimacy acquisition, are the key factors affecting the improvement of hospital medical quality and safety. On the other hand, it also suggests that the hospital grade accreditation should leverage the long-term mechanism of continuous improvement by organizing re-accreditation on a regular and irregular basis. This is conducive to promoting hospitals staff to maintain the study of accreditation terms and connotation after the accreditation, and also conducive to externally supervise hospital management personnel to continuously strengthen hospital's management of rules and regulations and norms, so as to enhance its legitimacy.

5.5 Summary

This chapter employs the interview research method combined with coding analysis to investigate the internal mechanisms through which hospital grade accreditation affects hospital performance. Through the first-level, second-level, and third-level coding analysis of grade accreditation interviews conducted with multiple hospitals in G Province, the results reveal that hospital grade accreditation primarily influences hospital performance through two mechanisms: enhancing hospital's acquisition of legitimacy and boosting hospital's organizational learning capacity. The specific manifestations are as follows: 1. Hospital grade accreditation bolsters the enhancement of hospital's legitimacy by establishing stringent

assessment standards and requirements. They supervise whether hospitals comply with relevant regulations, ensure the legal operation of hospitals, and elevate their legitimate image in society. 2. The promotion of organizational learning capacity by hospital grade accreditation is achieved through providing feedback and guidance. This process identifies the problems and shortcomings within hospitals and offers opportunities for learning and emulation, which effectively fosters organizational learning within hospitals, thus encouraging the dissemination and application of knowledge and experience within hospitals. 3. Hospital grade accreditation also promotes medical quality and safety by conducting comprehensive inspections and offering professional guidance. This effectively identifies the deficiencies in hospital medical quality and safety, provides examples of excellent practices for emulation, and prompts hospitals to continuously optimize their quality management systems and safety measures, thereby improving medical quality and safety. 4. Hospital grade accreditation enhances medical quality and safety through legitimacy acquisition and organizational learning, leading to hospital performance improvements across multiple dimensions, including medical quality, service level, and operational efficiency. In summary, the impact of hospital grade accreditation on hospital performance primarily lies in the promotion of hospital legitimacy acquisition, organizational learning, and the enhancement of medical quality and safety. This provides critical guidance and support for the continuous improvement and development of hospitals.

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Chapter 6: Conclusions

6.1 Major conclusions

In China, health care system is not static. As the times marches, China's hospital grade accreditation has developed to a new stage. The new round of hospital grade accreditation is no longer limited to the hospital scale and the standard-reaching rate of related indicators, and instead, it focuses more on the internal construction of hospital medical quality and safety. According to the analysis results and discussion in the previous chapters, this study obtains the following conclusions:

6.1.1 Core Stakeholders involved in hospital grade accreditation

(1) Hospitals are core stakeholders in the hospital grade accreditation. After a new round of hospital grade accreditation, with th2020
e help of the multi-stage model, hospitals strengthen their medical quality and safety management system, standardize the daily medical behavior of their staff, and improve the patient satisfaction. Therefore, all hospitals should establish a stakeholder-oriented operation system that can improve medical quality and safety, and strive to actively coordinate and communicate with all stakeholders, thus balancing the interests of all parties to ensure that all stakeholders can benefit, especially the patients who should be ensured to have maximum access to more cost-effective and high-quality medical services. Based on the above, a new medical model suitable for the current society can be established effectively. Through the analysis of the core stakeholders in the hospital grade accreditation, the all-round development of the hospital grade accreditation can be promoted.

(2) As the core stakeholders of the hospital grade accreditation, the accreditation experts not only affect the accreditation results, but also the continuous improvement of the medical quality and safety of the hospital in all aspects, including the direction of the improvement. Therefore, it is particularly important to make the accreditation experts maintain a high degree of professional homogenization and keep objective in their work. The new round accreditation of tertiary hospitals in G Province has contributed to a relatively professional and homogeneous accreditation expert team, which can meet the accreditation requirements of tertiary hospitals

in the province. They are recognized by the participating hospitals owing to their objective, accurate, and comprehensive evaluation in accordance with the requirements of the accreditation standards.

(3) Hospital staff are also core stakeholders, including hospital medical staff and hospital administrative staff, because if the participating hospital is identified as a tertiary hospital, more patients with severe and critical diseases will be attracted to the hospital, which is conducive to the accumulation of clinical experience of clinicians and nurses and the improvement of clinical diagnosis and treatment. The hospital grade accreditation is not only carried out to meet the policy requirements of the superior health administrative organs, but also helps the hospital to conduct its operation and management in a more standardized way to reduce the pressure on hospital administrators to deal with adverse events.

(4) Patients are undoubtedly the core stakeholders in the hospital grade accreditation. The data of this study shows that hospital grade accreditation can not only promote the continuous improvement of the overall quality and safety of the hospital, but also improve the clinical diagnosis and treatment ability of doctors, contributing to better medical services for patients. It not only ensures the safety and treatment of patients, but also can improve patients' medical experience and enhance patient satisfaction. Besides, multi-stage hospital grade accreditation can more effectively prolong the benefit time of patients as core stakeholders.

(5) Medical quality and safety are not only the lifeline of a hospital and the key tracking indicator of the hospital grade accreditation, but also the section with frequent and concentrated feedback in the grade accreditation. Based on the analysis of the benefit of core stakeholders, it is found that multi-stage accreditation is helpful to the continuous improvement of hospital medical quality and safety in a certain period of time, so that the medical quality and safety of the hospital can be improved gradually. However, although one round accreditation lead the hospitals to gradually master the ideals and methods of continuous improvement, the hospitals still do not completely enter a virtuous circle of continuous improvement. After the formal accreditation, the hospitals should continue to accept the regular or irregular expert on-site supervision and review organized by the G Provincial Center of Hospital Management, Evaluation and Quality Control. Thus, the hospital can always keep making efforts for continuous improvement, with the increasing awareness of promoting reform and construction by evaluation, balancing evaluation and construction while focusing on connotation, and sticking to continuous improvement.

6.1.2 The influence of hospital grade accreditation on different stakeholders

6.1.2.1 Promote continuous improvement of medical quality and safety

As an evaluation mechanism aimed at promoting the continuous improvement of hospitals, the hospital grade accreditation in G Province adheres to the principle of "promoting reform and construction by evaluation, balancing evaluation and construction while focusing on connotation". It contributes to the continuous improvement of medical quality and safety with multiple stages and dimensions. Xiang et al. (2022) believe that the hospital grade accreditation mechanism represented by the accreditation of tertiary hospitals promotes the continuous improvement of medical quality and safety of medical institutions.

This study compared the quality monitoring indicators of the average length of stay of discharged patients, the pressure ulcer incidence during hospitalization, the incidence of patients falling from bed and the injury degree, as well as the quality monitoring indicators of intensive care unit (ICU), rational drug use, and hospital infection control in the hospital grade accreditation. The multi-stage and multi-dimensional hospital grade accreditation can help medical institutions timely discover the risks and loopholes that may exist in the medical quality and safety management in the process of medical operation. After passing the formal hospital grade accreditation, medical institutions will continue to improve the quality and safety of medical care within a certain period of time. The findings echo the conclusions of A. L. Wang and Huang (2022).

6.1.2.2 Hospital grade accreditation promotes the work quality of medical staff

Hospital medical staff are also definitive stakeholders. Tertiary hospitals can attract more patients with difficult and serious illnesses, and even have siphon effect on patients with difficult and serious illnesses from other levels of hospitals, which is very helpful to improve clinical diagnosis and treatment ability of doctors and nurses, thus contributing to their accumulation of clinical experience. Therefore, tertiary hospitals are conducive to the promotion of professional skills of clinical doctors and nurses. In the light of it, hospital grade accreditation not only promotes the continuous improvement of overall quality and safety of hospitals, but also promotes clinical diagnostic and treatment ability of doctors, enabling hospitals to provide patients with better quality medical services.

In response to the issues appeared in hospital grade accreditation, W. Y. Li et al. (2022) considering the opinions of experts from two rounds of simulated accreditation and experts from one round of formal accreditation, commented in detail on system construction of nursing

management, construction of document control system and quality system, continuous quality improvement and emergency management. They summarized the role of improving connotation and nursing management, and concluded that hospital grade accreditation is inspirational on nursing management and plays a guiding role in improving the connotation, level and capacity of nursing management.

This study found that hospital grade accreditation can set up standards, provide guidance, and conduct assessment and evaluation for medical personnel in terms of standardizing diagnostic and treatment behaviors, improving nursing quality, enhancing management ability of patients' safety and critical condition, and promoting management ability of clinical blood transfusion, thus prompting medical personnel to provide high quality work. The establishment of assessment and incentive mechanism enables medical staff to correct their laziness in the short term and improve their work ability while hospital grade accreditation drives them to maintain a stable and relatively high work quality.

6.1.2.3 Hospital grade accreditation optimizes the work quality of hospital administrators

The reason why hospital administrators attach importance to hospital grade accreditation is, to some extent, that hospital grade accreditation meets the requirement of superior health administration to actively cooperate and support health administrative management institutions in carrying out relevant activities. The hospital administrators have also given certain attention and support to their own evaluation in hospital grade accreditation. In addition, hospital administration also needs to make use of hospital grade accreditation to improve the quality of medical services, the service attitude of medical staff, and the reliability and satisfaction of patients. As personnel management is also an important part of hospital management, therefore, it has a direct impact on hospital management, as well as the work attitude, quality and efficiency of medical staff. Hospitals need to establish a more scientific system for performance appraisal, and effectively plan for the staff's career path through hospital grade accreditation.

In addition, health administrative authorities and government departments are also definitive stakeholders. The policies and regulations made by superior administration are the power and basis for implementation of hospital grade accreditation in accordance with laws and regulations. Hospital grade accreditation and hospital itself being highly aware of various regulations and administrative directives from the superior are the manifestation of urgency. The health administration and government departments are able to promote the continuous improvement of medical quality and safety, improve people's medical experience, and enhance

people's livelihood through hospital grade accreditation, serving as the manifestation of legitimacy.

It has been found that hospital grade accreditation can promote hospital administration and management, as shown in the following: different departments strengthen collaboration and cooperation and establish a sense of responsibility throughout the entire hospital; administrative staff master tools and methods to ensure quality management in a targeted manner; more efforts have been made in system construction with the help of external wisdom to improve quality; the capacity of finance, personnel, emergency management, and discipline construction have been strengthened; targeted learning and training for "tertiary hospital routinization, tertiary hospital normalization and continuous improvement and optimization of tertiary hospital work" have been carried out.

6.1.2.4 Hospital grade accreditation promotes the satisfaction of patients and families

Patients and their families, who benefit from quality medical care, are implicitly definitive stakeholders of hospital grade accreditation. For a hospital, being accredited as a tertiary hospital represents the obtaining of a higher platform and a greater reputation, which can attract more high-end medical talents and provide more effective and safe diagnosis and treatment plans and medical services for patients with critical and severe diseases. Therefore, patients with mild diseases or patients with critical and severe diseases tend to choose a better hospital when seeking medical treatment, and tertiary hospitals have more professional experts, which has become an important factor for patients to choose medical institutions.

This research finds that after passing the hospital grade accreditation, patients' overall satisfaction with medical services shows a significant upward trend. Song (2017) conducted a study on the satisfaction of inpatients in psychiatric hospitals with hospital nursing work before and after hospital grade accreditation. Using stratified cluster sampling, 1,028 data were collected before the accreditation and 1,002 data were collected after the accreditation. Statistical analysis was conducted with the use of rank sum test, which showed that despite minimal differences in work attitudes and a need for improved disease-related health education, inpatients' satisfaction improved in terms of ward environment, timeliness of nursing services, daily care, and humanistic care.

The study suggests that using a general approach to survey patient satisfaction has limited effect, especially considering that higher hospital rankings imply higher patient expectations. Whether the satisfaction level rises because of the hospital reputation or slides due to not living up to the reputation requires more targeted, systematic research.

6.1.3 Impact of Hospital Grade Accreditation on Hospital Performance in China

Hospital grade accreditation facilitates the acquisition of hospital legitimacy. By establishing rigorous assessment standards and requirements, it conducts a comprehensive inspection of all hospital operations to determine whether hospitals comply with relevant laws, regulations, and institutional rules; and whether they adhere to the policies and regulations stipulated by national and local governments. Only the hospitals that pass the grade accreditation are granted the qualification to conduct legal operation. This motivates hospitals to strengthen internal management and refine their regulations and systems to meet the grade accreditation requirements and ensure legal operation.

Hospital grade accreditation also promotes organizational learning within hospitals. Through the analysis of grade accreditation results, the gaps in various indicators are identified, thus pinpointing the existing problems and deficiencies for improvement within hospitals and providing constructive feedback for internal learning. Moreover, review experts offer professional guidance on the identified problems and introduce best practices from other institutions. All these present opportunities for internal learning and benchmarking, allowing hospitals to continuously optimize their workflows and management models through learning and exchanges.

Furthermore, hospital grade accreditation elevates medical quality and safety. Through exhaustive inspections and expert guidance, the accreditation process effectively identifies the deficiencies in hospitals' medical quality and safety management, and proposes targeted suggestions for improvement. This process stimulates hospitals to continuously refine their quality management systems and safety measures; and to improve the clinical competence and service quality of medical staff. Consequently, these efforts contribute to the long-term improvements in medical quality and safety.

Hospital grade accreditation impacts hospital performance through two intrinsic mechanisms: "legitimacy acquisition" and "organizational learning". By leveraging the aforementioned factors, comprehensive improvements from various dimensions are fostered, such as hospitals' management capabilities, medical quality, and patient satisfaction, which will ultimately realize the enhancement of hospital performance. Hospital grade accreditation requires the reinforcement of its long-term mechanisms to ensure that hospitals persist in their drive for enhancement subsequent to successful accreditation. This necessitates ongoing optimization efforts, rendering the enhancement of hospital performance a sustained process.

6.2 Discussion on other research findings

The accreditation of medical institutions in many countries and regions in the world is mostly undertaken by third-party organizations, but basically the accreditation of hospitals in all regions is only formally conducted for one round, and only one on-site evaluation opportunity is used to determine whether the participating hospitals can pass the accreditation (Bahadori et al., 2013), which is limited by many factors such as the duration of accreditation and the number and profession of accreditation experts. It is one-sided to make decision only by one round of accreditation. China's traditional accreditation methods and the third-party accreditation modes carried out in cities such as Hainan Province and Zhejiang Province also maintain the practice of determining the hospital grade accreditation results by one round of accreditation. The new round accreditation for tertiary hospitals in G Province is the first attempt to explore the multi-stage accreditation model in China.

It is undeniable that the mode of conducting only one formal accreditation has the advantages of small workload, easy organization of personnel and simple process, but it is often easy to guide the participating hospitals to pay more attention to the results, and lead the hospital accreditation to a "sports battle". Dring the accreditation, the human and financial resources are concentrated to collect data, accumulate cases, supplement records, optimize the environment, and even to practice fraud and exaggerate their achievements (Zha et al., 2021). This approach seems to improve the quality of the hospital rapidly in a short time, but in fact, many problems and risks are hidden behind the improvement, which cannot help the hospital to truly find and solve problems. At the same time, the original normal order of medical work has been affected by the unexpected preparation of materials, which requires all hospital staff to work overtime and even give up their weekends. This results in the complaint of both medical staff and administrative staff, and even makes them hate hospital grade accreditation.

According to the new round of hospital grade accreditation in G Province, participating hospitals should go through at least three or more accreditation steps from their application to their final pass: self-assessment, pre-accreditation and formal accreditation. The participating hospitals can decide whether to accept the guidance before the pre-accreditation. According to the self-assessment results and their own needs, the participating hospitals can invite experts to help improve hospital quality before the pre-accreditation. Experts come to the hospital personally to give guidance and the hospital reaches a consensus with the accreditation experts on the understanding of accreditation standards and the interpretation of the accreditation terms.

The current problems and the direction of rectification are then clarified to improve the chance of passing the pre-accreditation and formal accreditation.

Through the analysis from the perspective of various stakeholders, this study believes that hospital grade accreditation is conducive to the improvement of the overall medical quality and safety quality of hospitals.

For participating hospitals, it is beneficial to fundamentally change the hospitals' understanding of medical quality and safety management, and hospitals can deeply benefit from the hospital grade accreditation. Changing hospital's working attitude of the accreditation is crucial to whether hospital grade accreditation can achieve the effect of improving the medical quality and safety or not. The new round of hospital grade accreditation undertaken by G Provincial Center of Hospital Management, Evaluation and Quality Control allows hospitals to achieve "carrying daily work in line with the tertiary hospital" and be accustomed to it, making scientific, standardized, and rigorous management models and medical behaviors good habits in daily life.

For hospital staff, passing hospital grade accreditation can encourage the hospital staff participating in the accreditation, including the hospital administrative staff and clinical medical staff, and the hospital grade accreditation also witnesses their continuous progress and improvement. The new round of hospital grade accreditation undertaken by the G Provincial Center of Hospital Management, Evaluation and Quality Control, focuses on the process of rectification of the participating hospitals rather than the results of the accreditation. The hospital grade accreditation is not rigid in whether the data reaches the standards, but emphasizes the management effect achieved compared with the past, which coincides with the purpose and ideal of "continuous improvement" of the new round of hospital grade accreditation. The hospital grade accreditation does not aim to deliberately find fault with the participating hospitals, nor to make trouble for the hospitals, but to help the participating hospitals gradually build a scientific and standardized medical quality and safety management system and continuously improve the medical safety and quality by taking the multi-stage accreditation model as a starting point (Kagan et al., 2016).

Hospitals accredited as tertiary hospitals can attract and treat more critical and severe patients, which will help doctors and nurses improve clinical diagnosis and treatment capabilities and accumulate clinical experience, thus promoting the growth of clinicians and nurses. Therefore, hospital grade accreditation can not only promote the continuous improvement of the overall medical quality and safety of the hospital, but also to promote the improvement of the clinical diagnosis and treatment ability of doctors, so that the hospital can

provide better medical services for patients. Therefore, the improvement of the medical quality and safety of the participating hospital can also benefit the hospital staff in all aspects.

For the hospital grade accreditation experts, the multi-stage accreditation model is also conducive to their work. The accreditation experts continue to drill the hospital with the ideal of "promoting reform and construction by evaluation, balancing evaluation and construction while focusing on connotation" through the multi-stage accreditation model, to improve the staff's awareness of continuous improvement thus forming a culture and habit, which makes the staff become spontaneously motivated to complete all daily work in strict accordance with the requirements of tertiary accreditation standards. At the same time, the accreditation experts also obtain more opportunities to practice through the multi-stage accreditation mode, and the accreditation experts can also advance their own ideal of hospital medical quality and safety management through continuous accreditation opportunities.

Therefore, hospital grade accreditation can bring numerous benefits to the stakeholders.

6.3 Theoretical contribution

Given the existing theoretical gaps in the literature regarding the impact of hospital grade accreditation on hospital performance and the practical questions around the understanding and application of the role and underlying mechanisms of hospital grade accreditation, this study adopts a stakeholder perspective. With the focus on the mechanism, through which hospital grade accreditation affects hospital performance, the study conducts interview research and case analysis with relevant cases.

The study initiates a comprehensive review of relevant literature on the hospital grade accreditation system, revealing a predominant focus on outcome variables, with limited research on mediating variables or mechanisms. The study posits that the hospital grade accreditation system, as a third-party evaluation system, influences hospital performance from both internal and external perspectives. Further literature review indicates that organizational legitimacy and organizational learning are crucial antecedent variables to organizational performance. Integrating these theoretical perspectives helps elucidate and clarify the mechanisms, through which hospital grade accreditation affects hospital performance.

The study takes the hospital grade accreditation in G Province as the main subject for interview research and case analysis. Interviewees are selected from various stakeholders, including hospitals, hospital administrators, government regulatory authorities, patients and their families, and healthcare professionals. Through multiple interviews conducted while we

serve as the hospital grade accreditation experts, extensive work notes and accreditation materials, totaling hundreds of thousands of words, are compiled. After assimilating and organizing the relevant materials, the study conducts three-level coding on interview notes, forming open coding, axis coding, and selective coding lists. Through further generalization, analysis, and refinement of related concepts and categories, seven core categories—norms, regulation, cognition, developmental learning, exploratory learning, medical quality, and medical safety are abstractly extracted. After clarifying the interrelationships among these core categories, hospital grade accreditation, and hospital performance, a theoretical model of grounded research is established. Following the mechanism through which hospital accreditation affects hospital performance, this model utilizes external legitimacy enhancement and internal organizational learning as mediators, with medical quality and medical safety as outcome variables. The model reflects multi-level causalities among core categories and reasonable relationships among different categories.

The study conducts a case verification analysis on the theoretical model derived from interview research. The findings support and validate the propositions and hypotheses formed based on the concepts and categories derived from interview research, indicating that the interview research model can explain real-world issues and possesses theoretical saturation.

The main contributions of this study are as the follows:

(1) After the National Health Administration of China issued the Detailed Rules for the Implementation of the Evaluation Standard of Tertiary General Hospitals (2011 Edition), this research takes the participating hospitals in the hospital grade accreditation of G Provincial Center of Hospital Management, Evaluation and Quality Control as an example, with the help of Stakeholder Theory. By evaluating the continuous improvement of medical quality and safety of the hospital, the administrative staff of the hospital, the clinical medical staff of the hospital, the hospital accreditation experts, patients and other stakeholders, this study for the first time analyzed and summarized the new round of tertiary hospital accreditation system and the process and evaluation results in G Province from multiple dimensions and multiple aspects. The new round of tertiary hospital accreditation in G Province was officially launched in 2015, and has gradually become stable and mature, and now it has been widely recognized by the participating hospitals in G Province. In the past, the hospital grade accreditation in most parts of China was led by the national or local provincial health administrative departments, so the results and data of most hospital grade accreditation were not made public. Therefore, so far, there is still no relevant research to evaluate the accreditation system and work progress in depth and detail from the perspective of stakeholder and practice. Most of the studies on hospital

grade accreditation in China often remain to summarize the evolution process of domestic hospital grade accreditation in China and comparing different versions of accreditation standards.

Starting from the course of hospital grade accreditation in China and considering the connotation of "continuous improvement" in the Detailed Rules for the Implementation of the Evaluation Standard of Tertiary General Hospitals (2011 Edition), this study expounds and interprets the new models and characteristics of the multi-stage, multi-level and multi-dimensional system of hospital grade accreditation developed by G Provincial Center of Hospital Management, Evaluation and Quality Control based on the ideal of "continuous improvement". It will help readers and staff engaged in professional research on the management of the medical and health industry to understand the context and operating mechanism of the policies, regulations, and rules of hospital grade accreditation in China. At the same time, this study summarizes the hospital grade accreditation completed by the G Provincial Center of Hospital Management, Evaluation and Quality Control, and qualitatively and quantitatively describes the impact of the accreditation work on the continuous improvement of medical quality and safety of the participating hospitals. The accreditation results are summarized to find the main problems of the participating hospitals, which can be used as a reference for the hospitals that have not yet participated in the accreditation to make better preparation before their application for hospital grade accreditation.

(2) Taking the participating hospitals in hospital grade accreditation as the object of this research, a case study is carried out to demonstrate the continuous improvement effect of hospital grade accreditation on hospital medical quality and safety. This study not only discusses the impact of hospital grade accreditation on the improvement of hospital medical quality and safety from the macro level, but also pays attention to the analysis of specific medical quality and safety indicators at the micro level. Some medical quality and safety monitoring indicators of several participating hospitals which have passed the formal hospital grade accreditation are selected for analysis, and the cases are used to demonstrate the effect of accreditation on the continuous improvement of medical quality and safety of the participating hospitals. Therefore, readers and even hospitals willing to participate in hospital grade accreditation can more intuitively understand the ideal and connotation of hospital grade accreditation. It can also provide more specific empirical basis for the G Provincial Health Commission and the G Provincial Center of Hospital Management, Evaluation and Quality Control to continuously improve the hospital grade accreditation work in the future.

6.4 Practice implications

6.4.1 Hospital grade accreditation needs to focus on a long-term mechanism for continuous improvement

It is known that if stakeholders of participating hospitals get involved in the hospitals' management of quality and safety, they will focus on the sustainable development of hospital quality and safety improvement while safeguarding their legitimate rights and interests. In addition, allowing stakeholders to participate in the accreditation of hospital quality and safety will not only improve the quality and safety of hospital services, improve patients' satisfaction with medical services, but also more importantly, enable stakeholders to have a long-term communication with the hospital, so that they can better understand each other, which is conducive to the sustainable development of the hospital. Stakeholder Theory explains the management activities carried out by enterprise managers in order to comprehensively balance the interests and requirements of various stakeholders, which helps the hospital return to a people-oriented and patient-centered development path. Therefore, hospital accreditation should be taken as an opportunity to help hospitals establish a long-term mechanism for hospital quality and safety management by improving hospital quality and safety management organizations, revising, and improving work rules and regulations, and conducting regular self-evaluation. G Provincial Center of Hospital Management, Evaluation and Quality Control expects to establish a long-term incentive mechanism for the continuous improvement of medical quality and safety for the tertiary hospitals. Not only should hospitals gradually establish a perfect and scientific hospital management system and focus on regulating medical quality and safety long before the accreditation, but they should also maintain the practices after the accreditation and strictly follow the accreditation standards in all of their work.

From the completed accreditation, the medical quality and safety of the participating hospitals have gradually improved during the period from self-evaluation to pre-accreditation and then to the formal accreditation. Participating hospitals have basically formed the awareness of continuous improvement and working methods before the formal accreditation. They have invested sufficient time, personnel, materials, and financial resources to establish and improve the hospital management system and medical quality and safety control (Heidemann, 2000). After passing the formal accreditation, the quality and safety monitoring indicators of the hospital still have good control effect in the short term. But after 2-3 months,

the control effect of some indicators begins to decline, which indicates that the current accreditation system has not yet formed a stable long-term mechanism for continuous improvement of medical quality and safety.

The accreditation results of participating hospitals show that the multiple types of stakeholders of hospital accreditation truly obtain some benefits. Continuous improvement of medical quality and safety plays an important role in enhancing the comprehensive strength of hospitals, branding the industry, improving patient satisfaction, and promoting health and harmony. But for hospitals, this is a heavy and long systematic work. Repeated instruction and guidance are needed to help staff form a habit of "completing daily work in line with the standard of the tertiary hospitals", which is difficult to maintain in the long run by relying only on the subjective consciousness within the hospital and must depend on external urging and supervision (Abdullah & Charles, 2010). In the new round accreditation in G Province, it is stipulated that hospitals will receive regular or irregular on-site supervision and review by experts from the G Provincial Center of Hospital Management, Evaluation and Quality Control after formal accreditation. However, this has not been formally implemented due to the lack of staff and energy. The G Provincial Center of Hospital Management, Evaluation and Quality Control has not been able to continue to carry out irregular review of hospitals that have gone through the three stages of self-evaluation, pre-accreditation, and formal accreditation to check whether hospitals can maintain the habit of continuous improvement, which is indeed the shortcoming and deficiency of the new round accreditation in G province.

6.4.2 Fully understand and attach importance to the interests of core stakeholders

The policy planning and making of the health administration agencies on the accreditation of hospitals will have a great effect on the future development of hospitals. The tertiary hospital, hospital at the highest level of the hospital grade accreditation, represents the best medical conditions, medical technology, medical services, and medical quality in the industry. It also means that that the government can give more preferential support policies for these hospitals. For example, the Ministry of Health clearly requires that the hospital which applies for the national key clinical specialty construction project should be a tertiary hospital. For each successful application of a national key clinical specialty, the state will grant a financial allocation of 5 million yuan for the specialty construction. After the project is completed, the state will uniformly review it. In addition, tertiary hospitals can purchase more high-end large-scale medical equipment, such as positron emission tomography magnetic resonance imaging system (PET-MRI), which is a new large-scale equipment integrating molecular imaging

technology (PET) and magnetic resonance imaging technology (MRI). PET-MRI is a Grade A large-scale medical equipment in China, and its configuration license is directly reviewed and issued by the National Health Commission of China. In order to avoid an oversupply of large medical equipment, there is a limited number of quotas for each review period. During the 13th Five-Year Plan period of China, only five PET/MR configuration licenses were issued in 2016. Because of the small quantity, the review of the configuration license of Grade A large medical equipment is basically implemented fairly and publicly. Therefore, if a hospital is not accredited as a tertiary hospital, it can barely become a candidate for the equipment. At the same time, there are also tertiary hospitals that enjoy more resources and funding for scientific research projects and more vertical and horizontal research projects because of their greater influence in the industry.

The accreditation experts, the main groups influencing the hospital accreditation, are defined as the definitive stakeholders. Stakeholder Theory explains the management activities carried out by the business managers to comprehensively balance the interests of various stakeholders. Among them, the stakeholders include the shareholders, creditors, employees, consumers, suppliers and other trading partners of the enterprise, as well as the pressure groups of government departments, local residents, local communities, media, environmentalists, and even the natural environment, future generations of mankind and other objects directly or indirectly affected by the business activities of the enterprise. The skills of the accreditation experts in finding and tracking problems during the accreditation process, as well as their ability of guiding and helping the hospital to improve continuously, will affect the final result of the hospital grade accreditation and the continuous improvement effect of the hospital during and after the accreditation. At the same time, the homogeneity of the accreditation expert's ability also plays an important role in the accreditation process. In the new accreditation model of G province, the homogeneity of the expert's profession can be guaranteed through the normalized training, to ensure the consistency and continuity of opinions given for the hospital's continuous improvement at all accreditation stages. Therefore, it is particularly significant to recognize and attach importance to the accreditation experts as the definitive stakeholders and ensure the standardization and homogeneity of the training of hospital accreditation experts.

For patients and their families who benefit from high-quality medical care, they are undoubtedly definitive stakeholders in hospital grade accreditation. Among hospitals, tertiary hospitals obtain a higher platform and greater reputation, so they can attract more high-end medical talents, and provide more effective and safe diagnosis and treatment and medical services for critical and severe patients. Therefore, patients with mild illness or critical and

severe illness prefer tertiary hospitals with more professional experts. The accreditation becomes an important basis for patients to choose medical institutions.

Hospital medical staff are also definitive stakeholders. Tertiary hospitals can attract more critical and severe patients, accumulate more high-quality sources of disease, and treat more severe patients, which will help doctors and nurses improve the clinical diagnosis and treatment and the accumulation of clinical experience, and promote the professional growth of clinicians and nurses. Therefore, hospital accreditation can not only promote the continuous improvement of the overall quality and safety of the hospital, but also promote the improvement of the clinical diagnosis and treatment ability of doctors, so that the hospital can provide better medical services for patients.

The reason why hospital administrators attach importance to the hospital grade accreditation is that the hospital grade accreditation conforms to the policy requirements of the superior health administration and actively cooperates with and supports the health administration to carry out relevant activities. In addition, the hospital administration also needs to improve the quality of medical service and the service attitude of medical workers, and enhance the trust and satisfaction of patients with the help of hospital grade accreditation. Because personnel management is also an important part of hospital management, the work attitude of hospital staffs, work quality and efficiency will directly impact hospital management. The hospital has established a more scientific performance appraisal system through the hospital grade accreditation, and has effectively planned for the staff's future development.

In addition, the health administrative departments and government departments are also definitive stakeholders, and the policies and regulations of the higher administrative departments provide requirements for the legal practice of hospital grade accreditation, manifesting the power. Hospital grade accreditation and hospitals themselves attach great importance to the rules and regulations and administrative instructions of their superiors which manifests the urgency. The health administrative department and government department, which has legitimacy, can promote the continuous improvement of the hospital, improve the medical quality and safety, improve the medical experience of the patients, and obtain the effect of improving people's livelihood through the hospital grade accreditation. Therefore, we need to fully understand the interests of certain stakeholders so as to carry out relevant work and clarify the direction and focus of hospital development.

6.5 Policy recommendations

Interviews were conducted with the leaders of the Medical Administration Office of the G Provincial Health Commission, the accreditation experts of the G Provincial Center of Hospital Management, Evaluation and Quality Control, the leaders of the participating hospitals and the staff keeping in company with the accreditation experts. With consideration of the renewal of the current hospital grade accreditation system, as well as the current situation of medical and health industry reform in G Province, the following recommendations and suggestions are put forward for the further improvement of the accreditation of tertiary hospitals in G Province.

First, in the preparatory stage, that is, before submitting the application for accreditation, the participating hospitals should strengthen their staff's study and understanding of the standards and rules of hospital grade accreditation. It is necessary to understand the connotation of the standards, rules and provisions of hospital grade accreditation promulgated by health administration departments, especially to closely follow the relevant policies of hospital grade accreditation of national and provincial health administration departments. The pre-accreditation is carried out in a multi-level, multi-stage, and multi-dimension way. Compared with the traditional accreditation, it does have overall advantages in improving hospital medical quality and safety management and related system construction. The hospitals accepting the pre-accreditation make improvements in the formal accreditation, and their medical quality and safety have been continuously improved. However, most of the participating hospitals do not understand the concept of continuous improvement in their self-evaluation and do not have a comprehensive and profound understanding of the evaluation standards and terms, which relatively affects the effect of continuous improvement and hinders hospitals from carrying out objective and fair self-evaluation, leading to a better self-evaluation result over the pre-accreditation. As a result, the participating hospitals undermined the self-confidence and enthusiasm of the hospital staff because of the performance gap between the pre-accreditation or formal grade accreditation and the self-evaluation. Therefore, only when the hospitals really understand the connotation of the terms and conditions of hospital grade accreditation, and understand why to do and how to do, can they fully implement the requirements of the provisions and achieve good performance. In view of this, this study suggests that before the pre-accreditation, all participating hospitals should actively invite the G Provincial Center of Hospital Management, Evaluation and Quality Control to organize accreditation experts to carry out guidance in the hospitals. In the initial stage, the experts should guide the hospital to

accurately grasp and understand the ideal and connotation of the hospital grade accreditation standards and terms to ensure that the participating hospitals' understanding of the provisions is homogenous and consistent with the accreditation experts. It can not only reduce the gap between the self-evaluation and pre-accreditation, but also avoid the waste of time and energy caused by the lack of understanding of the standards and terms of hospital grade accreditation. At the stage of pre-accreditation and formal accreditation, the experts can help hospitals to carry out preliminary rectification and preparation work more effectively, pertinently, and comprehensively, so as to achieve improvements after pre-accreditation and formal accreditation thus achieving the continuous improvement and spiral increase in hospital medical quality and safety.

Besides, it is necessary to ensure the institutionalization of the process and norms of hospital grade accreditation. Accreditation experts are the key body of hospital grade accreditation, affecting the effective implementation of accreditation process and system. In China, the reviewers of hospital grade accreditation are mainly health administrative departments, and reviewers assume the role of "coach" and "referee" at the same time, putting the objectivity of accreditation results in a greater risk. If there is a lack of clear and standardized selection methods and training for reviewers, it is difficult to realize common understanding of accreditation standards, leading to large deviations in accreditation results. Therefore, whether we can realize the purpose of continuous improvement, that is "promoting reform and construction by evaluation, balancing evaluation and construction while focusing on connotation", depends to a large extent on whether reviewers can carry out a comprehensive accreditation of the hospital's construction and management in a scientific, accurate and homogeneous way. Many experts and senior medical staff with rich experience in hospital management or hospital accreditation-related work have their distinct insights into hospital accreditation and evaluation. However, they may not always be able to understand requirements of the accreditation standards in a profound and detailed manner. Thus, they need to undergo unified training, and to be included in the final pool of accreditation experts only after passing the assessment, which can also maximize the fairness and impartiality of the hospital accreditation. At the same time, a series of norms should also be formulated, including the application process and accreditation schedule of the hospital grade accreditation, and no organization or person are allowed to arbitrarily change the accreditation schedule and path. Only by maintaining maximal institutionalization and homogenization can the legitimacy of participating hospitals be improved to the greatest extent with the help of external forces in a more rigorous manner. It is also beneficial to avoid the deformation of regulations, systems,

and industry norms during the implementation and to ensure the fairer and more impartial hospital grade accreditation so that the medical quality and safety can be enhanced in a more effective way.

Finally, hospital grade accreditation is an important part of hospital medical quality and safety management. Hospital grade accreditation should give full play to the long-term effect of continuous improvement featuring promoting reform and construction by evaluation, balancing evaluation and construction while focusing on connotation, so that the participating hospitals, hospital administrators and hospital clinical medical staff can continue to deeply understand and behave according to the standards of hospital grade accreditation, thus consolidating the medical quality and safety management system of the whole hospital. Finally, patients can get better medical services. Judging from the summary of the grade accreditation work in G Province that has been completed by the G Provincial Center of Hospital Management, Evaluation and Quality Control, as well as the specific medical quality and safety indicators of some participating hospitals, the new round accreditation of tertiary hospitals in G Province is conducive to the overall improvement of hospital medical quality and safety management and operation to a certain extent. It also contributes to the continuous improvement of some medical quality and safety indicators of the hospitals in a certain period of time, and at the same time, compared with the traditional accreditation, it does have overall advantages in improving hospital medical quality and safety management and the construction of related systems. For the participating hospitals that accept pre-accreditation, their results in the formal accreditation show a spiral improvement. Compared with that of self-evaluation, medical quality and safety have been continuously improved. However, viewing from the continuous monitoring results of the relevant medical quality and safety indicators of the participating hospitals, a stable long-term mechanism has not yet formed about the continuous effect of hospital grade accreditation on the continuous improvement of hospitals. Some negative medical and safety quality monitoring indicators gradually began to rebound two to three months after the formal accreditation. To handle this problem, the accreditation experts of the G Provincial Health Committee and the G Provincial Center of Hospital Management, Evaluation and Quality Control should instill the hospital leaders, hospital administrators and hospital medical staff of the participating hospitals with the continuous improvement concept of promoting reform and construction by evaluation in their guidance, pre-accreditation and formal accreditation. The importance of conducting routine work in line with tertiary hospital standards should be emphasized to improve the attention of all the staff of the participating hospitals to the medical quality and safety in the hospitals. In addition, in order to further

improve the hospital grade accreditation and promote the continuous improvement of the long-term mechanism and system of the hospitals, and to make the hospitals fully implement the ideal of promoting reform and construction by evaluation, balancing evaluation and construction while focusing on connotation, the health administration department of G provincial government or the entrusted party for hospital grade accreditation, such as G Provincial Center of Hospital Management, Evaluation and Quality Control, should establish the cycle system and process of continuous accreditation of participating hospitals as soon as possible. The regular or irregular accreditation should be conducted after the formal accreditation, so as to form a full cycle process of self-evaluation, expert guidance, pre-accreditation, formal accreditation and irregular review. After that, it can enter the next cycle of accreditation. Finally, a sustainable and long-term cycle system of accreditation-improvement-re-accreditation-re-improvement of hospital medical quality and safety management is constructed. The G Provincial Center of Hospital Management, Evaluation and Quality Control needs to strengthen the implementation of regular or irregular review and supervision on the participating hospitals that have passed the formal accreditation, and continue to supervise the participating hospitals to develop the PDCA cycle of finding problems, putting forward rectification and improvement plans, solving existing problems and summarizing improvements. At the same time, by means of big data information system networking and expanding the database of accreditation experts (Benor, 2000), regular evaluation and irregular supervision can be combined, and the monitoring of relevant indicators of hospital medical quality and safety and on-site tracking of hospital grade accreditation can also be combined. The irregular supervision and the monitoring of the big data index can be converted into scores to function as a part of the results of the next cycle of hospital grade accreditation, so as to urge the participating hospitals to insist on improving medical quality and safety between the period of passing the hospital grade accreditation and the next cycle of accreditation, thus contributing to a long-term incentive mechanism.

6.6 Research limitations and research prospects

As there is no previous research on evaluating the development of hospital grade accreditation in China from the perspective of Stakeholder Theory, this study is relatively novel and valuable. However, due to the constraints of time, region, other objective factors, and the ability of the researcher, further research is needed to ascertain the validity of the study. First, it is difficult to carry out homogenization training for accreditation experts in the early stage because it is

rather complicated and the COVID-19 pandemic has spread across China. Hence, G Provincial Center of Hospital Management, Evaluation and Quality Control completed a limited round of hospital grade accreditation. In particular, the number of participating hospitals that carried out formal accreditation directly without pre- accreditation is relatively small. As a result, the sample size used for comparative analysis and evaluation is small, and there may be some deviations. Second, when discussing the promoting effect of hospital grade accreditation on the improvement of medical quality and safety, the study selected hospitals that have passed the formal accreditation as the research subjects and there is a lack of indicators and data on hospitals that have not yet applied for a tertiary hospital accreditation. Therefore, only the participating hospitals that have passed the hospital grade accreditation have their own vertical comparison before and after the grade accreditation. However, there is no horizontal comparison with the hospitals that have not yet applied for the tertiary hospital grade accreditation, so the argumentation of this study needs to be further improved. Future research can collect more data from hospitals that have participated in accreditation and those that have not. More medical quality and safety indicators can be introduced to make the argument more valid, so as to evaluate the value and effect of hospital grade accreditation on the continuous improvement of hospital medical quality and safety more comprehensively, objectively and scientifically.

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Annex A: Expert Consultation Evaluation Form for Stakeholders of Hospital Grade Accreditation (First Round)

Basic Information Table of Experts

1. Age: _____ (1)<40 (2)40-59 (3) ≥60

2. Education background: _____ (1) junior college (2) undergraduate (3) postgraduate (4) doctor-postgraduate

3. Professional title: _____ (1) primary (2) intermediate (3) deputy senior professional title (4) senior professional title (5) other

4. Post: _____ (1) secretaries (2) cadre of division level (3) department level cadres (4) other

5. Professional field and years engaged: _____

(1) professional field: _____ years: _____

(2) professional field: _____ years: _____

6. Company: _____

7. Email: _____

8. Familiarity with the hospital grade accreditation system: _____ (1) well (2) familiar (3) ordinary (4) unfamiliar (5) very unfamiliar

Filling Explanation

The stakeholders of hospital level evaluation refer to individuals and groups who have specific interest demands in hospital evaluation, which can to some extent affect the achievement of evaluation goals or have an impact on the hospital evaluation process. The main purpose of this consultation is to identify the stakeholders involved in hospital level evaluation and classify them. Firstly, please make a selection on whether the individuals, groups, and institutions listed in the table belong to the stakeholders of public hospitals. If so, please mark "1"; if not, mark "0". If there are any candidate public hospital stakeholders that need to be supplemented, please add them in the following space.

Please evaluate the stakeholders of public hospitals (marked as "1") in terms of rights (referring to whether a certain stakeholder has the status, ability, and corresponding means to influence public hospital decision-making), legality (referring to whether a certain stakeholder group's right to claim public hospitals meets legal and moral requirements) Urgency (referring to whether the demands of a certain stakeholder group can immediately attract the attention of

public hospital management) is assigned a 5-point scale based on three dimensions. Among them, 5 points indicate the strongest power, legitimacy, or urgency, followed by 4 points, and 1 point indicates the weakest power, legitimacy, or urgency.

Expert Consultation Form for Stakeholder Classification in Hospital Level Review

Hospital grade appraisal stakeholders candidate classification	Whether they are stakeholders	Angle of evaluation		
		Power	validity	emergency
Hospitals				
Evaluation experts				
Patients and their families				
Hospital medical staff				
Hospital administrative staff				
The department in charge of health administration Government departments				
Suppliers of pharmaceutical consumables Schools				
Media				
Blood station				
Science and technology management department The public				
Trade associations				
Private medical institutions				
Ecological environment				
Consumer protection association Medical education institutions				

The basis for judgment: _____ (1) theoretical analysis (2) practical experience (3) Peer understanding (4) intuition

Whether the classification method is reasonable: _____ (1) reasonable (2) Basic reasonable (3) unreasonable

Stakeholders for hospital level review that can also be added: _____

Further improve the measures/option: _____

Annex B: Expert Consultation Evaluation Form for Stakeholders of Hospital Grade Accreditation (Second Round)

Basic Information Table of Experts

1. Age: _____ (1)<40 (2)40-59 (3) ⩾60

2. Education background: _____ (1) junior college (2) undergraduate (3) postgraduate (4) doctor-postgraduate

3. Professional title: _____ (1) primary (2) intermediate (3) deputy senior professional title (4) senior professional title (5) other

4. Post: _____ (1) secretaries (2) cadre of division level (3) department level cadres (4) other

5. Professional field and years engaged: _____

(1) professional field: _____ years: _____

(2) professional field: _____ years: _____

6. Company: _____

7. Email: _____

8. Familiarity with the hospital grade accreditation system: _____ (1) well (2) familiar (3) ordinary (4) unfamiliar (5) very unfamiliar

Filling Explanation

The stakeholders of hospital level evaluation refer to individuals and groups who have specific interest demands in hospital evaluation, which can to some extent affect the achievement of evaluation goals or have an impact on the hospital evaluation process. The main purpose of this consultation is to identify the stakeholders involved in hospital level evaluation and classify them. Firstly, please make a selection on whether the individuals, groups, and institutions listed in the table belong to the stakeholders of public hospitals. If so, please mark "1"; if not, mark "0". If there are any candidate public hospital stakeholders that need to be supplemented, please add them in the following space.

Please evaluate the stakeholders of public hospitals (marked as "1") in terms of rights (referring to whether a certain stakeholder has the status, ability, and corresponding means to influence public hospital decision-making), legality (referring to whether a certain stakeholder group's right to claim public hospitals meets legal and moral requirements) Urgency (referring

to whether the demands of a certain stakeholder group can immediately attract the attention of public hospital management) is assigned a 5-point scale based on three dimensions. Among them, 5 points indicate the strongest power, legitimacy, or urgency, followed by 4 points, and 1 point indicates the weakest power, legitimacy, or urgency.

Expert Consultation Form for Stakeholder Classification in Hospital Level Review

Hospital grade appraisal stakeholders candidate classification	Whether they are stakeholders	First round support (reference only)	Angle of evaluation					
			Power		Validity		Emergency	
			First round support (reference only)	Second round support	First round support (reference only)	Second round support	First round support (reference only)	Second round support
Government departments		91%	3.61		3.85		2.57	
Evaluation experts		100%	3.85		4.58		3.42	
Hospitals		100%	4.23		4.25		3.89	
Hospital administrative staff		95%	4.01		3.87		3.59	
Hospital medical staff		95%	4.36		4.06		3.96	
Patients and their families		100%	3.21		4.05		4.25	
The department in charge of health administration		95%	3.52		3.63		2.60	
Suppliers of pharmaceutical consumables		82%	2.86		2.74		2.59	
Schools		82%	1.90		2.63		2.79	
Blood station		77%	2.02		1.89		2.57	
Private medical institutions		64%	1.95		2.44		2.53	
Ecological environment		50%	2.08		1.91		2.78	
Media		77%	2.65		2.26		3.54	
Trade associations		64%	2.37		2.41		2.56	
The public		64%	2.19		1.83		2.07	

Science and technology management department	73%	2.48	2.06	1.80

The basis for judgment: _____ (1) theoretical analysis (2) practical experience (3) Peer understanding (4) intuition

Whether the classification method is reasonable: _____ (1) reasonable (2) Basic reasonable (3) unreasonable

Stakeholders for hospital level review that can also be added: _____

Further improve the measures/option: _____

The basis for judgment: _____ (1) theoretical analysis (2) practical experience (3) Peer understanding (4) intuition

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Annex C: Reviewers' Information

Reviewer	Nature of Work Unit	Department	Title	Post	Years of Service
Reviewer A	Government health administrative agency	Medical Administration and Management Department	/	Division Chief	23
Reviewer B	Government health administrative agency	Institutional Reform Department	/	Division Chief	30
Reviewer C	Government health administrative agency	Disease Prevention and Control Center	/	Division Chief	25
Reviewer D	Government health administrative agency	Policy and Regulations Department	/	Deputy Division Chief	23
Reviewer E	Government health administrative agency	Institutional Reform Department	/	Deputy Division Chief	28
Reviewer F	Government health administrative agency	Medical Administration and Management Department	/	Deputy Division Chief	22
Reviewer G	Government health administrative agency	Planning, Development and Information Department	/	Deputy Division Chief	23
Reviewer H	Government health administrative agency	Disease Prevention and Control Center	Deputy Chief Physician	Deputy Division Chief	25
Reviewer I	Affiliated tertiary medical institution	Medical Service	Associate Researcher	Division Chief	24
Reviewer J	Affiliated tertiary medical institution	Quality Evaluation Department	Associate Researcher	Division Chief	28
Reviewer K	Affiliated tertiary medical institution	Medical Service	Deputy Chief Physician	Deputy Division Chief	21
Reviewer L	Provincial tertiary medical institution	Medical Service	Associate Researcher	Deputy Division Chief	25

Reviewer M	Provincial tertiary medical institution	Nursing Department	Professor of Nursing	Division Chief	31
Reviewer N	Provincial tertiary medical institution	Quality Control Center	Deputy Chief Physician	Section Chief	25
Reviewer O	Municipal tertiary medical institution	Medical Service	Chief Physician	Division Chief	32
Reviewer P	Municipal tertiary medical institution	Quality Evaluation Department	Deputy Chief Physician	Deputy Division Chief	28
Reviewer Q	Municipal tertiary medical institution	Nursing Department	Professor of Nursing	Division Chief	26
Reviewer R	Municipal tertiary medical institution	Hospital Infection-Control Department	Chief Physician	Section Chief	28
Reviewer S	Provincial tertiary hospital	Gastroenterology	Deputy Chief Physician	/	27
Reviewer T	Provincial tertiary hospital	Respiratory Department	Deputy Chief Physician	/	25
Reviewer U	Provincial tertiary hospital	Urological Department	Chief Physician	/	33
Reviewer V	Provincial tertiary hospital	Orthopedics	Deputy Chief Physician	/	25
Reviewer W	Municipal tertiary medical institution	Pediatrics	Deputy Chief Physician	/	27
Reviewer X	Municipal tertiary medical institution	Gynecology	Chief Physician	/	28
Reviewer Y	Municipal tertiary medical institution	Cardiovascular Department	Chief Physician	/	29

Annex D: Table of Derivation Process of Interview Data Conclusions

Interview data	Theme Summaries	Deduced conclusions
In the new round of accreditation, the accreditation team no longer only examined the medical department, but also focused on our collaboration with logistic departments such as procurement and equipment management. This made us realize that medical quality assurance requires the participation of all supporting departments. The new accreditation standards explicitly require the establishment of an information-sharing mechanism among all functional departments to ensure that all examination reports and treatment plans of patients from admission to discharge can be timely transmitted to the relevant departments. This led us to collaborate with the Information Technology Department to establish a hospital-wide electronic medical record system. Through the experience of other hospitals, we found that the occurrence of major incidents is often related to insufficient communication among departments. Therefore, we held symposiums to find out how to strengthen interdepartmental collaboration to prevent the occurrence of such risk events. In the past, each department solved quality issues on its own, but through this accreditation, we realized that only full participation could truly solve the problem. We began to hold regular hospital-wide quality meetings to jointly study the problem. The new accreditation emphasizes whole-process management from the patient's admission to discharge, which requires the cooperation of colleagues in various positions. We began to arrange for joint duties across departments to monitor and resolve problems together. The occurrence of some quality events is often related to poor information transmission, requiring collaboration at all stages to resolve. We established a quality group, composed of personnel from different departments, to focus on quality issues. Medical quality is the result of the collective effort of the entire hospital and should not be the responsibility of individual departments or personnel alone. We have integrated this spirit into our daily work and assessment to truly achieve full participation.	Emphasis on hospital-wide collaboration in hospital grade accreditation Working together to solve medical quality problems	Hospital grade accreditation facilitates interdepartmental collaboration within the hospitals
In the past, there was an insufficient flow of information among our departments, which often led to duplicate examinations and other problems. The new accreditation emphasizes whole-process management, which has	Transitioning from fragmented operations to	

changed our previous fragmented situation, and we have begun to establish an information sharing mechanism among departments. We have realized that problems are often related to insufficient communication among departments. In the past, each department was only concerned about its own business but now we have begun to regularly hold cross-departmental meetings to collaboratively address problems. We have realized that medical quality is a systemic problem, not the fault of individuals, requiring the participation of the entire hospital to solve it. This recognition has changed our previous attitude of blaming others, and we have begun to develop a culture of teamwork.	collaborative practices	
Through this accreditation, we found deficiencies in the hospital's application of quality management tools, such as the low participation rate of quality control circle (QCC) activities, which are conducted only 1-2 times per month with few participants, primarily the medical staff, with insufficient involvement from administrative personnel. Moreover, the PDCA cycle does not run through actual work processes. Most efforts were confined to the checking and correcting stages, failing to form a closed loop. In response to the expert review results, the hospital organized a series of quality management trainings to help us fully understand the working principles of tools such as QCC and the PDCA cycle. The training not only covered the theoretical application of these tools but also showed us how to effectively apply these tools to various work links through real-life hospital cases. The hospital placed a high emphasis on this training which attracted the active participation of nearly a hundred managers from various departments, including administrative divisions. This was unprecedented in the past.	Emphasis on the application of quality management tools in hospital grade accreditation	Promoting mastery of quality management tools among administrative personnel
Through the training, we not only understood the significant role of these tools in enhancing work efficiency and quality but also mastered how to apply them to our own work. For instance, we began to try to utilize the PDCA methodology in departmental meetings to address some long-standing problems. After a period of practice, we observed significant improvements in quality management, with problems being resolved more swiftly and efficiently, which has greatly contributed to the enhancement of the overall quality of hospital work.	Active participation of administrative staff in quality management training	
Through this accreditation, we realized that the hospital exhibits deficiencies in the formulation of many work processes and operating procedures, such as variations in the operation of the same tasks by different personnel, indicating a lack of unified standards. The accreditation team highlighted issues in our hospital's institutional arrangements for tackling major incidents;	Emphasis on the importance of system construction in hospital grade accreditation	Encourage administrative staff to focus on system construction

and the absence of clearly defined procedures for incident reporting and disposal processes.		
The hospital established a system construction team led by the head of the administrative department, which is specifically responsible for sorting out and revising various work processes. Drawing on the excellent practices of other hospitals, we have refined some critical processes and clarified the responsible persons and the process nodes of each link.	Administrative staff emphasize institution-building efforts	
The accreditation team pointed out that our hospital Quality Committee and other professional committees were not convened frequently enough to fully play their intended roles. By observing other hospitals, we found that their professional committees all have clear annual work plans and regular follow-up evaluations.	Emphasis on the role of each professional committee in hospital grade accreditation	Improving the construction of various committees and the full realization of their functions
In response to the review opinions, our hospital revised the duty protocols of the professional committees and clarified the periodicity of meetings. Our hospital organizes committee members to learn and exchange activities to enhance their decision-making capabilities, ensuring that the committee fulfills its intended role.	Emphasis on enhancing the construction of various professional committees in the hospitals	
An analysis of the medical expenses from our hospital in recent years has revealed that in certain hospitalization expenses and examination items, charges are higher compared to those of other hospitals of the same level, indicating the potential for cost control. It is recommended that our hospital should strengthen its cost management for these services and reasonably control the expenses. By examining the execution of our hospital's budget for the current fiscal year, the accreditation team identified that the procurement quantities for some commonly used drugs exceeded actual needs, resulting in wasteful expenditure. Additionally, in equipment procurement, some equipment could not be put into use in time due to the lack of preliminary assessments of the actual needs of various departments.	Emphasis on indicators of hospital financial management in hospital grade accreditation	Motivating administrative staff to focus on and comprehensively enhance the hospital's financial management capabilities
Based on the feedback from the accreditation, our hospital organized a meeting with the heads of the financial department to deliberate on optimizing the management of medical equipment assets. It was decided to establish a comprehensive equipment ledger, which will accurately record information such as the procurement dates, service life, and maintenance records of each piece of equipment. Our hospital has adjusted its budget management approach, specified the leads of all major programs, and required them to report on budget execution to the financial department quarterly. Additionally, the financial department would follow up on and evaluate these reports.	Emphasis on improving financial management in the hospitals	

Our hospital arranged for financial personnel to participate in the learning and exchange activities held by other hospitals, and acquired effective practices in areas such as medical cost management, such as unified procurement of medical material and the promotion of low-cost drugs, and initiated similar efforts in our hospital to reduce costs.		
The accreditation team has pointed out that there are problems in evaluating the work of functional departments in our hospital, and that there is no mechanism for regular assessment. It is recommended that our hospital should conduct evaluations of the work accomplished by each functional department on a quarterly or semi-annual basis.	Emphasis on assessing the performance of functional departments in hospital grade accreditation	Assessing functional departments to strengthen their management competence
Our hospital has also set up a Functional Department Assessment Team, led by hospital leadership with heads of relevant departments such as finance and quality management as members. This team conducts quarterly inspections of the work performed by each functional department and provides assessment conclusions.		
Our hospital held a symposium to discuss how to assist the functional departments in need of improvement. It was decided that peer departments would provide guidance, and experts would be arranged to conduct training in these functional departments to enhance their management capabilities.	Emphasis on performance assessment of functional departments in the hospitals	
Our hospital has also incorporated the assessment of functional departments into the year-end evaluations of department heads and relevant responsible persons, to reinforce the requirements for the management of functional departments.		
Following the recommendations, our hospital established an Emergency Planning Team. After research and analysis, the team members identified the potential major emergencies the hospital could face, including fires, earthquakes, and widespread power outages. They also provided a qualitative analysis of the potential consequences of each type of event.	Emphasis on conducting hazardous vulnerability analysis (HVA) in hospital grade accreditation	Conducting HVA and strengthening emergency drills across functional departments
The accreditation team pointed out that our hospital had not categorized potential major emergencies nor conducted risk assessments, making it difficult to determine the focus of emergency planning. It was recommended that our hospital should undertake an HVA.		
Based on the results of HVA, our hospital has developed a Fire Emergency Response Plan. Additionally, all functional departments are scheduled to participate in fire emergency drills to check the implementation of the plan.	Emphasis on emergency drills in all functional departments in the hospitals	
During a power outage drill, it was discovered that improper operation of the backup power switch by the logistics department led to a power interruption in some intensive care units (ICU). Our hospital convened a meeting, arranged for the logistics department to conduct another drill, and corrected the problem.		
During the last accreditation, our hospital was identified as having deficiencies in nursing skills and practices	Emphasis on internal training	Repeated and intensive training

among medical staff. The hospital has decided to intensify its internal training efforts.	in hospital grade accreditation	to standardize behaviors
Our hospital has formulated an annual training plan, scheduling regular sessions for nurses at all levels to learn new nursing techniques and operational standards, along with training assessments.		
From time to time, our hospital organizes operational drills for medical staff to check whether training outcomes can be translated into behaviors in daily work.	Emphasis on evaluating training effectiveness in the hospitals	
Our hospital considers the training assessments of medical staff as an important indicator in the year-end evaluations to promote the application of training outcomes in their work.		
Our hospital has developed a detailed Emergency Surgery Operation Procedure Standards which provides explicit instructions for each step, including admission registration, filing of examination reports, pre-operative preparation, the surgical procedure, and post-operative care. Medical staff are strictly required to follow these procedural standards meticulously, without negligence.	Emphasis on adhering to medical standards in hospital grade accreditation	Standardizing medical diagnosis and treatment practices
During the last accreditation, our hospital was required to implement the national Clinical Pathway Management Standards and Surgical Operation Standards issued by the state. The accreditation experts pointed out that some of the surgical and nursing records in medical records were not completed in full compliance with these norms, and provided specific examples.		
Our hospital's year-end evaluation has identified adherence to medical standards by medical staff as one of the key indicators. For example, the extent to which surgeons follow surgical operation standards is incorporated into their annual performance assessment, with significant violations resulting in deductions from their scores or no year-end bonuses.	Emphasis on the effectiveness of applying medical standards in the hospitals	
Our hospital organizes weekly sessions where chief physicians of each department observe each other's surgeries and treatments to ensure strict adherence to standards, and criticize and correct if there is any non-compliance.	Emphasis on formulating and adhering to nursing standards in the hospitals	Promoting continuous improvement in nursing quality
Detailed Ward Nursing Standards have been formulated, which clearly stipulates the nursing procedures for various common diseases such as heart disease and diabetes. These standards detail the specific operational steps for each task and the considerations for each step. It also elaborates in detail on the importance of each step, potential problems that may arise, and the methods of response.		
It took two days to organize the nurses to study the standards. The training includes not only reading through the standards item by item but also arranging for clinicians to conduct drills and demonstrations on important tasks such as administering medication and changing dressings, to help nurses better grasp the operational details.	Emphasis on nursing quality management and assessment in the hospitals	
Our hospital conducts quarterly assessments of nurses in each ward, which cover over ten criteria, such as whether		

they strictly adhere to standards for all tasks; whether they timely find and correctly deal with patients' problems; and whether they receive positive feedback from patients and their families. The assessment outcomes serve as a critical reference for nurses' evaluations of performance and salary.		
Our hospital implements barcode management of the full process, whereby patients' wrist barcodes are scanned from admission to discharge, to ensure the correct examinations and treatments of patients. We have also acquired bedside terminals, which allow for the viewing of patient basic information and treatment plans through barcode scanning.		
Our hospital's ICU implement a dual-verification process. Before administering medication, infusions, or other critical procedures, medical staff are required to scan both the patient's wristband barcode and the medication barcode. The system automatically checks whether the patient's information matches to avoid errors.	Emphasis on patient identification and information management in the hospitals	
Through implementing electronic medical record (EMR) management, all examination reports, treatment plans, and other information are recorded in the patient's EMR. Medical staff can access patients' relevant information at any time by scanning barcodes, which is conducive to accurate diagnosis and treatment and enables a swift response to emergencies.		Enhancing patient safety management and critical value management capabilities through hospital grade accreditation
A detailed ICU manual has been developed, specifying the diagnostic and treatment procedures for various critical illnesses such as severe pneumonia and shock. Also, the manual defines the standards and frequencies for each monitoring item.		
Our hospital's ICU is equipped with multiparameter monitors that can continuously track vital signs such as blood pressure, heart rate, and oxygen saturation in real-time. An alarm is triggered immediately if there are any abnormal readings. Additionally, these monitoring data are collected to facilitate the assessment of patient's conditions at any time.	Emphasis on the management of critically ill patients in the hospitals	
ICU is staffed with a dedicated team of critical care nurses who have undergone specialized training to proficiently diagnose and handle various severe illnesses. This is advantageous for the timely identification and appropriate management of complications in critically ill patients.		
Our hospital has established a blood transfusion quality monitoring system, and selects several departments each month for inspections. The focus is on monitoring whether informed consent is obtained before transfusion, whether the application for transfusion is complete, and whether the transfusion process follows standard procedures.	Establishing a comprehensive blood transfusion management system	Utilizing hospital grade accreditation as an opportunity to enhance clinical blood transfusion management
Our hospital has also introduced a blood transfusion certification for clinicians and nurses, who are required to pass regular examinations to maintain in transfusion work. This approach is beneficial for enhancing and sustaining their clinical competence.	Enhancing the clinical blood transfusion skills of medical personnel	

Our hospital has also organized visits to blood transfusion centers for medical staff to learn about the various processes of blood testing. This is beneficial for their correct use of blood resources and enhancement of safety awareness.		
Our hospital conducts satisfaction surveys among discharged patients every six months. The surveys cover medical effects, the service attitude of doctors and nurses, and hospital environment and hygiene.	Conducting regular patient satisfaction surveys	Promoting hospital to focus on patient and family satisfaction with medical services
Our hospital also conducts satisfaction interviews with inpatients from time to time to understand their problems and dissatisfaction during the treatment process; so that timely improvement can be made.		
Through satisfaction surveys, we found that some patients were dissatisfied with the service attitude of the medical staff. In response, our hospital has carried out a round of service awareness training for medical personnel.	Improving medical services based on satisfaction survey results	

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Annex E: Primary Coding of Data

Defined phenomenon from the original material	First-order concept
The hospital uses outdated software versions without installing security patches in a timely manner, which may cause the system vulnerable. Hospital employees may lose or forget files or devices containing sensitive information in public places. Hospital information management needs to ensure the security of information systems and prevent information leakage.	Information security management
Errors may occur in the process of entering patient information, including errors or omissions in name, age, gender, contact information, and others. Some important patient information is missing from the electronic medical record system of a department in a hospital. Patient information is duplicated or redundant in the hospital system, leading to confusion and inconsistencies of information.	Patient information management
The use of hospital information system can improve the hospital's ability to collect and manage various data, including medical records, medical quality indicators, patient satisfaction, and others. The use of hospital information systems can help hospitals track and analyze problems and adverse events in the medical process, and help to identify potential risks and room for improvement. Different departments can share and view patients' medical record information through the system, improving the collaborative work efficiency among medical teams.	Information system
In the process of information sharing, there may be some obstacles and challenges, such as information silos, lack of standardization, technical differences, and others. Hospital grade accreditation involves a large amount of patient data and privacy information, including medical records, medical quality indicators, patient satisfaction, and others. Hospitals need to take steps to ensure the sharing of this sensitive information.	Information sharing
How hospitals can improve management efficiency through information system planning, such as achieving automation and process optimization, and improving data collection and analysis capabilities. For medical record management indicators, the planning of the hospital information system may need to include electronic medical record systems and related privacy protection mechanisms. Hospital information management needs to work with the information system planning department to ensure that the information system is consistent with the hospital's strategic goals.	Planning of the hospital information system
Hospital grade accreditation usually requires the provision of various data and indicators, such as medical quality indicators, patient satisfaction survey results, and others. Hospital grade accreditation requires the analysis and reporting of a large amount of data. Hospitals may use a variety of data analysis tools and reporting systems to process and present data, statistical software, data warehouses, and others.	Data management

Hospital grade accreditation usually requires employees to have certain knowledge and skills, as well as a sense of accreditation. The specific content and method of training for employees, such as regular training courses, professional guidance, and others. The specific strategies and measures of hospitals in staff management include encouraging staff to participate in the accreditation team, setting up a reward mechanism for staff to participate in the accreditation, and others.	Employee management
Providing training opportunities, developing promotion plans, and developing a mentorship system. An employee's career planning is closely related to job satisfaction and stability. Measures such as giving reasonable opportunities for promotion and providing challenging work projects.	Career planning
Due to the unique nature of hospital work, employees may face tremendous work pressure and psychological burden. Employees are often stressed to handle a large number of patients in a high-intensity work environment and are faced with tight schedules and heavy workloads. Employees are unable to receive support and guidance from their superiors or colleagues when they need to make decisions or deal with problems, leading to uncertainty and frustration at work.	Job burnout
Due to the replacement of the authoritative leader of the hospital, the new leader may introduce new ideas and management methods, and reform the hospital as a whole. Hospitals can merge or adjust existing departments to mobilize personnel and functions to improve organizational coordination and efficiency. Organizational change may also involve reshaping and adapting the hospital's culture and values.	Organizational change and development
Through regular work meetings and individual coaching, leaders clarify the work goals and tasks of their subordinates, and provide necessary training and resource support. Leaders engage in sufficient discussions and consultations with subordinates to jointly make decisions, or delegate decision-making power to subordinates, allowing them to make independent decisions and be responsible for execution. One leader may emphasize teamwork and employee development, encouraging innovation and autonomy, while another may place more emphasis on authority and discipline, with higher demands on work results.	Leadership behavior and decision-making
Medical teams across different departments need to consult and collaborate to develop patient treatment plans and share patient information and monitoring results in a timely manner. In the event of a medical emergency, teams in the emergency department, operating room, and ICU need to work closely together to ensure timely treatment and transport of patients. The hospital administration needs to have regular meetings with the clinical department to understand and solve administrative and management problems and keep information flowing.	Collaboration and communication management
The hospital provides a comfortable and clean environment, sets up a convenient appointment and registration system, and provides a warm service attitude so that patients feel respected and cared for. The communication between doctors and patients is clear. Doctors can provide detailed answers to patients' questions, and patients can	Hospital service quality

understand their suggestions and coordinate well with other hospital departments or doctors.	
The hospital has a sound medical safety management system doctors and nurses strictly implement hand hygiene and disinfection operations, and reduce human errors during patient medication and surgical operations.	
Doctors explain the diagnosis and treatment plan to patients in understandable language.	Doctor-patient communication and doctor-patient relationship
Patients share understanding and decision-making with their doctors through questions and discussions.	
Doctors can listen to patients' feelings and concerns calmly and patiently, and give support and encouragement so that patients feel understood and cared for.	
The management actively promotes the implementation of the hospital grade accreditation system, improves the quality and safety of medical care by establishing a sound management system, and encourages medical staff to actively participate in hospital grade accreditation.	Hospital management and organizational culture
The management does not pay enough attention to the implementation of the hospital grade accreditation system, is unwilling to change past management and work methods, and has a relatively conservative organizational culture.	
The initiate and enthusiasm of medical staff is not high, and the degree of attention to evaluation indicators is also low, resulting in the inability to effectively improve the service quality and comprehensive strength of hospitals.	
In some regions, as the hospital grade accreditation system is seen as an important way to improve the reputation and credibility of hospitals, it is actively supported and valued by social and cultural values.	Sociocultural factors
The public generally recognizes the importance of the hospital grade accreditation system, and has a high degree of trust in the grade accreditation results.	
Positive social and cultural factors have prompted hospital management and medical staff to pay more attention to the implementation of the hospital grade accreditation system, and continuously optimize the quality and safety of medical services.	
Hospital management and medical staff attach great importance to the hospital grade accreditation system, and actively take measures to improve the comprehensive strength and service quality of the hospital.	Medical system and health policies
The results of the hospital grade accreditation will directly affect the hospital's administrative license, medical insurance payment and other preferential policies, and at the same time, higher-level hospitals can also enjoy more medical resources and financial support.	
Hospital management and medical staff will actively participate in the implementation of the hospital grade accreditation system, and devote more resources and energy to meeting the accreditation criteria to obtain better ratings and policy support.	
The medical insurance system requires that insured hospitals meet certain grade accreditation standards, otherwise, they will not be able to enjoy preferential policies such as medical insurance payment and insurance compensation.	Medical insurance system and health insurance
In the medical insurance system of a certain region, it is stipulated that only hospitals that have reached a certain level can participate in the designated services of medical insurance and can be used as cooperative institutions for medical insurance payment.	
Hospital management and medical staff will actively participate in the implementation of the hospital grade accreditation system, and invest	

more resources and energy to meet the accreditation criteria, so as to obtain preferential policies such as medical insurance payment and insurance compensation, and increase hospital income and patients' choice of rights.	
The medical education and training policy requires medical schools and training institutions to closely integrate with the hospital grade accreditation system, and strengthen the education and training of medical students and medical staff, so as to improve the quality and professionalism of medical services. The trained medical students and trained medical staff have the professional knowledge and skills to meet the requirements of the accreditation criteria. The medical education and training policy encourages lifelong learning and continuous professional development of medical staff, and requires hospitals to closely integrate with the grade accreditation system to provide opportunities for continuing education and training for medical staff.	Medical education and training policies
In the process of implementing the hospital grade accreditation system, in order to improve its own grade, hospitals will actively promote medical technology and innovation policies to meet the accreditation indicators and standards. In order to improve the level of medical technology, the hospital can actively introduce advanced medical technology equipment, organize relevant technical personnel to train and learn, and even carry out cooperative research and technical exchanges with other medical institutions to improve the medical technology level of the hospital and meet the grade accreditation requirements. Hospitals may also implement innovation policies to encourage medical staff to actively participate in medical research and innovation projects, so as to enhance the hospital's scientific research capabilities and innovation level.	Medical technology and innovation policies
In the process of implementing the hospital grade accreditation system, the cultivation of medical professional ethics has become an important focus of the hospital. Through the implementation of this system, the hospital has prompted medical staff to pay more attention to the cultivation and practice of medical professional ethics. During the accreditation process, a hospital may find that medical staff have deficiencies in the protection of patients' rights and interests, honest medical care, and confidentiality. In order to improve the professional ethics and awareness of medical staff, the hospital may carry out a series of training and education activities.	Training of medical professional ethics
It is necessary to promote medical staff to actively abide by medical ethics, and strengthen the training and management of medical ethics within hospitals. Hospitals may strengthen moral education and training for medical staff, and guide medical staff to correctly understand and practice medical ethics by organizing the study of moral and ethical knowledge and case discussions. Hospitals can establish medical ethics committees or related bodies to supervise and investigate the ethical conduct of medical staff.	Code of medical ethics
Medical staff are encouraged to actively improve doctor-patient communication and pay more attention to the practice of professional ethics.	Doctor-patient communication and professional ethics

During the accreditation process, hospitals may find poor communication between doctors and patients, insufficient awareness of patient information confidentiality among medical staff, and some unethical situations. Formulating guidelines for doctor-patient communication, and clarifying the principles and norms that medical staff should abide by when communicating with patients, such as respecting patients' right to know, personal privacy, and autonomy.	
Promoting hospitals to actively fulfill their social responsibilities and carry out public welfare actions to give back to the society. Organizing medical staff to participate in free clinic activities, free health lectures, health check-ups and other public welfare services to provide medical resources and health knowledge to a wider group. Actively participating in social welfare projects, such as donating medical equipment and subsidizing the treatment of poor patients	Social responsibility and public welfare actions
Investigating medical staff's feelings of job satisfaction and occupational stress, and proposing improvement measures in response to problems, such as improving work processes, providing training and development opportunities, and improving working conditions. Establishing mechanisms to support medical staff in coping with occupational stress, such as providing psychological counseling, rationalizing work allocation, strengthening teamwork, and others. Strengthening professional ethics education for medical staff, and guiding medical staff to correctly understand and practice professional ethics through methods such as imparting moral and ethical knowledge and case analysis.	Work ethic and pressure
The wage and benefit level of medical staff is relatively low, resulting in high employee turnover and lack of motivation to work. Adjusting and improving the employee welfare system to meet the reasonable needs of employees. Raising wages and benefits, such as comprehensive health insurance, housing subsidies, paid leave, vocational training and development opportunities.	Employee benefits system
The implementation of the system provides incentives for medical staff to enhance their motivation and enthusiasm. Medical staff are not motivated to work, and there are problems such as high work pressure and lack of motivation. Implementing reward and commendation systems, such as providing bonuses for work performance, honorary titles for outstanding employees, and others, to recognize the outstanding performance of medical staff in medical services.	Employee motivation
Improving the working environment can include reducing work intensity, providing necessary equipment and resources, and establishing a good doctor-patient relationship. Hospitals can also establish regular performance evaluation and feedback mechanisms to evaluate and provide feedbacks on the work performance of medical staff, so as to stimulate self-motivation and promotion motivation of medical staff. In a hospital working environment, medical staff often face intense work pressure and challenges. The workload of medical staff in hospitals is often very high, as they need to deal with a large number of patients and complex conditions, as well as complete various medical tasks in a limited timeframe. This has led to an increased workload on medical staff, increasing their work pressure.	Working environment

Analyzing the legal and regulatory basis and policy guidance of the hospital grade accreditation system, such as the *Medical Institution Grade Accreditation Standards*. The implementation of the hospital grade accreditation system requires hospitals to operate and manage in accordance with specific requirements and standards, such as requiring hospitals to establish a sound medical quality management system and comply with relevant medical regulations and ethical norms. This system can guide hospitals to operate in accordance with the requirements of regulations and policies, and encourage hospitals to proactively comply with relevant regulations and policies. The hospital grade accreditation system puts forward specific requirements for hospital management, service quality, equipment operation, and others, and the regulatory authorities need to interpret the relevant regulations and policies and concretize them into hospital grade accreditation standards and guidelines. Hospitals need to follow these guidelines to ensure that their operations comply with regulations and policies.	Regulations and policies
Studying the law enforcement supervision and violation penalties of the hospital grade accreditation system by the drug regulatory department. Drug regulatory department, health supervision department, and others, as well as their supervision and inspection activities. The supervision and law enforcement agencies are responsible for supervising the implementation of the hospital grade accreditation system. For instance, the health supervision department are responsible for assessing and reviewing the hospital grade accreditation, ensure that the hospitals operate in accordance with the accreditation standards, and enforce the law enforcement penalties for violations	Supervisor of law enforcement and enforcement agencies
Analyzing the impact of information disclosure and transparency of hospital grade accreditation system on supervision and public evaluation. The hospital grade accreditation system requires hospitals to provide relevant information to the public, such as hospital service items, medical quality indicators, patient satisfaction survey results, and others. The content and method of information that hospitals need to disclose, such as requiring hospitals to regularly publish the handling of medical accidents, disease prevention and control measures, medical quality reports, and others.	Openness and transparency in the healthcare industry
The hospital grade accreditation system requires medical institutions to establish a sound management system, such as medical quality management system, safety management system, human resource management system, and others. The normative requirements promote the medical institutions to improve the standardization and effectiveness of management, so as to promote the continuous improvement of the hospital management system. Evaluating the management system of medical institutions, and examining the implementation of the hospital management system.	Management system of medical institutions
The hospital has introduced information technology and artificial intelligence to streamline and optimize medical processes, such as self-service registration machines, electronic medical record systems, and intelligent guidance systems. The hospital scientifically divides the roles of employees in different positions to improve the efficiency of collaboration and service quality. The hospital develops standardized workflows and operating practices to ensure the consistency and efficiency of medical services.	Hospital process optimization

Cross-disciplinary collaboration between different departments is conducted to address patients' comprehensive problems. Cardiologists and cardiac surgeons work together for to ensure patients' optimal recovery after surgery. Effective information sharing platform and coordination mechanisms are established to ensure timely communication and collaboration among all aspects of medical services. Doctors share patients' conditions and treatment plans through the electronic medical record system, and nurses are able to keep abreast of the patients' care needs. Doctors from different specialties accreditation and discuss difficult cases together through consultation to develop a more comprehensive and individualized treatment plan. The patients with heart disease may need consultation with doctors in multiple specialties, including cardiac surgery, cardiology, radiology and rehabilitation.	Hospital communication and collaboration
The hospital develops and promotes clinical guidelines to regulate doctors' medical practices during a particular disease or treatment. For patients with heart disease, a guideline for the diagnosis and treatment of heart disease has been developed, which sets out the best clinical practice procedures and treatment options. The hospital employs medical equipment that meets international or industry standards to ensure the accuracy and reliability of medical technology. The hospital purchases and uses certified blood pressure monitoring equipment to ensure the accuracy of blood pressure measurement results. The hospital provides regular technical training and quality control measures to ensure that medical staff are equipped to use the latest technology and ensure the quality of technical operations. The hospital organizes regular training sessions to help doctors and nurses master new surgical techniques or use methods of medical devices.	Medical technical specification
Establishing and implementing medical and health standards to ensure that the hospital's medical and health work meets the national and regional requirements. The hospital has strict hand hygiene standards in place, requiring medical staff to wash their hands before and after performing any medical procedure. The hospital implements a range of infection control measures to prevent and control the spread of infection within hospitals. The hospital has established an infection control committee to monitor and manage the cases of infection in the hospital, and to take appropriate isolation and disinfection measures. The hospital has established a standardized drug management system to ensure the quality and rational use of drugs. The hospitals have set up a pharmaceutical committee to be responsible for drug procurement, storage, distribution, and supervision to ensure the safety and effectiveness of drugs.	Medical and hygienic standard
The hospital evaluates and analyzes the training needs of medical personnel to determine the focus and direction of training. The hospital has conducted a survey of the medical knowledge and skills level of medical staff. A training plan will be set based on the survey results, with a focus on the diagnosis and treatment of difficult cases. The hospital has developed a detailed training plan, including training content, training time, training methods, and others. The hospital has developed an annual cardiac emergency training plan, which includes basic cardiac resuscitation skills and the latest first aid guidelines. The hospital allocates the necessary training resources, including training facilities, training instructors, and training materials. The	Medical personnel training standards

hospital has set up a simulated operating room to provide a training environment for medical students and doctors in surgery operation.	
The hospital develops and implements clinical pathways to standardize diagnosis and treatment processes and operational guidelines for specific diseases or treatments. For pneumonia patients, the hospital has formulated a clinical pathway for pneumonia, which stipulates the process and time nodes from condition assessment, auxiliary examination, and antimicrobial therapy to rehabilitation care. The hospital standardizes common diseases and routine diagnosis and treatment processes, and optimizes processes to improve the efficiency and quality of diagnosis and treatment. The hospital has developed a standardized diagnosis and treatment plan for common upper respiratory tract infections, including medical records, ancillary examinations, and drug treatment requirements. The hospital has established a multidisciplinary team to work together in diagnosis and treatment. In oncology care, the hospital has a multidisciplinary team consisting of oncologists, radiologists, radiotherapists, surgeons, and rehabilitation physicians to develop a comprehensive treatment plan.	Medical treatment process specification
Medical staff always respect the privacy and rights of patients and ensure that patients' personal information is kept confidential. Doctors maintain the privacy of patients during the diagnosis and treatment process, and do not disclose any personal health information of patients. Medical staff treat patients fairly and equally and provide impartial medical care regardless of race, gender, age, or social status. Doctors do not discriminate in diagnosing and treating patients, regardless of the patient's race, gender, or economic status. When faced with conflicting interests, medical staff always take the interests of patients as the starting point and maintain professional ethics and professionalism. When recommending a treatment plan, doctors prioritize the patients' health without being affected by financial interests.	Professional ethics of medical staff
Medical staff provide patients with adequate and accurate information to ensure that patients give informed consent to treatment options and treatment risks. Doctors explain the risks of the procedure and possible complications to patients in detail and obtains the patient's explicit consent. Hospitals should ensure patients' right to informed consent and respect patients' autonomy and decision-making rights. The hospital may has strengthened the patient informed consent procedures to ensure that patients fully understand the risks and benefits of treatment options.	Patient rights and medical ethics
The impact of the hospital grade accreditation system on the ethical responsibility of medical assistance. Hospitals may improve their awareness and ability to fulfill their ethical responsibilities in medical assistance by strengthening ethical education and training for medical staff. After the implementation of the hospital grade accreditation system, whether the distribution of medical assistance is more equitable. Hospitals may prioritize medical assistance based on the severity of a patient's illness and financial status to ensure that resources are appropriately allocated. Whether the hospital grade accreditation system can improve access to medical assistance so that more people can receive the necessary medical assistance. Hospitals may reduce medical costs and improve	Medical aid ethics

access to medical assistance for poor patients by establishing reasonable medical assistance policies.	
The medical ethics committee may adopt a diversified decision-making approach, including collective discussion, expert consultation, and reference initiatives. The medical ethics committee may be involved in medical decision-making, patient rights protection, doctor-patient communication, bioethics, and other issues. Whether the decisions and recommendations made by the medical ethics committee can be widely accepted and complied with by medical personnel.	Medical ethics committee
The extent to which public ethical issues are concerned in the medical field. Hospitals may place greater emphasis on public health and social welfare, focus on disease prevention and control, and promote health education. In a public health emergency, hospitals may need to balance the rights and interests of individual privacy and public health, and formulate appropriate ethical policies and measures. Applying the principles of public ethics to the development and use of medical technology to ensure that scientific and technological progress is consistent with the interests of society.	Public ethics
Research on the understanding and coping strategies of medical ethics in different cultural contexts. Encouraging medical staff to respect and tolerate different cultural ethics in order to provide more effective and sensitive health care. Medical staff may face communication difficulties with patients' families or encounter conflicting cultural and ethical perceptions in decision-making.	Cultural ethical diversity
Quantitative and qualitative evaluation of hospital performance is carried out with the help of indicators and accreditation criteria of the hospital grade accreditation system. Establishing incentives to encourage medical staff to actively participate in performance improvement and innovation. Regularly organizing performance report meetings, personal performance evaluation discussions, and others to communicate and provide feedbacks on performance results with medical staff.	Organization performance management
Adjusting strategies on personnel recruitment, training, and performance appraisal according to the requirements of hospital grade accreditation. According to the requirements of hospital grade accreditation, the number and allocation of medical staff are adjusted to meet the needs of medical services. Establishing a performance reward system and a career promotion mechanism to motivate medical staff to actively participate in work and provide high-quality services.	Organization human resource management
Shaping and conveying a positive organizational culture through cultural events and code of conduct for employees. Code of conduct for medical staff such as professional ethics, integrity, and responsibility. Encouraging leaders to lead by example and actively promote the construction and improvement of organizational culture.	Organization culture management
Hospitals may have dedicated staff responsible for data collection, document archiving, and information release to ensure that the accreditation process runs smoothly.	Decision-making processes and procedures

The hospital administration department will invite doctors, nurses, and patient representatives to participate in the development of the accreditation system to ensure that their voices are fully considered. When formulating the implementation rules, the hospital management may need to make decisions on issues such as accreditation criteria, accreditation frequency, and announcement of accreditation results.	
Hospital management need to explain the accreditation criteria and procedures to medical staff and patients in a timely manner, and provide relevant decision-making basis and explanations to increase the comprehensibility and acceptability of decision-making. Hospital management may invite medical staff, nurses, and patient representatives to participate in discussions and decision-making to ensure that the interests of multiple parties are balanced. Hospital management may focus on developing the overall framework and guidelines of the accreditation system, while assigning responsibilities for the development of specific accreditation procedures and standards to relevant departments or professionals.	Decision-making rights and responsibilities
For a large amount of decision-making information and data, it needs to be effectively stored and managed for future reference and use. Hospitals may establish databases or electronic filing systems to store data and documents related to the accreditation to ensure their accessibility and security. The analysis and interpretation of the collected data can provide deeper insights and a basis for decision-making. After the implementation of the accreditation system, the hospital management may conduct data analysis on the accreditation results, find potential problems and the direction of improvement, and make corresponding decision-making adjustments. The sharing and dissemination of decision-making information and data is an important way to ensure transparency and participation in decision-making. During the implementation of the accreditation system, hospital management may share the review results and related information with medical staff and patients through internal meetings, bulletin boards, e-mails or internal websites to promote mutual understanding and participation.	Decision information and data management
In the decision-making process, it is necessary to clearly formulate the objectives of the accreditation system and make necessary adjustments according to the actual situation. Hospital management may set the goal of the accreditation system to improve the quality and service level of care. But based on the actual accreditation results and feedback, the objectives need to be adjusted to meet the specific needs of the hospital. In order to achieve the decision-making goals, it is necessary to choose the appropriate strategy and develop the corresponding implementation plan. During the implementation of the accreditation system, the hospital management may formulate specific strategies to improve the quality of medical care and service levels, such as strengthening training and education, improving processes and systems, and others. Resource allocation and prioritization: In the decision-making process, it is necessary to allocate and prioritize resources reasonably to ensure the feasibility and effectiveness of implementation. In the implementation of the accreditation system, the hospital management may prioritize the allocation of human, material, and financial resources according to the availability of resources and the urgency of the demand to achieve the decision-making goals.	Decision goals and strategies

The decision-making environment has an important impact on the formulation and implementation of decisions. The legal and regulatory environment in which the hospital is located, the degree of policy support, medical resources, and talent situation will have an impact on the implementation of the accreditation system. In the decision-making process, risk assessment and management need to be carried out to reduce the potential risks of decision-making. In the formulation and adjustment of the accreditation system, the hospital management may assess the potential quality and safety risks and take necessary management measures to prevent the risks. There are a variety of stakeholders in the decision-making environment, and their participation needs to be encouraged and balanced. When developing the accreditation system, hospital management may invite medical staff, nurses, and patient representatives to participate in discussions and decision-making to ensure that the interests of all parties are balanced and respected.	Decision environment and risk assessment
Decision-making participation requires the establishment of an effective information communication and sharing mechanism to ensure the accurate transmission and understanding of relevant information. During the implementation of the accreditation system, the hospital management may organize internal meetings and workshops or use electronic communication tools to convey the relevant information and decision-making basis of the accreditation system to medical staff and patients. Decision-making participation involves the process of discussing and assigning decision-making power. During the implementation of the accreditation system, the hospital management may organize a discussion meeting for medical staff and patient representatives to express their opinions, and finalize the authority and responsibility of decision-making. Decision-making participation entails ensuring transparency and comprehensibility of decision-making to increase participant trust and satisfaction. During the implementation of the accreditation system, the hospital management may explain the accreditation criteria and procedures to the medical staff and patients, and provide relevant decision-making bases and explanations to increase the comprehensibility and acceptability of the decision-making.	Decision-making participation and communication
The management of the medical legal industry involves the formulation and implementation of the hospital accreditation system and related regulations and policies. The National Health Commission of the People's Republic of China may develop relevant regulations and guidance to clarify the objectives, standards, and procedures of the hospital grade accreditation system. The management of the medical legal industry involves the management of the hospital accreditation system as well as that of medical disputes and legal risks. During the implementation of the accreditation system, the hospital management may strengthen the prevention and management of medical disputes, ensure that the accreditation results are legal and valid, and avoid disputes or respond to disputes in a timely manner.	Medical legal industry management
Before the implementation of the hospital grade accreditation system, medical accidents were frequent and patient safety was threatened. The implementation of the hospital grade accreditation system has prompted hospitals to carry out more detailed medical risk identification	Medical security and risk management

and assessment, so as to effectively prevent and control potential medical risks. The implementation of the hospital grade accreditation system helps to improve the medical safety culture of the hospital, and the medical staff pays more attention to medical safety issues, creating a working atmosphere where safety is the priority.	
Strictly abiding by drug management regulations, rational use of drugs, and others, to improve the safety and effectiveness of drug use. Working in strict accordance with medical practice standards, such as wearing gloves correctly, disinfecting equipment, and others, to ensure medical safety. Medical staff improve their skills, such as participating in professional training and learning new medical technologies, in order to provide more accurate and advanced medical services.	Code of practice for medical personnel
The medical quality supervision regulations require medical institutions to conduct regular medical quality assessment and monitoring, such as assessing the level of medical quality through medical record reviews and patient satisfaction surveys. The medical quality supervision regulations emphasize the traceability and accountability system, medical institutions must conduct in-depth investigations on medical quality problems, hold relevant responsibilities accountable, and take corresponding corrective measures to improve the overall level of medical quality. Medical institutions establish a scientific and effective complaint handling and response mechanism, accept patients' complaints in a timely manner, and conduct investigation and handling to protect the legitimate rights and interests of patients.	Medical quality supervision regulations
Control of drug costs: Through the medical cost management system, hospitals can control the cost of drugs, such as reducing the reimbursement rate of drugs or restricting the use of specific drugs. The medical cost management system can standardize the use of various diagnosis and treatment items in the hospital and ensure reasonable medical services and expenses. The medical cost management system can promote the transparency of medical costs in hospitals, so that patients can clearly understand the costs they need to pay.	Medical cost management
Medical personnel improve their professional knowledge and skills by participating in academic conferences, training courses, and others. Medical professional training enables medical personnel to understand the latest developments in pathological science and laboratory technology, master relevant skills and methods, and use laboratory test results for diagnosis and treatment. Medical professional training encourages lifelong learning and personal growth, and medical personnel are constantly updating their knowledge and capabilities to adapt to developments and changes in the medical field by participating in continuing education and professional development programs.	Medical professional training
Continuing medical education enables medical personnel to understand the best practices and clinical guidelines, such as disease treatment protocols, drug use guidelines, and others, and apply them to clinical practice to improve treatment outcomes and patient satisfaction. Continuing medical education encourages medical personnel to participate in medical research and academic exchanges, such as publishing papers and participating in academic conferences, so as to stimulate their academic enthusiasm and innovation ability.	Continuing education

Continuing medical education focuses on the cultivation of teamwork and communication skills, and medical personnel improve their cooperation and communication skills with peers and patients by participating in team research projects and simulated scenario training.	
When faced with patients, doctors formulate an appropriate treatment plan based on the patients' conditions and clinical experience, including the selection of drugs, surgery, and others. When facing a patient with high blood pressure, the doctor should decide what kind of medication to prescribe to the patient based on factors such as the patient's age and the severity of the condition.	Clinical practice
Doctors diagnose and distinguish diseases through different clinical diagnostic techniques, such as imaging and laboratory tests. The doctor performs a CT scan to observe that there're abnormal shadows in the lungs of the patient, and then determine that the patient may have a lung infection.	
Doctors are constantly updating their medical knowledge and applying it to practical clinical operations to provide better medical care. After reading the latest medical journal articles, doctors can learn about a new drug regimen and apply it to the appropriate patient in their daily clinical practice for a trial treatment.	
Academic tutors and student guidance: Medical tutors guide students in research projects and impart clinical practice experience and academic knowledge. Medical tutors supervise graduate students in laboratory research and students in thesis writing and academic communication.	Academic exchange
Academic collaboration and interdisciplinary: Academic collaboration among medical professionals from different disciplines promotes interdisciplinary research and academic development. Psychologists collaborate with neuroscientists to conduct research exploring the effects of psychological factors on the nervous system.	
Academic resource sharing and knowledge dissemination: Medical professionals share academic resources, disseminate academic knowledge, and promote broad participation in medical research. Through open access, medical research teams share their research data and results with the global academic community to provide references for other researchers.	
Innovative scientific research and technological progress: The hospital actively promotes scientific research innovation and technological progress to improve the medical level and service quality. The hospital has set up a scientific research team to carry out research on new disease treatments and apply them to clinical practice.	Institutional innovation and management
Innovative management mode and method: The hospital adopts a new management mode and method to improve management efficiency and service quality. The hospital has introduced the "refined management" model to carry out fine decomposition and management of various tasks.	
Management team building and training: The hospital strengthens the construction and training of the management team to improve the management level and ability. The hospital holds management training courses to cultivate the professional knowledge and management skills of hospital management cadres.	
Technology introduction and transformation: The hospital introduces advanced medical technology and equipment at home and abroad to promote the transformation and application of technology. The hospital has introduced a high-precision radiotherapy system to provide patients with more advanced cancer treatment methods.	Technological innovation capability

Technology upgrading and updating: The hospital carries out technological upgrades and updates, constantly follows up scientific and technological progress, and improves the technical level. The hospital upgrades the existing medical equipment to accommodate new treatment needs and technical requirements. Innovation team and innovation culture: The hospital establishes an innovation team and encourages an innovation culture to cultivate the innovation capability and awareness of medical staff. The hospital has set up an innovation team to encourage medical staff to come up with ideas for new treatment options and technological improvements.	
By strengthening the cultivation of clinical research and scientific research capabilities, the hospital promotes the transformation and application of innovative achievements, improves medical quality and innovation capability, and has an impact on the implementation of the hospital grade accreditation system. Design and application of scientific research projects: The hospital carries out clinical research and scientific research projects, and conducts the design and application process of research topics. The hospital applies for the projects of National Natural Science Foundation of China through designing the research plan and submitting the application materials. Use of laboratory technology and equipment: The hospital supports clinical research and scientific research projects with laboratory technology and equipment. The hospital uses PCR technology for genetic testing to provide experimental data support for clinical research.	Clinical research and scientific research capabilities
By creating a positive innovation culture and atmosphere, hospitals can stimulate the innovation potential of medical staff and promote the play of innovation ability, which has an impact on the implementation effect of the hospital grade accreditation system. The hospital has developed clear values to encourage employees to demonstrate innovation in their daily work. The hospital regards innovation as an important means to improve medical quality and patient satisfaction, and incorporate it into the performance evaluation system. The hospital provides employees with the necessary resources and support to realize their innovative ideas. Hospitals can establish innovation funds to provide staff with research funding or project implementation support.	Innovative culture and atmosphere
By strengthening communication and cooperation capabilities, hospitals can promote collaboration and exchanges among medical staff, improve work efficiency and innovation ability, and have an impact on the implementation of the hospital grading system. The hospital works with the community, government, and other health institutions to provide integrated medical care. The hospital works with community health centers to carry out health education and disease prevention and control work. Teams within the hospital are able to participate in the decision-making process, build consensus and drive decision-making. When developing medical policies, hospitals can organize cross-departmental meetings to bring medical staff from different positions together to participate in discussions.	Communication and cooperation skills
The hospital cooperates with external institutions and enterprises and establishes innovation alliances to jointly promote the development of innovation capabilities. The hospital establishes cooperative relations with universities, scientific research institutions and pharmaceutical enterprises, to share	External cooperation and innovation alliances

innovative resources and technological achievements, strengthen cooperation and the cultivation and improvement of innovation capabilities, and exert an impact on the implementation of the hospital grade accreditation system.	
The hospital classifies and organizes the knowledge acquired for better management and utilization. Hospitals can establish a knowledge base and organize relevant literature and research results by disease classification.	Knowledge management processes
The hospital regularly evaluates and updates the existing knowledge to maintain the accuracy and timeliness of the knowledge. For example, hospitals can organize a knowledge assessment team to regularly review clinical guidelines and treatment options.	
The hospital analyzes the knowledge background and needs of medical staff to better meet their learning and development needs. Hospitals can use questionnaires or interviews to understand the needs of medical staff in specific areas of knowledge and provide them with appropriate training and learning opportunities.	
Applying knowledge management software and systems to achieve knowledge sharing and exchange.	Knowledge management technology tools
The hospital uses online collaboration tools, such as team collaboration platforms, online meeting software, and others, to facilitate collaboration and knowledge sharing across departments and remote teams. Doctors and nurses can use an online collaboration platform to share case discussions and expertise.	
The hospital develops mobile device applications, such as mobile medical platforms, medical retrieval tools, and others, to facilitate medical staff to access and apply medical knowledge anytime, anywhere. Doctors can use medical search apps to find relevant treatment guidelines and research literature in clinical practice.	
The hospital has set up a dedicated knowledge management team to drive the implementation and development of knowledge management.	Knowledge management team
The hospital has a dedicated knowledge management team, made up of cross-departmental professionals, who are responsible for knowledge management strategy and implementation. The team may consist of knowledge management specialists, information technology specialists, doctors, and nurses.	
The knowledge management team formulates the knowledge management strategy and objectives of the hospital and provides guidance for the implementation of knowledge management activities. Teams can identify specific goals for knowledge acquisition, sharing, and application, and develop strategies and plans accordingly.	
There may be differences in the allocation of medical resources in hospitals of different grades. Knowledge value assessment can reveal the impact of such differences on hospital service quality and patient satisfaction.	Knowledge value assessment
Through knowledge value assessment, it is possible to study the differences in clinical practice standardization among hospitals of different grades, and understand the impact of standardization level on medical quality and patient safety.	
Through knowledge value assessment, it is possible to study the differences in medical collaboration and referral among hospitals of different grades, and understand the impact of collaboration and referral capabilities on medical outcomes and patient experience.	
There may be differences in knowledge sharing and inheritance among hospitals of different grades, and knowledge culture and leadership can	Knowledge culture and leadership

affect the flow and transfer of knowledge within hospitals. Some high-grade hospitals have established knowledge sharing platforms and training mechanisms to promote knowledge exchange and experience sharing among medical staff, so as to improve the level of clinical practice. Knowledge culture and leadership can influence the construction of the learning organization of hospitals and promote learning and innovation within the organizations. Knowledge culture and leadership can influence the organizational change and development of hospitals, driving them to adapt to the external environment and future challenges.	
The process and mechanism for agreeing on a consensus and collaboration of knowledge between hospital internal staff and external partners. The basis for medical decisions is formed through the collaboration of multidisciplinary teams and expert consensus. Knowledge consensus and cooperation can promote consensus and cooperation between medical staff and patients, and realize patients' participation in medical decision-making and treatment plan formulation.	Knowledge consensus and cooperation
In the process of implementing the hospital grade accreditation system, hospitals may face an increased need to integrate the knowledge and experience of various departments or teams. Doctors in different departments may need to share the latest medical research results to improve medical services. Integrating knowledge from different research theses and clinical practices and determining its reliability and applicability through evaluation and screening. In order to effectively integrate knowledge, hospitals may adopt a variety of channels and methods.	Knowledge integration and screening
Applying new medical knowledge to clinical practice to improve the quality and effectiveness of medical services. The acquisition, creation, storage, dissemination, and application of knowledge is managed within the hospital. The hospital applies the acquired knowledge to clinical practice, scientific research and management. Hospitals can develop clinical guidelines based on the latest research results to guide the diagnoses and treatment plans of medical staff.	Knowledge application and transformation
The change of the follow-up rate of patients before and after the implementation of the hospital grade accreditation system: the follow-up rate of patients increased after the implementation of the accreditation system. The results of patient follow-up after the implementation of the accreditation system are analyzed, and the impact of follow-up on patients' disease recovery is analyzed. The follow-up methods vary, including telephone follow-up, face-to-face follow-up, and others. The changes in follow-up methods of hospitals of different grades after the implementation of the accreditation system.	Case follow-up and diagnosis rate of cases
The content type of the security incident report, covering medical negligence, medical equipment failure, drug error, and others. The changes in the content type of hospitals of different grades after the implementation of the accreditation system. Observing the changes in the reporting rate of safety incidents before and after the implementation of the hospital grade accreditation system:	Security incident reporting rate

the reporting rate of safety incidents has increased after the implementation of the accreditation system. The identities of reporters vary in the safety incident report, including doctors, nurses, patients, and others. The number of reporter identities has increased after the implementation of the accreditation system.	
The success rate of different types of surgery: the success rate of cardiac surgery is compared with that of general surgery after the implementation of the accreditation system. Preoperative preparation and success rate: observing the impact of preoperative preparation on the success rate of surgery, and evaluating whether the improvement of preoperative preparation improves the success rate of surgery after the implementation of the system. Comparing the changes in the surgical complication rate before and after the implementation of the hospital grade accreditation system, to understand the impact of the accreditation system on surgical complications, and whether the surgical complication rate has decreased after the implementation of the accreditation system.	Surgical success rate
Observing the impact of the accreditation system on the selection of treatment options for outpatient diseases to find out whether more effective treatment options have been adopted after the implementation of the accreditation system. Observing the impact of the accreditation system on the prevention effect of outpatient diseases to find out whether the prevention of outpatient diseases has been strengthened. Evaluating the effectiveness of the hospital grade accreditation system for outpatient surgery to find out whether the accreditation system has brought about an increase in the effectiveness of outpatient surgery.	Effectiveness of outpatient disease diagnosis and treatment
Observing the impact of the hospital grade accreditation system on surgical risk management to find out whether the surgical risk management mechanism is more perfect after the implementation of the accreditation system, so as to reduce the risk of surgical failure. The medical risk management mechanism requires hospitals to conduct a systematic assessment of medical quality, collect and analyze medical data, discover potential risks and take corresponding measures for improvement. The relationship between medical resource allocation and medical risk management mechanism: The medical risk management mechanism requires hospitals to allocate resources reasonably to ensure the adequate and appropriate use of medical personnel and equipment so as to reduce the occurrence of medical accidents.	Medical risk management mechanism
The hospital conducts in-depth analysis and research on adverse events, finds out the causes of the events, and formulates corresponding improvement measures to avoid the recurrence of similar events. The hospital punishes or discipline the medical staff involved in adverse events accordingly. Through such disciplinary behavior, the medical staff are made aware of the seriousness of their mistakes, thereby arousing attention for learning and improvement. Through the communication and feedback during the return visit, hospitals can better learn from them and improve the way and effect of adverse event handling.	Adverse event handling and learning
The hospital requires maintenance personnel to record the equipment maintenance situation and troubleshooting process for follow-up review and analysis, thus providing a reference and improvement basis for future troubleshooting.	Equipment maintenance and troubleshooting

The hospital has established an equipment maintenance process and is equipped with a dedicated maintenance team to deal with equipment failures in a timely manner and ensure the normal operation of medical equipment, ensuring the safety of patients. The hospital regularly tests the medical equipment, finds potential faults in time, and deals with them accordingly to ensure the reliability and safety of the equipment.	
The hospital conducts technical operation training to impart relevant skills and knowledge to medical staff, so that they can master the correct technical operation methods and specifications, and improve the accuracy and consistency of operation. The hospital conducts technical operation quality inspection, and through accreditation to check whether the technical operation of medical staff meets the specifications, so as to find problems in time and correct them. The hospital encourages teamwork among medical staff, develops standardized communication and collaboration processes, and ensures the coordination and smooth conduct of technical operations.	Standardization of technical operation
The hospital takes quality issues as opportunities for learning and improvement. Through case sharing and experience summary, the quality awareness and management level of medical personnel have been improved, improving medical quality. The hospital establishes a communication channel for quality issues, and conducts timely and effective communication and consultation among medical staff, so that they can jointly handle and solve quality problems to improve work efficiency and quality. When dealing with quality disputes, the hospital adopts appropriate communication and mediation methods, safeguards the legitimate rights and interests of patients, and addresses the problems to avoid the recurrence of similar problems.	Quality problem feedback and treatment
The hospital develops an improvement plan and tracks its implementation to ensure that the improvement measures are effectively implemented. The hospital has established a communication mechanism for improvement measures to ensure that the improvement measures can be effectively conveyed to the relevant medical staff and further ensure the consistency of implementation. Evaluating the improvements that have been implemented to understand their effectiveness and execution status, in order to determine whether further adjustments and improvement measures are needed.	Implementation of improvement measures

Annex F: Secondary Encoding of Data

First-cycle concepts	Definition	Second-level category
Information security management	Protection and management of information systems and data in hospitals	Information management
Patient information management	Management and maintenance of patient information in hospitals	
Information systems	Influence of hospital grade accreditation system implementation on hospital information systems	
Information sharing	Influence of hospital grade accreditation system implementation on hospital information sharing	
Information system planning	Planning and development of information systems in hospitals	
Data management	Data collection, storage, management, analysis and other aspects	
Staff management	Staff recruitment, training, performance evaluation, incentive mechanisms and other aspects	Career development
Career planning	Individual career planning, development paths, occupational satisfaction and related aspects	
Burnout	Research on work-related stress, job satisfaction, burnout, and other aspects	
Organizational change and development	Research on hospital change management, strategic planning, organizational development, and related aspects	Leadership and management
Leadership behavior and decision making	Leadership behavior, decision-making processes and leadership styles of hospital leaders	
Collaboration and communication management	Internal collaboration mechanisms, communication procedures, and team building in hospitals	
Hospital service quality	Research on hospital service processes, service attitudes and service effectiveness	Patient satisfaction
Doctor-patient communication and relationship	Research on the quality of doctor-patient communication, the establishment and maintenance of doctor-patient relationships, and other aspects	
Hospital management and organizational culture	Hospital management mechanisms, the impact of organizational culture on patient satisfaction, and other aspects	
Sociocultural factors	Research on the impact of sociocultural backgrounds on patient satisfaction, differences in patient expectations and needs, and other aspects	
Medical system and health policy	Construction and reform of medical systems, formulation and implementation of health policies, and other aspects	Medical policy

Medical insurance systems and health insurance	Reform and development of medical insurance systems, coverage of medical insurance and other aspects	
Medical education and training policy	Reform and management of medical education and training policy, improvement of physician qualities and professional competencies, and other aspects	
Medical technology and innovation policy	Research on guidance and support of medical technology and innovation policy, as well as technological progress and application of medical devices and pharmaceuticals	
Medical professional ethics education	Research on education models and training programs for professional ethics in medical education	
Medical ethical standards	Guidance of medical polices on professional ethics, formulation and implementation of medical standards, and other factors	
Doctor-patient communication and professional ethics	Research on doctor-patient communication quality, establishment and maintenance of doctor-patient relationships, and other aspects	Professional ethics
Social responsibility and public welfare activities	Research on medical staff's professional ethics, including social responsibility fulfillment and public welfare activities engagement	
Professional ethics and pressure	Impact of job burnout and occupational stress on the professional ethics of healthcare professionals, and coping strategies	
Employee welfare systems	Influence of hospital grade accreditation system on employee welfare systems	
Employee motivation	Influence of hospital grade accreditation system on employee motivation mechanisms	Labor relationship
Working environment	Impact of hospital grade accreditation system on hospital working environment	
Regulatory laws and policies	Regulatory laws and policies formulation process in the healthcare industry, including industry access requirements, service quality standards, safety regulations, and other regulations	
Supervision and law enforcement agencies	Investigation on law enforcement agencies and enforcement methods in healthcare industry regulation.	Industry regulation
Openness and transparency in the healthcare industry	Requirements and practices of information openness and transparency in the healthcare industry	
Medical institution management system	Regulation on organization structure, management processes and personnel allocation in medical institutions	
Hospital process optimization	Optimization and improvement of procedures within hospitals	Organization behavior
Hospital communication and collaboration	Communication and collaboration between departments in a hospital	
Medical technology standards	Medical technology operation standards, clinical diagnosis and treatment guidelines and other related factors	Medical standards
Medical and health standards	Standards and regulations related to the healthcare industry	

Medical talent training standards	Training requirements and standards for medical practitioners	Medical ethics
Medical diagnosis and treatment process standards	Standard requirements for diagnostic and treatment procedures within healthcare institutions	
Healthcare professional ethics	Ethical principles and professional standard to which healthcare professionals, including doctors, nurses, and medical technicians, should adhere	
Patient rights and medical ethics	Medical ethics involves the application of ethical principles and norms to medical behaviors and decision-making, with the aim of protecting the rights and well-being of patients.	
Medical aid ethics	Ethical considerations in situations of limited medical resources, including the fair allocation of resources and the minimization of patient suffering	
Medical ethics committee	Medical ethics committee, an institution responsible for the discussion and decision-making on medical ethical issues, is established to address challenging ethical problems, and providing consultation and advice.	
Public ethics issues	The relationship between medical ethics and public interest and ethical considerations in public health emergencies, such as vaccine distribution and public health intervention measures	
Cultural ethical diversity	Diversity and cultural sensitivity of medical ethics under different cultural backgrounds	
Organizational performance management	Goals setting, performance evaluation, and incentive mechanisms within an organization, including establishing performance assessment metrics and implementing reward systems	Organizational management
Organizational human resources management	Human resource planning, recruitment, training, and performance management within the organization, such as human resource strategies formulation and employee performance assessments.	
Organizational culture management	Values, code of conduct, shared beliefs within an organization, teamwork spirit and patient-centric culture in the hospital	
Decision-making processes and procedures	Internal decision-making processes and procedural regulations within the hospital, encompassing the convening of decision-making meetings, drafting decision documents, and the approval workflow.	Decision making
Decision-making authority and responsibility	Delineation of decision-making authority and the allocation of responsibilities within a hospital, such as the leadership's ultimate decision-making authority for significant decisions and each department's responsibility for corresponding decisions.	
Decision information and data management	Relevant information and data to be collected and organized during the decision-making process to	

	support the formulation and execution of decisions.	
Decision goals and strategies	Establishment of decision-making goals and selection of strategies within a hospital, such as setting hospital development objectives and determining market competition strategies	
Decision environment and risk assessment	Environmental context and risk assessment associated with hospital decision-making, such as evaluating related policies, market dynamics, and economic risks	
Decision participation and communication	Roles of participants and communication mechanisms in hospital decision-making, such as the individuals involved in decision-making meetings and channels for information sharing and communication	
Healthcare legal industry management	Relevant laws and regulations concerning the management of medical institutions, hospital management systems, and standards for healthcare quality management	
Medical safety and risk management	Laws and regulations related to healthcare safety and risk management, procedures for handling medical incidents, and methods for resolving medical disputes	
Medical practitioner standards	Laws and regulations relevant to the practice of healthcare professionals, such as codes of professional ethics for healthcare personnel, and regulations governing the registration of medical practitioners	Laws and regulations
Medical quality supervision regulations	Laws and regulations related to healthcare quality supervision, such as regulations on healthcare quality supervision and the reporting system for adverse medical events	
Medical expense management	Laws and regulations related to healthcare cost management, including measures for healthcare price management and regulations for medical insurance reimbursement	
Medical professional training	Professional learning provided by medical training institutions, internal training programs within hospitals, and academic seminars organized by medical associations	
Continuing education	Learning activities for healthcare professionals to continue their education and enhance their professional skills, including continuing education courses provided by medical associations and online learning platforms	Professional learning
Clinical practice	Professional learning in clinical practice, including guidance, training and case discussion sessions during internships	
Academic exchange	Learning in academic exchange activities, such as presentations and speeches at academic conferences, as well as reading scholarly journals	
Institutional innovation and management	Capacity for organizational innovation and management within the hospital, including organizational restructuring and the	Innovative capacity

	implementation of innovative management models	
Technological innovation capability	Hospital's innovation capability in medical technology and equipment, such as the introduction of advanced technologies and the development of new medical devices	
Clinical research and research capability	Hospital's innovation capacity in clinical and research domains, including the execution of clinical trials and the facilitation of research projects	
Innovative culture and atmosphere	Cultivation of a culture of innovation within the hospital, involving practices such as encouraging employees to propose new ideas and providing support for innovative projects.	
Communication and cooperation capability	Hospital's internal communication and collaboration capabilities, including interdisciplinary cooperation and teamwork	
External cooperation and innovation alliances	Collaborative partnerships established between different organizations, aiming at jointly engaging in innovative activities through the sharing of resources, knowledge and technology	
Knowledge management processes	Design and implementation of specific procedures and steps for knowledge management	
Knowledge management technology tools	Technological tools and platforms used by the hospital to support various aspects of knowledge management	Knowledge management
Knowledge management teams	Team and personnel responsible for hospital's knowledge management	
Knowledge value assessment	Methods and metrics employed by the hospital to assess and measure the value of knowledge	
Knowledge culture and leadership	Cultivation and development of a culture and leadership within the hospital for knowledge transformation	
Knowledge consensus and cooperation	Knowledge consensus and collaboration can impact the organizational effectiveness and work efficiency of a hospital, achieving synergies and high efficiency in hospital operations.	External knowledge transformation
Knowledge integration and selection	Hospital's process and methods for integrating and filtering knowledge from various sources.	
Knowledge application and transformation	Methods and processes of hospital's application of knowledge to practical work and the transformation into innovation and improvement	
Follow-up and revisit rate for cases	Research on the follow-up status of cases and changes in revisit rates following the implementation of medical quality review system	Medical quality assessment and monitoring
Safety event reporting rate	Changes in the rate of reporting safety incidents in hospitals of different levels following the implementation of the medical quality review system	
Surgical success rate	Examining the variations in surgical success rates among hospitals of different levels subsequent to the implementation of the medical quality review system	Specialized medical quality assessment

Outpatient disease diagnosis and treatment effectiveness	Impact of the medical quality review system on the diagnosis and treatment outcomes of different specialist outpatient clinics	
Medical risk management mechanism	Establishment and implementation of the medical risk management mechanism following the implementation of the medical quality review system in the hospital	Medical safety management and risk control
Adverse event handling and learning	Effectiveness of the medical quality review system in handling and learning from adverse events	
Equipment maintenance and fault processing	Comparing the situation of medical equipment maintenance and fault handling before and after the implementation of the medical quality review system.	Medical equipment and technology quality management
Standardization of technical operations	Degree of standardization in technical operations following the implementation of the medical quality review system	
Quality issue feedback and resolution	Feedback and resolution of healthcare quality issues after the implementation of the medical quality review system	Continuous improvement in medical quality
Implementation status of improvement measures	Implementation status of improvement measures after the implementation of the medical quality review system	

Annex G: Triple Coding of Data

Second-level category	Connotation	Overarching category
Information management	Analyzing the impact of the implementation of the hospital grade accreditation system on the management of hospital information.	Unifying cognitive thinking
Career development	Exploring the impact of the implementation of the hospital accreditation system on the professional development of healthcare personnel.	
Leadership and management	Studying the impact of the implementation of the hospital grade accreditation system on hospital leadership and management.	
Patient satisfaction	Examining how the implementation of the hospital grade accreditation system influences patient satisfaction.	
Medical policy	Investigating the impact of the implementation of the hospital grade accreditation system on healthcare policies.	Focusing on industry norms
Professional ethics	Analyzing the changes in the professional ethics of healthcare personnel resulting from the implementation of the hospital grade accreditation system.	
Labor relationship	Examining the impact of the implementation of the hospital grade accreditation system on the labor relationships of hospital staff.	
Industry regulation	Investigating the influence of the implementation of the hospital grade accreditation system on the regulation of the healthcare industry.	
Organizational behavior	Analyzing how the implementation of the hospital grade accreditation system brings about changes in the organizational behavior of hospitals.	
Medical standards	Examining the impact of the implementation of the hospital grade accreditation system on medical standards.	Compliance with laws and regulations
Medical ethics	Investigating the influence of the implementation of the hospital grade accreditation system on medical ethics.	
Organizational management	Analyzing the impact of the implementation of the hospital grade accreditation system on the organizational management of hospitals.	
Decision making	Examining the impact of the implementation of the hospital grade	

	accreditation system on the formulation of hospital decision-making processes.	
Laws and regulations	Exploring how the implementation of the hospital grade accreditation system affects the legitimacy of healthcare laws and regulations.	
Professional learning	Examining the impact of the implementation of the hospital grade accreditation system on the professional learning of healthcare professionals.	Innovative learning
Innovative capacity	Exploring the effects of implementing the hospital grade accreditation system on the innovative capacity of healthcare institutions.	
Knowledge management	Analyzing the impact of the implementation of the hospital grade accreditation system on the knowledge management within hospitals	
External knowledge transformation	Examining how the implementation of the hospital grade accreditation system affects the external transformation of knowledge within hospitals.	Applied learning
Medical quality assessment and monitoring	Process of assessing and monitoring the quality of healthcare services	
Specialized medical quality assessment	Specialized medical quality assessment, focusing on medical practices and treatment outcomes within a specific specialty field	
Medical safety and risk control	In healthcare institutions and throughout the healthcare service processes, a series of management measures and risk control strategies are implemented to ensure the safety and quality of medical services.	Medical quality and safety
Medical equipment and technology quality management	Management and monitoring process of medical equipment and technology quality	
Continuous improvement in medical quality	Efforts and improvement measures undertaken by hospitals and healthcare professionals to enhance the quality and safety of medical service	