INSTITUTO
UNIVERSITÁRIO
DE LISBOA

A TQM Approach to Healthcare Quality Management in China's County-Level Hospitals: A Case-based Research

GUO Tingjian

Doctor of Management

Supervisors:
PhD Virginia Trigo, Professor,
ISCTE University Institute of Lisbon
PhD JIANG Hong, Professor of Management,
Southern Medical University

July, 2022

BUSINESS
SCHOOL

Marketing, Operations and General Management Department

A TQM Approach to Healthcare Quality Management in China's County-Level Hospitals: A Case-based Research

GUO Tingjian

Doctor of Management

Supervisors:
PhD Virginia Trigo, Professor,
ISCTE University Institute of Lisbon
PhD JIANG Hong, Professor of Management,
Southern Medical University

July, 2022

BUSINESS
SCHOOL

Marketing, Operations and General Management Department

A TQM Approach to Healthcare Quality Management in China's County-Level Hospitals: A Case-based Research

GUO Tingjian

Doctor of Management

Jury:
PhD José Manuel Gonçalves Dias, Associate Professor with Habilitation,
ISCTE Instituto Universitário de Lisboa
PhD José Duarte Moleiro Martins, Coordinator Professor,
ISCAL Instituto Politécnico de Lisboa
PhD Wang Dong, Full Professor,
Southern Medical University of China
PhD Renato Jorge Lopes da Costa, Assistant Professor with Habilitation,
ISCTE Instituto Universitário de Lisboa
PhD Virgínia Maria Trigo, Emeritus Professor,
ISCTE Instituto Universitário de Lisboa

July, 2022

INSTITUTO UNIVERSITÁRIO DE LISBOA

A TQM Approach to Healthcare Quality Management in China's County-Level Hospitals: A Case-based Research

GUO Tingjian

iscte INSTITUTO UNIVERSITÁRIO DE LISBOA

Statement of honor

Submission of master's dissertation or project work or doctoral thesis

I the undersigned state on my honor that:

- The work submitted herewith is original and of my exclusive authorship and I have referred all the sources used.
- I give my permission for my work to be submitted to SafeAssign plagiarism detection tool.
- I am familiar with ISCTE-IUL Student Disciplinary Regulations and ISCTE-IUL Code of Academic Conduct.
- I am aware that plagiarism, self-plagiarism or copying constitutes an academic violation.

Full name: ...Guo Tingjian.....
Course: .....Doctor of Management.....
Student number: .....79284.....
E-mail address: ...gtnou@iscte.pt.....
E-mail pessoal: .....A668317@163.COM.....
Telefone: .....86-18968987001.....

Iscte, ...14.../...06.../2022

Signature 郭廷建 Guo Tingjian

[This page is deliberately left blank.]

Abstract

Health care quality is crucial to the sound operation and competitiveness of hospitals. However, Chinese county-level hospitals are still faced with many health care quality management problems manifested as: lack of a sound quality control system, inadequate system development, lagging management tools, insufficient health care quality management awareness and lack of service awareness. Due to these problems, the health care needs of patients are not effectively met, hindering the high-quality development of county-level hospitals.

This thesis qualitatively analysed the application of total quality management (TQM) theory to the health care quality management of a county-level hospital in Zhejiang Province, China based on data collected from in-depth interviews with staff and patients of the case hospital.

The findings showed that: the case hospital's use of TQM for health care quality management was effective, and TQM is applicable to health care quality management in county-level hospitals; the case hospital's TQM implementation was not sufficient, and there were still problems such as insufficient leadership commitment, insufficient team building, imperfect system development, inadequate health care quality management awareness, unsmooth teamwork, insufficient patient-centredness, and deficiencies in education and training. Based on the findings, this thesis advises Chinese county-level hospitals to improve health care quality management from five aspects, namely leadership commitment, continuous quality improvement, patient centredness, teamwork and quality training, which are also the core dimensions of TQM. The results provide theoretical support for improving health care quality in Chinese county-level hospitals.

Keywords: Total quality management; healthcare quality; Chinese county-level hospitals
JEL: I10; M19

[This page is deliberately left blank.]

Resumo

A qualidade dos cuidados médicos é crucial para o bom funcionamento e competitividade dos hospitais. Contudo, os hospitais municipais chineses (county level) enfrentam muitos problemas, designadamente a ausência de um bom sistema de controlo de qualidade, desenvolvimento inadequado, instrumentos de gestão desfasados e consciencialização insuficiente do que é a gestão da qualidade. Devido a estes problemas, as necessidades dos pacientes não são efetivamente atendidas, dificultando o desenvolvimento da qualidade deste tipo de hospitais.

Utilizando uma abordagem qualitativa (entrevistas em profundidade ao pessoal médico e a pacientes) esta tese estuda a implementação da gestão total da qualidade (TQM) num hospital municipal da província de Zhejiang, China, no sentido de saber os resultados dessa implementação, as dificuldades encontradas e a viabilidade da utilização do sistema neste tipo de hospitais. Os resultados mostram que este hospital aplica a TQM de um modo eficaz demonstrando que a TQM também é aplicável em hospitais municipais. Contudo existem ainda problemas, tais como um compromisso insuficiente da liderança, falta de estabilidade das equipas, sistemas de desenvolvimento imperfeitos, consciência inadequada da gestão da qualidade dos cuidados de saúde, insuficiente atenção centrada nos pacientes, e deficiências na educação e formação do pessoal. Com base nos resultados de investigação, conclui-se que os hospitais municipais Chineses podem melhorar a sua gestão através da TQM dando particular atenção a um maior compromisso da liderança, melhoria contínua da qualidade, atenção focada no paciente, trabalho de grupo e formação na área da qualidade. Os resultados fornecem apoio teórico para a melhoria da qualidade dos cuidados médicos nos hospitais municipais Chineses.

Palavras-chave: Gestão total da qualidade; qualidade dos cuidados médicos; hospitais municipais Chineses

JEL: I10; M19

[This page is deliberately left blank.]

摘　要

医疗质量对医院的正常运行和竞争力而言至关重要。然而，目前中国县级医院在医疗质量管理实践中存在诸多问题，具体表现为：质控体系建设不完善，制度建设不到位，管理手段滞后，医疗质量管理意识不足和服务意识有所欠缺。这些问题导致患者的医疗需求不能得到有效的满足，制约了县级医院的高质量发展。

本文以中国浙江省某县级医院为例，通过与案例医院的员工和患者进行深度访谈的方式收集了数据，定性分析了全面质量管理理论在案例医院医疗质量管理中应用情况。

本研究发现：案例医院运用 TQM 开展医疗质量管理是有效的，TQM 适用于县级医院医疗质量管理；案例医院 TQM 实践并不充分，还存在领导重视不够、队伍建设不充分、制度建设不完善、医疗质量管理认识不充分、团队协作不畅、以患者为中心做得不够以及教育培训存在短板等问题。在研究发现的基础上，本文建议中国县级医院从领导重视、持续质量改进、以患者为中心、团队协作、质量培训等 5 个方面来提高医疗质量管理水平，这也是中国县级医院实施 TQM 的核心维度。本文的研究结果为提升中国县级医院医疗质量管理的水平理论支撑。

关键词：全面质量管理；医疗质量；中国县级医院

JEL: I10; M19

[This page is deliberately left blank.]

Acknowledgements

In 2016, I applied for and was admitted into the Doctor of Management in Healthcare (DMH) Program jointly held by Southern Medical University (SMU) and Iscte-University Institute of Lisbon (Iscte-IUL) in Portugal. Over the past few years of this DMH journey, I have experienced the profound humanistic heritage and the rigorous academic atmosphere of Iscte-IUL and SMU. The modern management concepts of both universities have deeply enlightened my thinking and enriched my thoughts, guiding me to make great strides along the path of modern management concepts.

First, I would like to express my special thanks to my Portuguese supervisor Professor Virginia Trigo, who is not only rigorous, straightforward and erudite, but also has a strong sense of responsibility and a rigorous work attitude. Professor Trigo not only taught me knowledge in public health policy and management, but also enabled me to become a manager capable of applying modern management thinking and methods to hospital management practice. Moreover, she taught me to pursue truth with a pragmatic and down-to-earth attitude, turning me into a researcher willing to devote myself to the study of public health policy and management. The DMH journey may end, but my life-long learning has just started. In my future work life, I will always follow the example of Professor Trigo and strive to be a life-long learner in new era that lives up to the expectations of the times.

My special thanks also go to Professor Nelson António, who co-guided me throughout the entire process of the DMH journey, from topic selection to thesis revision to thesis finalisation. He helped adjust my research framework and provided accurate guidance on interview design, identification of research innovations and qualitative data analysis. During the thesis writing process, Professor António placed full trust in me and encouraged me to write and experiment, so that this thesis was successfully completed.

I am grateful for my Chinese supervisor Professor Jiang Hong for the feast of knowledge she brought to the courses, which enabled me to effectively learn professional knowledge and expand my horizons. During the thesis writing process, Prof. Jiang gave valuable advice on the topic selection, thesis structure arrangement, research direction and research methods and played a key role in correcting my tendency to stray from the topic and improving the details of my thesis.

My gratitude also goes to Professor Liu Yuanli, Professor Xia Weidong and all the other Chinese and Portuguese teachers who gave us lectures. The richness and diversity of their courses allowed me to fully appreciate the profundity of modern management, further enlightened my thinking, broadened my horizons, laid a solid foundation for my comprehensive knowledge of management, and provided me with valuable knowledge for my own study.

I appreciate the days spent with all my fellow students who accompanied me through my DMH journey. Some were innocent and open-minded; some were optimistic and resolute; some were strong; and some were gentle. They always cared for me and encouraged me. I am indebted to all my hospital colleagues who participated in the interviews and my English translator Ms. Chen Feng for helping me complete my research.

Finally, I would like to thank my parents, my wife and my children who encouraged me and helped me throughout this journey. It was their support and encouragement that motivated me to move forward when I was tempted to give up due to work pressure.

This thesis is dedicated to all the people who have given me help and support along the journey.

致　谢

2016 年，我申请报考了南方医科大学（SMU）与葡萄牙里斯本大学学院（Iscte）合作开办的“公共卫生政策与管理博士学位项目”，并顺利通过。在这几年的博士学习中，我感受到了里斯本大学以及南方医科大学厚重的人文底蕴、严谨的学术氛围，两所大学的现代管理理念也深深启迪着我的思维，熏陶着我的思想，指引我在现代管理理念的道路上大踏步迈进。

在此，我要特别感谢我的外方导师 Virginia Trigo 教授，Virginia Trigo 教授不仅治学严谨、品性率直、知识渊博，还有强烈的责任感和严谨的工作态度，Virginia Trigo 教授不仅传授我公共卫生政策与管理方面的知识，让我成为能够将现代管理思想与方法应用于医院管理实践的管理者；更教会我要以求真务实、脚踏实地的态度去追求真理，让我成为了一名愿意致力于公共卫生政策与管理研究的学术研究者。在学校学习的时间有限，而漫漫人生的学习才刚刚开始，在今后的工作生活中，我将始终以 Virginia Trigo 教授为榜样，努力做一名不负时代、不负韶华的新时代奋斗者。

我要特别感谢 Nelson António 教授，自论文开题以来，不论是在论文选题、修改到最终的定稿，Nelson António 教授始终全程参与、全程指导，为我的论文框架搭建、创新点提炼、访谈提纲的设计、质性数据分析提供了无私帮助，我从中受益匪浅。在论文写作过程中，Nelson António 教授给予我充分信任，支持和鼓励我大胆动笔，大胆尝试，使论文的写作顺利完成。

我要特别感谢中方导师姜虹教授，您精心备课带来的知识盛宴，使我有效学习到专业知识并拓展了视野。特别是在论文写作期间，您对论文的选题、结构安排、研究方向、研究方法等提出了宝贵的意见，及时纠正了论文的错误倾向，弥补了论文的不足之处，起到了关键的指导作用。

我还要感谢刘远立教授、夏卫东教授等所有给我授课的中方和葡方老师，你们的课程丰富多彩，让我充分领略到现代管理学的博大精深，进一步启迪了我的思维，开阔了我的视野，为我全面掌握管理学的知识打下了坚实的基础，也为我论文的研究提供了宝贵的知识积淀。

我要感谢所有陪伴我完成博士学业的同学，你们有的纯真豁达，有的乐观坚毅，有

的气势如虹，有的温文尔雅，你们一直关心着我、鼓励着我。特别感谢所有参与访谈的医院同事，以及论文的英文翻译陈风女士，得益于你们的帮助才使我的学业顺利完成。

最后，我还要感谢我的父母、妻儿，在我求学过程中由于工作压力等原因几欲放弃学业，是你们及时给予我鼓励，并为我排忧解难，支持我奋然前行，顺利完成学业。

谨以本文献给所有在博士生涯期间给予过我帮助和支持的人们！

Contents

Chapter 1: Introduction 1
1.1 Research background 1
1.1.1 Contextual background 1
1.1.2 Theoretical background 6
1.2 Research problem 8
1.3 Research purpose 9
1.4 Research questions 9
1.5 Research significance 10
1.5.1 Theoretical significance 10
1.5.2 Practical significance 11
1.6 Research methods 12
1.7 Thesis structure 13
1.8 Summary 14
Chapter 2: Literature Review 15
2.1 Health care quality 15
2.1.1 The concept of health care quality 15
2.1.2 Models of health care quality dimensions 17
2.1.3 Health care quality evaluation index systems 22
2.1.4 Factors influencing health care quality 25
2.1.5 Summary 26
2.2 Health care quality management 27
2.2.1 Definition of health care quality management 27
2.2.2 Development history of health care quality management 29
2.2.3 Health care quality management models 33
2.2.4 Practical dimension of health care quality management 37
2.2.5 Summary 39
2.3 An overview of total quality management (TQM) 40
2.3.1 Definition of TQM 41
2.3.2 Constituent dimensions of TQM 43
2.3.3 The main methodological steps for implementing TQM 46

2.3.4 Application of TQM in practice 50
2.3.5 Summary 51
2.4 Application of TQM in health care quality management 52
2.4.1 Connotation of TQM in health care quality management practices 52
2.4.2 Steps for implementing TQM in health care quality management practices 53
2.4.3 Dimensions of TQM in health care quality management practices 55
2.4.4 Reasons for the failure of TQM in health care quality management practices 58
2.4.5 Summary 60
2.5 Summary 61
Chapter 3: Interview Design and Implementation 65
3.1 Sampling procedure 65
3.2 Research methods 67
3.2.1 Interview outline design 68
3.2.2 Participants 69
3.3 Ethical considerations 71
3.4 Pilot interviews 72
3.5 Summary 74
Chapter 4: Results and Discussion 77
4.1 Interview implementation 77
4.2 Interview transcription 80
4.3 Data analysis 81
4.3.1 Data analysis process 81
4.3.2 Coding process 83
4.4 The status of TQM implementation in the case hospital 92
4.4.1 Leadership commitment status in the case hospital 92
4.4.2 Continuous quality management commitment status in the case hospital 95
4.4.3 Education and training status of the case hospital 98
4.4.4 Status of patient-centredness in the case hospital 100
4.4.5 Status of teamwork in the case hospital 101
4.5 Existing problems in the TQM implementation in the case hospital 102
4.5.1 Lack of leadership commitment 102
4.5.2 Insufficient development of the health care quality management team 103
4.5.3 Imperfect quality management system 104
4.5.4 Lack of awareness of health care quality management 105
4.5.5 Inadequate teamwork 106

4.5.6 Inadequate focus on patient-centredness 107
4.5.7 Insufficient quality training 108
4.6 Coping strategies to address TQM implementation problems in the case hospital ... 109
4.6.1 Increase leadership commitment and the quality awareness of all staff. 109
4.6.2 Strengthen system development to enhance implementation effects. 110
4.6.3 Strengthen team building and enhance professional management. 112
4.6.4 Strengthen teamwork to stimulate work vitality. 113
4.6.5 Put patients first and increase doctor-patient communication. 113
4.6.6 Strengthen education and training to enhance business capabilities. 114
4.7 Implications from the TQM implementation of the case hospital 116
4.7.1 Leadership commitment is an important prerequisite for TQM implementation. 116
4.7.2 Teamwork is the basic guarantee for TQM implementation. 118
4.7.3 Quality training is the source of motivation for TQM implementation. 119
4.7.4 Patient-centredness is a core element of TQM implementation. 120
4.7.5 Continuous quality improvement is an important support for TQM implementation. 120
4.8 Summary 121
Chapter 5: Conclusions and Prospects 123
5.1 Conclusions 123
5.2 Implications 123
5.2.1 Extension of research scope 124
5.2.2 Deepened theoretical research on TQM 124
5.2.3 Practical implications 125
5.3 Limitations 125
5.4 Prospects 126
Bibliography 129
Webliography 143
Annex A: Interview Outline 145

[This page is deliberately left blank.]

List of Tables

Table 2.1 Definition of health care quality by researchers 15
Table 2.2 Practical dimensions of health care quality management 37
Table 2.3 The most frequently occurring quality management dimensions 45
Table 2.4 Implementation results of TQM in different industries 50
Table 2.5 Key success factors of TQM implementation identified in existing literature 56
Table 3.1 Basic profile of the interviewees 70
Table 3.2 Solutions to ethical considerations 72
Table 4.1 Interview records 78
Table 4.2 Open coding results 84
Table 4.3 Axial coding results 87
Table 4.4 Level-3 coding 92
Table 4.5 Quality management trainings of the case hospital from 2019 to 2021 99

[This page is deliberately left blank.]

List of Figures

Figure 2.1 Juran's Quality Trilogy 47
Figure 4.1 Data coding process 82
Figure 4.2 Thematic codes of leadership commitment 88
Figure 4.3 Categorisation of the leadership commitment theme 88
Figure 4.4 Thematic codes of continuous quality improvement 89
Figure 4.5 Categorisation of the continuous quality improvement theme 89
Figure 4.6 Thematic codes of patient centredness 90
Figure 4.7 Categorisation of the patient centredness theme 90
Figure 4.8 Thematic codes of teamwork 91
Figure 4.9 Thematic codes of quality training 91
Figure 4.10 Number of members of the quality management teams in the case hospital 94
Figure 4.11 Funds for continuous health care quality improvement from 2019 to 2021 96
Figure 4.12 The number of activations of the 999 broadcast system from 2019 to 2021 98
Figure 4.13 Number of person-times of health care quality training held by the case hospital from 2019 to 2021 100

[This page is deliberately left blank.]

List of Abbreviations

ACHS: Australian Council on Healthcare Standards

AHRQ: Agency for Healthcare Research and Quality

CQM: Continuous quality management

IOM: Institute of Medicine

JCAHO: Joint Commission on Accreditation of Healthcare Organization

QA: Quality assurance

QC: Quality control

TQM: Total quality management

WHO: World Health Organization

[This page is deliberately left blank.]

Chapter 1: Introduction

1.1 Research background

This section introduces the background of this thesis, including social background and theoretical background.

1.1.1 Contextual background

The social background of this study has to do with the history and existing problems of health care quality management in China.

1. Development history of health care quality management in China

Health care quality is the basic guarantee for the sound operation of healthcare institutions, an important manifestation of the core competitiveness of hospitals as well as an important dimension for the supervision and management of modern hospitals (Groene et al., 2013). In recent years, people's increasing demand for high-quality medical services has driven significant progress in health care quality management. People's lives and health need to be safeguarded by high quality medical services. Therefore, focusing on and developing health care quality management has become a top priority for improving health care quality.

To strengthen the management of China's public hospitals and improve health care quality, in 1979, China introduced the Regulations of the People's Republic of China on Standardized Management (China's State Council, 1979, July 31), which proposed for the first time that scientific management methods and concepts should be introduced into the healthcare sector. To implement the requirements of the Regulations, a hospital accreditation process was launched, with the aim of introducing a third-party professional authority independent of healthcare institutions to conduct a comprehensive assessment of the hospital for the purpose of evaluating whether the healthcare institutions meet the requirements of quality management in all aspects. Subsequently, in 1989, China issued the Notice on implementing the "Hierarchical Management Standards for General Hospitals (Trial Draft)" (China's Ministry of Health, 1989, November 29), which proposed for the first time a unified, formal and all-round hospital hierarchical management system, and combined hierarchical management with accreditation, classifying hospitals into three levels, namely primary, secondary and tertiary,

and implementing different levels of management systems to further enhance the quality of hospital management. In February 1994, China promulgated the Regulation on the Administration of Healthcare institutions (China's State Council, 1994, February 26), which explicitly provided for the implementation of an accreditation system for healthcare institutions and marked the formal incorporation of the accreditation system for healthcare institutions into the rule of law in China. Under the guidance and facilitation of the accreditation mechanism, the management system of healthcare institutions in China has been continuously optimised, and the level of health care management and service quality continuously improved.

Entering the 21st century, to further improve the service quality of healthcare institutions nationwide, China's former Ministry of Health launched the "Three-Good and One-Satisfaction" (good service, good quality, good medical ethics, and public satisfaction) campaign nationwide. Besides, from 2005 onwards, the "Hospital Management Year" themed on "putting patients first and improving the quality of medical care" has been widely carried out. The series of events are focused on several aspects such as "quality, safety and service" and exploring and improving the health care quality management mechanism to enhance the quality and management performance of hospital management (Hu, 2007). In March 2009, China's CPC Central Committee and State Council (2009, March 17) issued the Opinions on Deepening the Health Care System Reform to implement a new round of reform of the health care system, and explicitly proposed that "healthcare institutions should take health care quality management as the basis to continuously upgrade medical services". In 2011, the Department of Medical Service Supervision of China's Ministry of Health (2011, April 22), on the basis of the experience gained from the Hospital Management Year, issued the Accreditation Standards for Tertiary General Hospitals (2011 Edition) to launch a new round of hospital accreditation activities, with the aim of promoting healthcare institutions to continuously strengthen their own management, continuously improve the quality of treatment and services, safeguard health care quality, enhance the level of management, better serve the public and improve the overall performance of the health care sector (Chen et al., 2014). In July 2016, China's National Health and Family Planning Commission (2016, October 14) promulgated the Medical Quality Management Measures, which clearly states that "efforts should be made to comprehensively strengthen health care quality and safety management, continuously improve health care quality, and guarantee patient safety". In October 2016, China's State Council (2016, October 25) issued the Outline of the Program for "Health China 2030", proposing to "establish a health care quality management system that is based on modernization and in line with its own characteristics with the people's health needs at the centre, establish an information-based

supervision and control platform, and continuously improve health care quality and safety". In September 2017, China's State Council (2017, September 12) issued the "Guiding Opinions on Quality Improvement Actions", which proposed that "quality improvement actions should be carried out with the fundamental aim of meeting the needs of the people, adhering to the value-oriented approach of putting quality first, and focusing on improving the quality and efficiency of development".

2. Existing problems in health care quality management in China

Driven by policy support, healthcare institutions at various levels in China have been adhering to the development concept of "putting quality and safety first". They have initially realized the standardisation, synergy and participation by all staff in the health care quality management framework as well as procedure-oriented, standardised and data-driven practices. A hospital quality management culture covering "all the staff and the whole process" has been gradually built up. These measures have not only effectively ensured the smooth operation of hospitals, but also significantly reduced the occurrence of various medical hazards and boosted the high-quality development of healthcare institutions at all levels. However, overall, health care quality management in China is mainly driven by administrative means, with strong policy orientation and weak hospital innovation. Besides, the quality of medical and nursing staff is not high; the comprehensive literacy of patients is not sufficient; and disputes between doctors and patients occur from time to time. All these indicate that the institutional mechanism for health care quality management is not yet sophisticated (Yan, 2008). Particularly, health care quality management in county hospitals is relatively backward (Luo, 2004). Besides, there are problems such as weak quality management awareness, lack of professional health care quality management personnel, incomplete mastery of basic skills and systems, and insufficient embodiment of patient-centred philosophy in health care quality management (Li, 2015). All these problems render it difficult for county-level hospitals to meet the growing health needs of the people. Overall, the following problems exist in health care quality management in county-level hospitals in China.

First, system establishment and implementation are not in place. Some county-level hospitals still stick to the outdated idea of emphasizing treatment while paying inadequate attention to management and lack coordination in system development. Development of supporting measures is even non-existent. For example, most county-level hospitals have set up quality control departments, but such departments do not perform relevant functions and become a mere formality (Li, 2015). County-level hospitals in China still lag behind hospitals in developed countries in the degree of precision of medical records, rational use of drugs, blood

transfusion, surgery and other related systems (Imhof, 2012; Yu, 2015).

Second, management tools are lagging behind. China's county-level hospitals are still in the early stages of information technology development, with information systems focusing on basic tasks such as information entry, information storage and data presentation, and unable to achieve more intelligent functions such as error correction, information warning and automatic research and evaluation. In particular, county-level hospitals have difficulty in achieving sufficient precision, intelligence and visualisation in terms of the degree of data standardisation, logical control of pre- and post-medical record information, the establishment of clinical knowledge bases, and the automated identification of safety and quality indicators such as death categories/infection categories/re-entry categories, making it difficult to carry out effective dynamic supervision and early intervention in health care safety and service quality in internal departments in a scientific, accurate and comprehensive manner.

Third, insufficient awareness of health care quality management. The emphasis of continuing education and training for medical staff is still placed on "skills and technologies" at the expense of "humanistic care" (Maher et al., 2018, September 29). Consequently, the focus of health care quality is predominantly on "diseases" instead of "patients". In this context, medical staff can hardly understand the diverse needs of patients in a timely manner, resulting in a decline in patients' experience of and satisfaction with medical treatment. In addition, most county-level hospitals lack professional health care quality management personnel, and health care quality management is often left to doctors. Some managers adhere to the concept of that heath care quality management simply means "the absence of incidents", resulting in poor management outcomes (Yan, 2008).

Fourth, there is a lack of service awareness. County-level hospitals have very limited health care competence and service capacity, insufficient promotion of appropriate technologies, poor two-way referrals and incomplete allocation of drug types to meet patients' needs (Song et al., 2020; Sun et al., 2017). In addition, China's health care quality management system is based on the supply-side perspective of health care services and neglects to focus on quality issues from the patient's demand-side perspective. This, coupled with a lack of awareness of patients' roles and medical knowledge (Davis et al., 2007), has led to a lack of active participation in health care quality management (Longtin et al., 2010), which may indirectly lead to complications and increase the likelihood of patient-doctor disputes.

3. Pressure facing health care quality management in China

Health care quality management is not only the lifeline of hospital development, but also the eternal theme of high-quality hospital development, and the source of fresh water on which

hospitals rely for survival. As people's demand for high-quality hospital services increases, there is an urgent need for healthcare institutions to adhere to the philosophy of "putting people first", strictly implement various policies and systems, strengthen hospital health care quality development, actively explore health care quality management models that meet the people's needs for medical treatment, and continuously improve health care quality management and upgrade service quality.

First, strengthening health care quality management is a required response to market competition. Following the implementation of classified management of hospitals, competition between hospitals, especially between public and private hospitals, has become particularly fierce. The competition between hospitals is, in essence, the competition of health care quality. More and more hospitals have recognized that health care quality directly affects their survival and development. In 2021, the survey among hospital key leaders conducted by American College of Helathcare Executives (2021) showed that the top three issues confronting hospitals were personnel shortages, financial challenges as well as patient safety and quality. As a result, healthcare institutions want to adopt effective management tools to achieve good operational and financial performance and thus maintain a competitive position in the market. County-level hospitals in China are second-tier hospitals, with natural deficiencies in infrastructure development, technical equipment and expertise compared to tertiary hospitals. Yet county-level hospitals serve the most grassroots and broadest population. Their inadequate health care quality management will result in a massive loss of patients which will jeopardize their survival and development.

Second, strengthening health care quality management is a need to meet the increasing health needs of the people. With the rapid development of the economy and society, patients' expectations for healthcare institutions are rising, requiring them to provide higher quality and more comprehensive medical services and raising new requirements for the management, facilities, equipment and environment of hospitals (Feng et al., 2021). In particular, since 2021, China has implemented the three-child policy, and the birth rate of the population has been increased. Coupled with the increasing ageing of the population in China, the demand for high-quality health care services has been increasing. In addition, the number of patients with multiple diseases is increasing, and the demand for quality care is growing (Chang et al., 2013; WHO, 2000). For hospitals, especially county-level hospitals, the quality of service not only directly affects their reputation and image, but also affects the lives and health of the people and social stability at the grassroots level. This requires county-level hospitals to regard health care quality as a top priority, constantly strengthen management, improve service quality, and

strive to achieve "zero errors" and "zero defects" to continuously improve health care management and continuously meet the growing health needs of the people.

Third, strengthening health care quality management is necessary for achieving the connotative development of hospitals. Reducing operating costs and improving operational efficiency is a major challenge for hospitals today (American College of Helathcare Executives, 2021). Currently, health care organizations are facing financial pressure, declining quality of health care, and increased pressure to control costs (Gooch, 2019, March 14; McClellan & Rivlin, 2014). This is particularly true for county-level hospitals which are faced with such challenges as inadequate investment in health care as well as shortage and unreasonable allocation of medical resources (Zeng, 2015). Hospital operations are mainly based on the medical services provided, with a single source of income. Therefore, there is an urgent need for hospitals to adopt innovative ideas and methods to optimise health care quality management, rationalise the allocation and achieve efficient use of medical resources, reduce waste, improve operational efficiency and effectively address the "difficulty and high cost of accessing health care services" for the public.

Currently, total quality management (TQM) should be one of the main measures for hospitals to meet various challenges (Xiong, 2015). TQM can enable hospitals to establish a patient-centred, safe and efficient healthcare environment by improving service efficiency, enhancing service quality and reducing healthcare costs (Yu & Zhang, 2006b). Therefore, the implementation of TQM can not only enable the health care quality management in county-level hospitals to be more standardised, institutionalised and scientific (Wang & Chen, 2021) and build a "safe, effective and satisfactory patient-centred healthcare environment", but also have a profound impact on hospitals at the level of hospital cultural transformation and restructuring, enabling hospitals to gain lasting competitiveness and produce the best possible outcome the hospitals, patients and society.

1.1.2 Theoretical background

Currently, there are limited research results related to health care quality management in county-level hospitals. As of May 1, 2022, a search on the China National Knowledge Infrastructure (CNKI) was conducted using health care quality management and county-level hospitals as keywords, and only 16 papers were retrieved, including two master's theses, 12 journal papers and one news report. The main areas studied included the status of health care quality management in county-level hospitals, health care quality management practices in county-

level hospitals, and research on countermeasures for hospital quality management in county-level hospitals. In particular, even fewer existing studies applied the TQM theory to improve health care quality management in county-level hospitals. Therefore, more research is needed in this area, and new knowledge should be developed to effectively apply TQM to improve the efficiency of health care quality management (Aquilani et al., 2017). According to Huang (2020), research on health care quality management in China has focused more on large public hospitals, and not much research has been conducted on small and medium-sized hospitals at the county level, where the proportion of public hospitals in China is high and health care quality management problems are prominent. Thus, conducting research on health care quality management in small and medium-sized hospitals at the county level can help fill the gap in existing literature.

The case hospital is a county-level hospital, one that started to implement TQM in 2012. In the first year of TQM implementation, the hospital passed the Grade B tertiary hospital accreditation and entered the list of tertiary general hospitals. In the process of TQM implementation, the case hospital received tremendous attention from the hospital leadership. In terms of organizational structure, it established the Health Care Quality and Safety Management Committee and the Quality Control Department to be specifically responsible for implementing, supervising and managing health care quality activities; in terms of human resources, the staffing of the Quality Control Department, Medical Affairs Department and Nursing Department was constantly optimised to strengthen the team; in terms of financial resources, health care quality management workers at all levels were provided with expense reimbursements to attend various education and training courses; support was given to hold activities such as quality control competitions, "Golden Idea" competitions and Nosocomial Infection Week, and funds and prizes were provided for these activities; and various types of health care quality management software were introduced to strengthen the scientific and informatization of health care management. Emphasis was placed on doctor-patient relationships; a patient-centred service system was established; various regulations were introduced to protect patient privacy; and an early warning system for shock was set up. After years of efforts, the satisfaction rate of patients in the case hospital has increased from 75.4% to 95.3% in the past three years; medical complaints have dropped by 50%; and the amount of compensation for medical disputes has dropped by 70%. Focusing on continuous quality improvement, the Quality Control Department conducts monthly on-site supervision of relevant index data and provides feedback on health care quality to relevant committees and clinical departments through the Punishment-free Adverse Event Reporting System; each committee

summarised the solutions, and key issues were submitted to the Hospital Quality and Safety Management Committee, which made decisions on the data provided and the quality issues of the hospital. Emphasis was placed on teamwork, with various emergency response teams established, contingency plans formulated and rehearsed from time to time; a hospital-wide broadcast system was also established, through which the appropriate team was deployed to deal with the incident when a special situation was encountered, further enhancing the efficiency of teamwork. In particular, the success rate of resuscitation of patients in cardiopulmonary arrest in the hospital has increased by 20% since the completion of the broadcast system. Focusing on quality training, the case hospital has implemented training at both hospital and departmental levels for members of departmental quality and safety management teams, such as training on the application of quality control tools, and the completion rate of training can reach 100%. The training is followed by an assessment, the results of which are combined with the individual physician's year-end departmental evaluation priorities. 7,319 people were trained in 2019, 7,085 in 2020, and 13,370 in 2021. The training has further enhanced the quality management awareness and quality management capabilities of the staff of the case hospital.

The implementation of TQM has enhanced the health care quality management of the case hospital, which was internationally recognised for its health care quality and safety management by passing the JCI international accreditation in 2014; and the overall quality and safety management of the case hospital had reached a new height by passing the fourth cycle of the Grade B tertiary hospital reassessment in Zhejiang Province in 2021. As the case hospital is an early implementer of TQM among county-level hospitals in China, it has some successful experience in implementing TQM, and the long TQM practice also facilitates a comprehensive and objective observation and analysis of the extent to which the TQM theory matches and fits with county-level hospitals. This is the main reason for choosing the case hospital for this study. In view of this, this thesis discusses the application of TQM theory in the case hospital to identify the problems, put forward targeted solutions, and summarise experience for the implementation of TQM in county-level hospitals in China. This will help fill the gap in literature and improve the health care quality management in county-level hospitals in China.

1.2 Research problem

It can be seen from the background of the study that county-level hospitals in China are confronted with many problems in health care quality management. These include lack of a

sound quality control system, inadequate system development, lagging management tools, insufficient awareness of health care quality management and a lack of service awareness. These problems have resulted in the health care needs of patients in urban and rural areas not being met effectively and have stood in the way of the high-quality development of county-level hospitals.

1.3 Research purpose

In recent years, Chinese hospitals have successively introduced the TQM theory to carry out health care quality management. But most studies are focused on large hospitals. Empirical studies on the implementation of TQM in county-level hospitals is very limited. To address the health care quality management dilemma in county-level hospitals, this thesis takes TQM as the theoretical basis and a county-level hospital in Zhejiang Province that has implemented TQM for a case study in the context of the new round of health care system reform. The purpose is to validate that county-level hospitals can implement TQM to improve health care management effects and put forward corresponding strategies to address the existing problems in TQM implementation in the case hospital so that empirical insights can be provided for the sound management of health care quality in county-level hospitals and theoretical support provided for the high-quality development of healthcare institutions, especially county-level hospitals, in China.

1.4 Research questions

Through a comprehensive review of the literature on TQM, health care quality and health care quality management, this study focuses on answering the following questions based on a clear understanding of the objectives and values of health care quality management in county-level hospitals from the perspective of TQM.

1) What is the status of TQM implementation in the case hospital?

2) What are the main factors restricting TQM implementation in the case hospital?

3) What measures should be taken to solve the problems?

4) What lessons can be drawn from the case hospital's TQM implementation for county-level hospitals?

1.5 Research significance

The year 2022 is a crucial year for the implementation of China's 14th Five-Year Plan and the Outline of the Program for "Health China 2030". To meet the increasing health needs of the people, the supporting role of healthcare institutions must be brought into full play. Particularly, county-level hospitals directly serve the greatest number of people. They should strengthen health care quality management to optimise health care quality. This study was carried out in the context of China's economy entering a stage of high-quality development and the implementation of the Outline of the Program for "Health China 2030". The topic is of keen interest for the government, hospitals, the public and researchers. This study can help identify the main factors affecting health care quality management in county-level hospitals in China and propose countermeasures based on empirical evidence. Thus, it is of strong contemporary, theoretical and practical significance.

1.5.1 Theoretical significance

The theoretical significance is reflected in the following aspects.

1. This study can help clarify the basic direction of health care quality management in county-level hospitals in China. This study systematically reflects the current advanced experiences and practices related to health care quality management from the perspectives of philosophy, policy and status quo uses through a comprehensive literature review. On this basis, in-depth interviews were conducted and the TQM theory applied to validate that TQM can be applied to county-level hospitals, providing a theoretical basis for innovative health care quality management in county-level hospitals and shedding light upon the direction of development.

2. This study is conducive to expanding the connotation and extension of health care quality management theory. The health care quality management theory has an early origin (Sheingold & Hahn, 2014). Scholars at home and abroad have all conducted some research on organizational health care quality management and gained some understanding. But the main focuses on are such aspects as health care quality management practice, effect evaluation, health care quality control and health care quality information development, and quantitative research methods were mainly used. The scope of coverage is wide, resulting in a lack of focus and relevance. This thesis takes a county-level hospital in Zhejiang Province as case and adopts qualitative research methods. It places health care quality management in a specific hospital, which will help further enrich the connotation and extension of health care quality management.

3. This study is conducive to expanding the connotation and extension of the TQM theory. County-level hospitals play an important role in China's healthcare system as they directly serve the health needs of the grassroots. However, there is little systematic and comprehensive research on health care quality management in county-level hospitals. As a result, county-level hospitals lack theoretical support to carry out health care quality management. In view of this, this study will analyse the comprehensive situation of TQM implementation in the case hospital and apply the TQM theory to identify the problems that restrict health care quality management in county-level hospitals in China, thereby forming industry-specific and targeted research results.

1.5.2 Practical significance

This thesis bears the following layers of practical significance.

First, this study can help identify the main factors affecting the health care quality management of county-level hospitals and the key points. At present, health care quality management in county-level hospitals in China is faced with various problems, such as inadequate system development, failure to update awareness and concept, lagging management tools, and inadequate facilities and equipment. In this context, this thesis studies the health care quality management of county-level hospitals by focusing on the case hospital, trying to identify the key factors of influencing health care quality management in county-level hospitals in China. This will help clarify the pain points of health care quality management in county-level hospitals in China, especially the case hospital, to prevent them more effectively.

Second, this study can help the case hospital implement precise health care quality management improvement strategies. Through in-depth interviews and other methods, this study provides a multi-perspective analysis of the problems in TQM implementation in the case hospital and proposes relevant improvement measures, which can provide a pathway for better application of TQM and improve the overall health care quality management in the case hospital.

Third, this study can provide reference for TQM implementation in county-level hospitals in China. The case hospital is a county-level hospital. Currently, county-level hospitals in China still have some outstanding problems in the process of health care quality management and are in urgent need of a mature theory to guide their improvement. The application of TQM in the case hospital is a good testimony to the value of TQM. On this basis, this study systematically explores the problems in TQM implementation in the case hospital and proposes a comprehensive theoretical analysis framework and coping strategies, which can be generalized

to health care quality management in county-level hospitals at large.

1.6 Research methods

This study adopts qualitative research methods, mainly including case study method and interview method. The specific methods used are as follows.

(1) Literature research method

The literature research method is a scientific method of searching, collecting, identifying, collating, analysing and researching educational science, intelligence or information. As the literature research method has the advantage of drawing on historical experience as well as the results of existing research, it enables innovative modes of thinking in conducting this research. Therefore, this thesis adopts the literature research method to collect, collate, summarise and analyse the literature related to quality, health care quality, health care quality management and the definition and constitutive dimensions of total quality management, to analyse the interaction between total quality management and health care quality management, to clarify the existing research achievements in health care quality management and total quality management theory, and to understand the status of theoretical research. All these efforts help provide a theoretical basis for this study by identifying the research ideas and perspective.

(2) Interview method

A questionnaire is a form designed to be used by the researcher to explore and study the issue in question and is distributed or mailed to those involved in the study who are asked to fill in the items according to instructions. It can also be completed in person under the guidance of a supervisor, or by interview (Meng & Chang, 1995). In his book entitled *Qualitative Research in Social Sciences*, Chen (2000) argues that the interview is a type of research conversation, a research method in which the researcher collects (or "constructs") first-hand information from the researched person by means of oral conversation. Because of the flexibility of the interview method, it is possible to collect first-hand information in a flexible and targeted manner according to the specific circumstances of the interview process, and to gain a deeper understanding of the mindset and psychological activities of the interviewees, thereby obtaining richer and more extensive information. This study used the interview method to conduct in-depth interviews with the administrative managers and front-line clinical staff of the case hospital, focusing on the theme of health care quality management in case hospital, to provide qualitative data to support the description of the status, mechanism analysis and strategy research of this study.

(3) Case study method

Thomas (1987) argues that all case studies begin with the same apparent purpose: the desire to approach or gain a deeper understanding of a particular "case" or set of "cases" in their real world. Yin (2009) holds that case studies are empirical studies that place current phenomena, such as "cases', in real-world contexts, especially where there is no clear boundary between the phenomenon and the social context. Stake (2005) sees case studies as the process of understanding behaviour in a particular situation or under particular conditions (in a single event). In short, a case study is a research method that uses a typical case as a source material. Through an in-depth analysis of the circumstances, processes and principles of the event, it explores and distils general conclusions and the particular problems reflected in the event, and on this basis draws conclusions that can be used to inform others' research or guide practice. By collecting and analysing health care quality management practices in the case hospital, this study draws lessons therefrom and retains its own strengths and propose solutions to the problems of health care quality management in the case hospital, so as to ensure long-term development.

1.7 Thesis structure

Based on the TQM theory, this study selected a county-level hospital in Zhejiang Province as the case and conducted in-depth interviews and a questionnaire survey to analyse the problems related to health care quality management in the case hospital. Relevant improvement suggestions were made in a targeted manner in relation to the problems identified. The structure of this thesis is as follows.

Chapter 1: Introduction. It mainly introduces the research background, research problem, research questions, research significance, research methods and structure of this thesis. It is the general outline of the whole thesis that provides a framework for the subsequent chapters.

Chapter 2: Literature Review. This chapter provides a comprehensive review of the literature on quality, health care quality, health care quality management, and total quality management at home and abroad to identify and study relevant research results on health care quality management. Besides, the progress and weaknesses of relevant research findings is reviewed and summarised. Through the literature review, the connotation and dimensions of health care quality management in the Chinese context are identified, laying a solid foundation for subsequent interviews and questionnaire survey.

Chapter 3: Research design. Based on the actual situation of the case hospital's

implementation of TQM in health care quality management, a reasonable interview outline was designed and optimised through pre-interviews to ensure that the interview outline was relevant and scientific, and that the data collected could fully reflect the basic situation of the case hospital's TQM implementation, to reach comprehensive, objective and relevant research results.

Chapter 4: Research Results and Discussion. Following the process of "interview implementation - data collection - interview transcription - data analysis", semi-structured interviews were conducted with patients, health care workers and all levels of managers of the case hospital to qualitatively examine the basic situation of the case hospital's implementation of TQM to health care quality management and to provide a detailed description of the specific implementation approach. The data collected was analysed to reflect the status and existing problems of TQM-based health care quality management in the case hospital, put forward corresponding improvement strategies, and draw implications for TQM implementation in county-level hospitals in China.

Chapter 5: Conclusions and Prospects. Conclusions of this study are drawn, limitations pointed out, and suggestions for future research given.

1.8 Summary

This chapter introduces the research background, research problem, research purpose, research questions, research significance, research methods and structure of this thesis. It reflects the framework of the whole thesis, giving a clear picture of how subsequent chapters will roll out.

Chapter 2: Literature Review

2.1 Health care quality

2.1.1 The concept of health care quality

Service quality is the extent to which a fixed set of characteristics of a service activity meets the requirements. It can be either the consumer's evaluation of the satisfaction he or she receives or the service provider's evaluation of the satisfaction the consumer receives. The former is service quality viewed from the perspective of the service consumer, while the latter is service quality viewed from the perspective of the service provider (Wu & Hou, 2006). Service quality in a narrow sense refers only to the quality attributes that are embodied in the whole process of the service industry providing its product to consumers (i.e. the service is fully equivalent to the product rather than the product externality). Service quality in a broad sense encompasses the quality attributes embodied in the service industry's intangible products and physical product service activities.

Health care quality (Agency for Healthcare Research and Quality, 2012, September 12), alternatively known as "healthcare quality" (Allen-Duck et al., 2017) or "quality of care" (WHO, 2022, June 21), reflects the attributes of quality in the delivery of healthcare services to patients by healthcare providers. At present, a comprehensive and unified definition of health care quality has not been formed at home and abroad. Some Chinese and international scholars have given their own understanding and definition of health care quality as shown in Table 2.1 below.

Table 2.1 Definition of health care quality by researchers

Researcher/Organization (Year)	Definition
Donabedian (1980)	Health care quality refers to the ability to achieve desirable objectives using legitimate means.
Institute of Medicine (1990)	"Health care quality is the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."
Council of Europe (1998)	Health care quality is the degree to which the treatment dispensed increases the patient's chances of achieving the desired results and diminishes the chances of undesirable results, having regard to the current state of knowledge.
Zhu (2003)	Health care quality refers to the health service sector and its institutions using the health resources at their disposal to provide

	health services to the population to meet their health needs.
Wang (2005)	Health care quality reflects the expertise of the healthcare institutions, the professionalism of the doctors and nursing staff, the reasonableness of the medical costs paid by the patient and the acceptability of the medical costs to the patient, as well as the professional evaluation of the healthcare institutions by the public.
WHO (2006)	Health care quality is composed of six dimensions: effectiveness efficiency, accessibility, acceptableness/patient-centredness, equitability and safety.
Park et al. (2008)	Health care quality is defined from the perspective of the "reality-expectation" gap as the difference between the quality of care that patients expect and the quality of care they receive in the course of their treatment.
Agency for Healthcare Research and Quality (2014, September 17)	Health care quality is defined as "doing the right thing at the right time for the right person and having the best possible result."
National Health Commission of the People's Republic of China (2016, October 14)	Health care quality refers to the extent to which healthcare institutions and their medical staff provide medical care to patients in the course of clinical diagnosis and treatment in accordance with the requirements of professional ethics and treatment norms, given the existing medical technology and level of competence.
Chen et al. (2017)	Health care quality is the gap between consumers' expectations of health care services and the actual health care services they receive.

The above definitions show that health care quality is distinguished in a broad sense and in a narrow sense. Specifically, health care quality in a broad sense covers a wide range of areas, including not only the treatment of patients, but also the efficiency of health care services, the reasonableness of hospital charges, the satisfaction of society with the hospital, the development of hospital hardware and software, the economic efficiency of medical technology and the continuity and systemic nature of health care services, reflecting the concept of "integrated healthcare"; health care quality in a narrow sense refers to the quality of health care for specific patients, including whether the diagnosis of patients is timely and accurate, whether the medical treatment plan is feasible and effective, whether the medical treatment course is long or short, and whether there is physical and mental harm caused to patients due to nosocomial infection or treatment errors, which mainly reflects the timeliness and effectiveness of health care services (Xiong, 2015). Although these definitions differ in wording, the core content is basically the same, i.e. the transformation of healthcare services from "provider orientation" to "patient orientation", and the quality of healthcare services is the quality of healthcare services in restoring patients' physical and mental health and satisfaction (Shi, 2021).Therefore, the quality of health care services reflects the timeliness, feasibility and safety of the services provided by healthcare institutions, the self-control and evaluation of the medical techniques and results to be achieved by the medical staff of healthcare institutions in accordance with the

regulations and systems of healthcare management, the operational protocols and technical specifications, the emphasis on patient satisfaction, and the economic efficiency of healthcare activities, the efficiency of treatment and the overall sustainability of healthcare. Synthesizing the existing literature, this thesis defines health care quality as "the sum of medical technology, clinical care and all other medical measures implemented on the patient's body to improve the patient's health".

2.1.2 Models of health care quality dimensions

Currently, there are three representative models of health care quality dimensions: the "Structure-Process-Outcome" model, the OECD model and the IOM model.

1. The "Structure-Process-Outcome" model

Donabedian (1966), an American health care quality management guru, proposed a three-stage "Structure-Process-Outcome" model to study health care quality.

1) "Structure" is also known as elemental quality, which is to examine whether the resources and facilities of a healthcare institution are in line with the standards, such as whether the healthcare infrastructure, human resources, medical equipment, standards and technical guidelines are in line with the standards, which is the basis for the healthcare activities of a hospital. In the initial period of the implementation of hospital accreditation, China mainly adopted elemental quality indicators to evaluate health care quality in hospitals. Adopting this model helped improve hospital hardware and facilities, but it could hardly assess health care quality in hospitals in a comprehensive manner and could not fully reflect the connotation of health care quality.

2) "Process" is also known as link quality, which refers to the various aspects of the hospital to carry out health care activities, involving each department, each process and each work. It is the core to the hospital's health care quality management. Link health care quality contains a lot of medical control chains, which contain many quality control points. Only by ensuring sound quality control of each link can a good quality management process be achieved (Jian & Yuan, 2003). According to hospital practices, link quality encompasses quality in various dimensions such as the quality of diagnosis, the quality of nursing care, the quality of data, the quality of medical technology and the quality of pharmacy management. These also include whether healthcare staff carry out healthcare services in accordance with the prescribed standard processes, whether healthcare measures are implemented in accordance with requirements, and whether improvements are made to weaknesses in healthcare services in a

timely manner.

3) The "outcome dimension", alternatively known as terminal health care quality, mainly encompasses the evaluation of health care performance and health care indicators. It aims to evaluate the quality management results that have been produced, draw lessons, identify problems, and carry out continuous improvement (Xing & Shang, 2006). Although terminal quality belongs to ex post management, it is a very important part of health care quality management in hospitals as it enables hospital managers to draw conclusions and lessons from the analysis of the health care process and contributes to the continuous improvement of health care quality in hospitals.

Donabedian (1966) argued that the measurement and evaluation of health care quality should be based on the three dimensions of Structure, Process and Outcome, and that each dimension has an impact on the next (Ammenwerth et al., 2007). As the model not only defines the concept of health care quality but also provides a multidimensional framework for evaluating health care quality (Jlassi et al., 2014, November 27), and as Ibn El Haj et al. (2013) further demonstrated the applicability and usefulness of the model in the field of healthcare quality by comparing the ISO 9001V2008 with the Donabedian model, the model has come to be widely used in the healthcare sector.

2. The OECD model

In 2001, OECD member countries launched an initiative on the establishment of an international system of health care quality indicators, and proposed the OECD model based on the experiences of relevant countries (Kelley & Hurst, 2006). The aim was to develop a common set of indicators that will provide a complete, systematic and comprehensive set of health care quality indicators for the evaluation of health care quality in OECD member countries. The model identifies four dimensions of health care quality: 1) health; 2) non-health care determinants of health; 3) healthcare system performance; and 4) health system design, policy and context. Central to the model is healthcare system performance, which in turn includes safety, effectiveness and patient-centredness. Details of the four dimensions are as follows.

First, health is determined by the interaction of many interdependent factors, in this case the ability to use healthcare means to facilitate patients' return to a normal state of health. The current health care system needs to address three health needs: health maintenance, which is about maintaining health and preventing diseases; health improvement, which is about improving people's health status; and ongoing health management, which includes disease care as well as effective care (Arah et al., 2006).

Second, non-health care determinants of health were classified into three categories,

namely environment, lifestyle and human biology by Lalonde (1974, April 29). Environment refers to the physical and living environment in which humans live and how changes in the environment affect health; lifestyle refers to the way people choose to live their lives, such as drinking, smoking and other habits that can affect health; and human biology refers to the biological characteristics and genetic traits of people, which are endogenous factors that inherently affect their health.

Third, healthcare system performance refers to the maintenance of an efficient and equitable health care system without an emphasis on the assessment of non-health care determinants of health. In other words, when assessing health care performance, the direct function of the health care delivery system is assessed in terms of the level of benefits and costs of individual and public health care (Arah et al., 2006). Currently, many countries and international organizations such as WHO and OECD have developed specific provisions for key objectives of health policy.

Fourth, health system design, policy and context refers to the level of health system quality management and the characteristics of policy development and implementation. Arah et al. (2006) point out that health system design, policy and context will be the leverage that countries will attempt to use to improve health system performance.

At the heart of the OECD model is healthcare system performance, which is composed of safety, effectiveness and patient-centredness. Specifically, safety refers to the provision of health services that meet standards and requirements to prevent harm to patients, providers or the environment (Veillard et al., 2005); effectiveness refers to the extent to which the right health services are provided to all potential beneficiaries to achieve the desired outcomes (Donabedian, 1980); and patient-centredness refers to regarding the patient as the centre of health care and reflects the extent to which the health care system is working (Veillard et al., 2005).

3. The IOM model

The IOM model, developed by the Institute of Medicine (Baker, 2001), conceptualised health care quality as six dimensions, which are: 1) effectiveness. It is the degree to which the outcomes produced by a healthcare service are close to the expectations of the healthcare service delivery. Burhans and Alligood (2010) conducted a study aimed at determining the meaning of quality nursing care for practising nurses and concluded that effectiveness helps nurses work without loopholes and enhances patient satisfaction. Mosadeghrad (2013) found through study that patient satisfaction can be achieved by providing effective and efficient nursing care. In describing health care quality in hospitals, Khan et al. (2016) argue that the

effectiveness and timeliness of the care provided is considered to be one of the very important health care performance indicators; 2) timeliness. It refers to the maximisation of the effectiveness of a given health resource and reflects the ability of a healthcare institution to take appropriate health care means to effectively treat a patient in a timely manner after a definite diagnosis has been made of a patient. Chinese scholar Wu (2013) also suggests that in the process of medical treatment for patients, it is necessary to treat the patient as the centre of attention and to provide the most appropriate services for the patient through the rational use of resources and timely adoption of relevant therapeutic techniques in health care facilities; 3) equitability. It refers to the provision of health care services of equal quality to different groups of people in society. The core idea is that health care facilities can provide equitable health care services to patients. Equality here does not mean fairness, but rather welfare. In other words, everyone should enjoy equal or equitable health care benefits regardless of the patient's socio-demographic background such as status, position, age, income and gender. Yang et al. (2006) regard equitability of healthcare services as the maximisation of healthcare services that a healthcare provider can provide within the scope of its responsibilities; 4) patient-centredness. It consists of six dimensions: "respectful to patients' values, preferences, and expressed needs; coordinated and integrated; provide information, communication, and education; ensure physical comfort; provide emotional support; and involve family and friends"(Gzipwtf.com, 2021, January 7); 5) safety. It refers to the avoidance of physical harm, where safety is defined as "patient safety" instead of "health care safety". In its *Global Patient Safety Action Plan 2021-2030*, WHO (2021, August 3) defines patient safety as "a framework of organized activities that creates cultures, processes, procedures, behaviours, technologies and environments in health care that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely and reduce the impact of harm when it does occur" (p. V); 6) efficiency. It refers to the minimisation of resource costs while achieving the desired outcomes of health care services. Currently, this is the model of health care quality endorsed by relevant international authorities such as WHO (Harolds, 2015; Rodkey & Itani, 2009; WHO, 2006, 2007), and it is also the most authoritative conceptualisation of the dimensions of health care quality (Baker, 2001; Ma, 2022).

Health care quality evaluation

A series of studies have been conducted in the academia to address the dimensions of health care quality. Allen-Duck et al. (2017), by searching medical dictionaries, public domain websites and five academic literature databases and analysing 42 relevant papers and articles, concluded that health care quality is composed of four dimensions, which are 1) effectiveness,

which refers to the adoption of timely and appropriate information measures, including assessment, intervention and response; 2) safety, which is considered to be the basis for other quality care; 3) culture of excellence, which encompasses collaboration, communication, compassion, advocacy, respect, responsibility and trustworthiness; and 4) desired health outcomes, where medical behaviours lead to treatment outcomes that are satisfactory to patients. Rakhmawati et al. (2013) developed a model of health care quality in Indonesian public health centres, which contains 24 indicators in four dimensions, namely quality of health services, quality of management processes, quality of health care personnel and adequacy of health care resources. Chahal and Kumari (2010) constructed a model of health care quality with quality of interactions, quality of physical environment and quality of outcomes as core indicators. The model has high convergent, content and discriminant validity, but it is limited to government public hospitals and has limitations for generalisation in private hospitals. Aagja and Garg (2010) developed a public hospital service quality scale, which contains five dimensions: admission, medical service, overall service, discharge process and social responsibility. According to Chinese scholar Cong (2006), the health care quality in a physiotherapy facility is reflected in three main dimensions: 1) whether the treatment provided by the healthcare institution to the patient is timely; 2) whether the treatment method and medical treatment techniques used for the patient are reasonable; 3) whether the physical and psychological safety of the patient is ensured in the process of treatment, whether the medical treatment personnel are highly qualified, whether the treatment measures taken are in accordance with the relevant regulations promulgated by WHO, and whether the enforcement measures are in place, including whether the treatment techniques used are satisfactory to the patient and reduce the probability of conflicts between patients. According to Wen et al. (2021), the indicators of health care quality evaluation system mainly cover the quality of basic conditions, the quality of work processes and terminal quality. Among them, the quality of basic conditions includes human resources, available materials, instruments and equipment, quality of time frame and quality of system management, which are mainly used to examine the quantity and quality of healthcare institutions' investment in human, financial and material resources; the quality of work processes covers such aspects as diagnosis, treatment, medical technology, pharmacy, nursing, treatment process management and economic management quality. It mainly examines the standardization, rationality, and timeliness of operation processes, such as the three-day confirmation rate after hospital admission, sterilization rate and turnover rate of hospital beds, and belongs to mid-term evaluation; terminal quality, which is the ultimate goal of health care services, refers to the health benefits obtained by patients after medical treatment. It mainly

covers such indicators as the death rate, nosocomial infection rate and cure rate. It is the evaluation of the treatment effect after the health care service is delivered and belongs to the category of ex post evaluation.

2.1.3 Health care quality evaluation index systems

1. International health care quality assessment standards system

The international community attaches great importance to the establishment of a health care quality evaluation system. A series of mature health care quality evaluation systems have been established in Europe and the U.S., with representative ones including the Joint Commission on Accreditation of Healthcare Institutions (JCI) standards, the International Quality Indicators in Healthcare (IQIP) system, the Performance Assessment Tool for Hospital Quality Improvement in Hospitals (PATH) and the British Star Rating System.

(1) JCI standards

JCI standards are a quality assessment system for healthcare institutions initiated and developed by the International Division of JCI, which evaluates healthcare institutions in countries or regions other than the U.S. and uses a system of indicators to assess health care quality in hospitals (Xin et al., 2011). It has accreditation experts from countries and regions in Europe, Asia, Latin America and Africa, and its scope of accreditation covers a wide range of clinical, laboratory-related, management and policy areas. Its *Accreditation Standards for Hospital* are the core basis for the evaluation of health care quality. To ensure patient safety, JCI sets out clear requirements for the establishment of internal hospital management systems, the standardisation of treatment processes, the handling of safety hazards, the development of information technology systems as well as the training and management of medical and nursing staff.

(2) IQIP system

The IQIP system was developed by the Centre for Performance Science in the U.S. It is a flexible and wide-ranging indicator system that can be used directly by different countries and regions or modified and improved according to local conditions. Due to its flexibility and wide applicability, the IQIP system is currently the most widely used indicator system in the international community for evaluating health care quality. The IQIP system is suitable for many types of healthcare institutions, including general hospitals, specialist hospitals, rehabilitation centres and health centres. Among them, the health care quality evaluation indicators applicable to general hospitals include four dimensions, namely intensive care unit

(ICU)-related indicators, surgery-related indicators, patient safety-related indicators and service process-related indicators, with a total of 267 items in 21 categories. There are many negative evaluation indicators as the system places high emphasis on health care delivery outcome (Liu & Zhao, 2017).

(3) PATH

PATH is a framework developed in 2003 by the WTO Regional Office for Europe to evaluate health care quality management and is mainly used in countries and regions such as Europe and Africa. The framework encompasses six dimensions, namely safety, patient-centredness, clinical effectiveness, clinical efficiency, staff orientation and responsive governance, and contains 17 core indicators and 24 additional indicators (WHO, 2007).

(4) British Star Rating System

The British Star Rating System was developed by the National Health Service (NHS) to evaluate health care quality in public hospitals in the UK system and differs from other evaluation systems in that it focuses more on the level of public benefit. It has four core dimensions of evaluation: 1) ability to deliver care; 2) error rate of medical incidents; 3) performance of health care staff; and 4) patient satisfaction. The rating system consists of nine key targets and 36 evaluation indicators, and the results are expressed in terms of stars, three, two, one and zero stars. The rating system is carried out every four years in hospitals within the NHS coverage in the UK (Levtzion-Korach & Israeli, 2005).

(5) 100 Top Hospitals ranking system

The U.S. 100 Top Hospitals ranking system was initiated and developed by the HCIA-Sachs Institute (Chen et al., 1999). As the evaluator is a third party independent of the hospital, the data sources for the evaluation are mainly the data publicly released by the hospital, relevant medical reports, summaries and analyses of the hospital, and feedback from the hospital's patients. Due to the limited sources of evaluation data, the evaluation of hospitals cannot be 100% comprehensive and objective. The evaluation system contains indicators in four areas, namely: 1) treatment-related indicators; 2) safety-related indicators; 3) treatment intensity-related indicators; and 4) fee standard-related indicators.

(6) ACHS Clinical Indicator Program

Other indicator systems include the ACHS Clinical Indicator Program developed by the Australian Council on Healthcare Standards (ACHS), which contains 353 indicators in 22 clinical areas. Due to the wide range of indicators covered, which are applicable to all types of healthcare institutions, the indicator system is mainly evaluated in terms of processes and outcomes, but the indicators are not widely used in the world.

2. Health care quality evaluation systems in China

(1) China Health Care Quality Indicators System

The system was researched and developed by the National Institute of Hospital Administration of the former China's Ministry of Health (now National Health Commission) and incorporates international indicators for evaluating health care quality. The indicator system has three Level I indicators, namely: 1) death-related indicators; 2) unplanned re-admission indicators; and 3) negative event indicators. The three categories of indicators contain 33 Level II indicators, 730 Level III indicators and 4,610 composite indicators. The indicators are results-oriented and designed in line with international standards. The evaluation indicators that match county-level public hospitals are mainly as follows: 1) In the Operation Manual for Performance Appraisal of National Secondary Public Hospitals (2020 Edition), the performance appraisal indicators of secondary hospitals include four primary indicators: health care quality, operational efficiency, sustainable development and satisfaction evaluation (National Health Commission Leading Group for Performance Appraisal of Tertiary Public Hospitals, 2020, June 9). Among them, the indicator of health care quality, which is closely related to this study, further consists of four Level II indicators, namely functional positioning, quality safety, rational use of drugs and medical services. 2) The Implementation Rules for the Accreditation Standards for Level II General Hospitals (2012 Edition) also contains various indicators related to health care safety and quality management. Specifically, Level I indicators include patient safety, health care quality and safety management and continuous improvement. Level II indicators cover: a. pre-treatment assessment, such as the assessment rate of clinical TNM staging (T indicates primary tumour; N indicates regional lymph node involvement around the primary tumour; M indicates distant tumour metastasis) before tumour treatment, and the rate of standardised prevention of venous thromboembolism; b. complications, such as reduction in the rate of complications of guided delivery; c. surgical aspects, such as reducing the rate of unplanned return to the operating theatre for reoperation; and d. health care safety and quality management, such as the rate of reporting of health care quality and safety adverse events.

(2) Comprehensive Accreditation Standards for Tertiary Hospitals

The Measures for Accreditation of Healthcare institutions promulgated in 1995 in China explicitly put forward that "the State shall implement the accreditation system for healthcare institutions. After decades of development, the system has become an important institutional basis for promoting the safety and quality of health care in graded hospitals. In terms of safety and quality access management for tertiary hospitals, China has issued the Accreditation

Standards for Tertiary Hospitals (2020 Edition) (China's National Health Commission, 2020, October 21) and the Rules for the Implementation of the Accreditation Standards for Tertiary Hospitals (2020 Edition) (China's National Health Commission, 2020, October 27) (referred to as "the Standards" below). The Standards cover various aspects of health care, nursing and quality management. They contain seven aspects designed with 378 criteria and monitoring indicators, most of which are qualitative, while quantitative indicators include: a. inpatient mortality, b. re-admission, c. nosocomial infection, d. surgical complications, e. patient safety, f. rational use of drugs, and g. hospital operation and management. The Standards not only clearly state that the objective of the accreditation of graded hospitals is to provide early warning and intervention for health care safety and quality problems, to take intervention measures for existing problems, and to evaluate the results of interventions, which have strengthened the main responsibility of healthcare institutions for safety and quality; they also clarify the principles, methods and procedures of the accreditation of graded hospitals, which has greatly enhanced the level of refinement of hospital safety and quality management.

(3) Clinical pathways

The core idea of a clinical pathway is to design a rational, scientific and standardised treatment procedure for a specific disease, to follow the procedure for precise and comprehensive treatment, and to manage the procedure. The clinical pathway is a standardised disease information activity, the main purpose of which is to improve the effectiveness of treatment, enhance the quality of services, reduce the waste of resources, and ensure that patients receive good treatment and get satisfactory results. To standardise medical practice, China first proposed guidelines for the management of clinical pathways for 112 diseases in 2009, effectively improving the quality of medical services.

2.1.4 Factors influencing health care quality

Li (2008) summarises five major factors influencing health care quality, which are: 1) people. It is believed that people dominate the health care process. Particularly, the level of specialisation of doctors, nurses, medical technicians and administrative staff directly affects the level of health care quality; 2) materials. This mainly includes the medical supplies and drugs needed to carry out medical services; 3) instruments and equipment. The instruments and equipment needed to carry out medical activities must be adequate and in good condition; 4) system. A sound system of quality control must be in place; and 5) time. Timeliness, punctuality and instantaneity are very important in hospital work, especially in the case of critical patients.

Shi (2021) summarised the relevant research results in China and concluded that the factors affecting health care quality include: 1) the competence and quality of healthcare staff; 2) the payment method and convenience of healthcare services; 3) whether the healthcare service system is sophisticated; 4) patient characteristics, such as age, education and marital status; 5) financial factors, mainly reflected in the fees and charges of healthcare services; 6) the cultural value orientation of patients; 7) doctor-patient relationship, including doctor-patient communication and doctor-patient trust. Shi (2021) also summarised the measures to enhance medical services from relevant studies at home and abroad, which mainly include: 1) establishing a health care quality management system and strengthening the quality management of health care services; 2) strengthening health care risk management; 3) strengthening the development of hospital information technology; 4) strengthening case management; 5) establishing a good doctor-patient trust relationship; 6) improving and perfecting the medical insurance system; 7) strengthening the hospital team capacity and quality building; and 8) adhering to patient-centred philosophy and strengthening service awareness.

Most experts believe that society, government, health care providers, patients and hospital management all have an impact on health care quality (Detz et al., 2013; Li & Jiang, 2017; T. et al., 2015; Yan et al., 2017). The influencing factors mainly include the following aspects: 1) at the social level, the lack of social trust, which also affects patients' trust in hospitals, affects health care quality; 2) at the government level, the government's insufficient investment in public health, unsound medical security system, unreasonable distribution of medical resources as well as inadequate rule of law and imperfect system development in the healthcare sector affects health care quality; 3) at the health care providers level, influencing factors mainly include the limited medical technology level and inadequate competence and qualities of doctors, the lack of patient-centred care in medical services and the failure to establish a medical accident protection insurance system; 4) at the patient level, factors affecting health care quality mainly include the lack of health care common sense, the lack of cooperation with relevant information, the poor communication with doctors and the unhealthy psychology of a few patients in seeking medical treatment.

2.1.5 Summary

Health care quality, which is the core of health care quality management, is related to the survival and development of hospitals and the life and health of patients. Firstly, regarding the dimensions of health care quality, scholars have put forward different views from different

dimensions, with both similarities and differences, which are even a little bit confusing. But the existing research by scholars and relevant institutions shows that the dimensions of effectiveness, safety, timeliness and appropriateness are the core dimensions of health care quality. Secondly, from the perspective of health care quality evaluation, the relevant evaluation standards in China at present are still mainly drawing on the mature international standards and systems. Although there is a significant gap between the relevant research in China and that in foreign countries, China already has a certain theoretical basis and research capabilities, and the study of health care quality indicators is also becoming a mainstream and one of the directions of the scientific research of health care quality management in China. This field is also undergoing rapid development. Seen from the influencing factors of health care quality, the factors affecting health care quality are multifaceted, including social-level factors, factors related to healthcare providers and patient-related factors. This suggests that attention must be paid to multiple factors to strengthen health care quality management and that joint efforts must be made by the government, healthcare institutions and patients (Pan et al., 2017). Moreover, a sound health care quality management system needs to be stablished, which is the key to improving health care quality (Sun & Dong, 2015; Zhu, 2014).

2.2 Health care quality management

2.2.1 Definition of health care quality management

Health care quality management is the core work of hospital management, and the level of health care quality management directly determines the level of health care and doctor-patient relationships as well as the economic benefits and development capacity of a hospital (Hu et al., 2018). Strengthening health care quality cannot only enable healthcare institutions to rationally allocate human resources, equipment, technology and information technology, which are the main medical resources, to restructure the medical service process and disease management model, reduce medical errors, improve health care efficiency, and improve clinical outcomes and patient experience; it can also fully reflect the "patient-centred" philosophy, provide better and higher-quality health care for the people, and continuously meet the growing health needs of the people.

The concept of health care quality management was first introduced by Donabedian (1966), a renowned American researcher known as the "father of quality assurance". Donabedian (1966) believed that in the process of health care quality management, the first consideration is the

structure of the management system, followed by the process of management, and finally the results achieved by management, and these are the core elements of traditional health care quality management. As research gets more and more in-depth, the connotations and extensions of health care quality management have been enriched. Chinese scholars Xing and Shang (2006) hold that health care quality management is a core system project of health care system management and needs to be integrated into every aspect, department and task of hospital management. This requires hospitals to establish a management system in line with the characteristics of health care quality management to promote the continuous improvement of hospital quality management. Qin (2011) regarded health care quality management as the process of using modern scientific management methods to manage and control the elements, processes and results of health care services in accordance with the laws of health care quality and the requirements of relevant laws and regulations to achieve systematic improvement and continuous improvement of health care quality. According to Huang (2020), health care quality management is the result of controlling the aspects that constitute health care quality in accordance with the process and laws that shape it.

The above definition of health care quality management by scholars suggests that health care quality management is a systematic project, which is a comprehensive management embodiment of medical technology management, management method application and its economic efficiency management, involving such departments as hospital administration departments, business departments, logistics departments, nursing departments and medical laboratories. The ultimate purpose of health care quality management is to regulate health care service behaviour and guarantee health care safety. Therefore, the connotation of health care quality management is composed of the following four aspects: firstly, in the process of health care quality management, corresponding rules and regulations must be formulated; secondly, in the process of implementing medical behaviour, the "patient-centredness" philosophy must be adhered to, and the concept of health care quality management implemented through all the links; the quality and safety of health care can only be ensured through the supervision and management of the various elements and activities that make up the quality of health care; thirdly, it is necessary to focus on the use of modern quality management methods and management tools and constantly reform the health care quality management model in order to promote health care quality management with half the effort and provide the public with higher quality health care services; fourthly, it is necessary to carry out quality test to timely identify, collect and deal with problems in the process of health care quality management, and to evaluate and give feedback on the management results.

Health care quality management has commonalities with other quality management activities. It also has its own distinctive characteristics, reflected in the following four aspects.

Systematicness. Healthcare delivery is a complex activity, and different conditions, types of diseases and degrees of criticality make healthcare delivery more complex. Therefore, it requires the cooperation and collaboration of multiple departments to achieve good treatment effect and sound management results.

Complexity. As the people's demand for health care standards and health care services grows, healthcare institutions need to not only assume the responsibility of treating and saving patients but also give more care to patients psychologically to achieve better treatment results. In this sense, health care quality management is a result of multiple links and factors intertwining and working together, requiring a high degree of scientific rigor.

High risk. Healthcare services are provided by hospitals and received by people. As healthcare services are irreversible, healthcare workers are required to accurately determine patients' conditions and make the correct treatment judgement. Once the treatment plan is inappropriate, irreversible damage will occur. Furthermore, due to the current state of health care, even if the correct treatment plan is made, medical errors or complications may occur due to factors beyond control.

Dynamicity. Health care quality management may appear to be the management of the medical processes only. But it is clearly different from the management of products in general, as it has a very limited degree of standardisation and control, and it is a dynamic management process.

Synthesizing the definition of health care quality management by different scholars and in combination with the connotation and characteristics of health care quality management, this thesis defines health care quality management as a process of identifying the objectives of health care quality management, developing corresponding standards, and applying modern scientific management methods to manage and control the elements, processes and results of health care services in accordance with the laws of health care quality formation and the requirements of applicable laws and regulations in order to achieve systematic and continuous improvement of health care quality.

2.2.2 Development history of health care quality management

As the outcomes of health care services are related to people's lives and health, countries are exploring more standardised, rational and sound health care quality management models

(Zhang & Sun, 2003), and the world's health care quality model has gone through different stages of development. According to Taiwanese scholars Zhuang and Huang (2000), the health care quality management model in the world has roughly undergone three changes: the professional model, the bureaucratic model and the industrial model.

The professional model. The professional model, which dates to the early 20th century, assumes that quality must meet minimum standards. Quality needs to be judged by self-regulatory peer review within the professional health care team, or by participation in organizations such as the relevant medical societies of the profession to assist in the assessment. Only when a healthcare institution is accredited by one of these organizations can the health care service it performs be considered quality assured. This model of health care quality management is mainly based on technical expertise, with an emphasis on the role of doctors, simple doctor-patient relationships as well as relatively simple and homogeneous management tools.

The bureaucratic model became prevalent around the 1960s as a response to the advances in medical technology, which led to a more refined division of labour and rising standards of care. The bureaucratic model emphasises the degree to which the outcomes of health care services match the recognised outcomes of the profession. The introduction of the bureaucratic model also reverses the traditional doctor-patient relationship, where the doctor is considered the provider and the patient the beneficiary of health care services. Under this model, doctors, nurses, medical laboratory technicians and administrative staff have a clear division of responsibilities and are all involved in the process of health care delivery. They together constitute the whole process of health care quality. In the event of a medical incident, it is possible to identify which part of the process is responsible for the problem and who should be held accountable. The bureaucratic model refined health care quality management, but it also made it more difficult.

The industrial model emerged in the 1980s, when the external environment of hospitals changed dramatically under the impetus of the market economy. Specifically, competitors intensified competition among hospitals; the market's demand for quality was gradually linked to market share and economic efficiency; and patients' demand for quality of care also increased. Health care quality at this time also reflected whether a hospital was able to provide care that could meet or exceed the patient's requirements, and the patient's role changed to that of a customer. This concept has made quality management more pragmatic and comprehensive.

In terms of the history of health care quality management in the world, the U.S. is undoubtedly representative, with its health care quality management model going through the

professional model, the bureaucratic model and the industrial model. In the professional model stage, the first state nurses' associations were organized (American Nurses Association, 2022), and all nursing staff had to pass an examination before they could practise. The book entitled *A Study of Hospital Efficiency* by Codman (1916) also clearly states that health care providers were required to have the appropriate qualifications (including practising certificates and relevant licences). In 1917, the American College of Surgeons introduced the Hospital Standardization Program, which set standards for evaluating health care quality (Wright Jr, 2017). In 1952, the Joint Commission on Accreditation of Hospitals (JCAH) was established, which was responsible for the accreditation of hospitals. At this stage, the U.S. not only established a sound mechanism for the practice of medicine, but also improved the institutional mechanism for health care quality management. In the bureaucratic model stage, Donabedian (1966), the renowned father of quality assurance, proposed a three-stage structure-process-outcome quality of care model in his book entitled *Evaluating the Quality of Medical Care* and built a system of health care quality management indicators. This model further refined the health care quality management system and became an important theoretical model for health care quality management. In the 1970s, the U.S. placed greater emphasis on health care quality management, with JCAH incorporating quality assurance (QA) into its accreditation system for the first time (Chen, 2007). Since then, the U.S. further integrated QA concepts into health care quality management. In the industrial model stage, total quality management (TQM) was introduced into health care quality management practice and continuous quality improvement (CQI) was first introduced into the accreditation catalogue to replace the original QA concept. Currently, TQM has been widely used in the U.S. healthcare sector and has achieved positive results.

In comparison, health care quality management took a late start in China. It has roughly gone through the following four stages.

The beginning stage: After the founding of New China, the country was faced with an extreme shortage of health care resources. Both the software and hardware facilities required for health care services were extremely inadequate. China was faced with the dilemma of many patients and a weak foundation. In this context, the then Chairman Mao Zedong gave the "June 26" directive for the health care sector, the core of which was to establish a three-tier health care service network covering provinces and cities (states), districts (counties) as well as townships and villages to gradually establish a health care system adapted to China's national conditions. He explicitly required that health care quality management be integrated throughout the entire process of health care services (Sun & Ma, 2021).

The exploration stage: After the reform and opening-up, China further strengthened its health care system. Particularly, in the 1980s, China began to standardise the management of health care quality as a basis for assessing health care quality and hospital quality (Xiong, 2015). From 1989 to 1998, China formally implemented the three-tier management of hospitals and the hospital grade assessment process, which further promoted the standardisation of hospitals in China. In May 1997, the former Ministry of Health of the People's Republic of China issued a circular to carry out the activity of "creating the Top 100 Hospitals for patient-centred quality services" in hospitals across the country, which marked the gradual transformation of China's hospitals into service-oriented institutions and also reconstructed and repositioned the doctor-patient relationship (Dong & Zhang, 2002).

The development stage: Starting from 2005, the former Ministry of Health of the People's Republic of China launched the "Hospital Management Year" campaign in hospitals nationwide under the theme of "putting patients first and improving the quality of health care services" to explore ways to improve health care quality management mechanism and enhance hospital management (Hu, 2007). In the same year, China's Ministry of Health (2005, September 22) issued the Evaluation Guidelines of the Hospital Management (for Trial Implementation), which clearly set "continuous improvement of health care quality and safety" as the core of health care quality management. In March 2009, China's CPC Central Committee and State Council (2009, March 17) issued the "Opinions of the CPC Central Committee and the State Council on Deepening the Health Care System Reform", implementing a new round of health care system reform. The document explicitly put forward that: "Healthcare institutions should take health care quality management as the foothold and continuously improve health care services". In 2011, the Department of Medical Service Supervision of China's Ministry of Health (2011, April 22) summarised and absorbed the experience of the "Hospital Management Year" and printed and issued the *Accreditation Standards for Tertiary General Hospitals (2011 Edition)*. The purpose is to push healthcare institutions to continuously strengthen their own management, continuously upgrade their treatment and services, safeguard health care quality and enhance management to better serve the public and improve the overall standard of the health care sector (Chen et al., 2014). The implementation of these systems and special theme activities effectively contributed to improved health care quality management in China.

The refinement stage: In July 2016, the National Health and Family Planning Commission promulgated the Medical Quality Management Measures, which clearly stated that "health care quality and safety management should be comprehensively strengthened, health care quality continuously improved, and health care safety guaranteed" (China's National Health and

Family Planning Commission, 2016, October 14). In October of the same year, China's State Council (2016, October 25) printed and issued the Outline of the Program for "Health China 2030", proposing to "establish a system that focuses on the people's health needs, build a modernised health care quality management system with its own characteristics, and set up an information-based monitoring and control platform to continuously improve health care quality and safety". In September 2017, China's CPC Central Committee and State Council (2017, September 5) issued the Guiding Opinions on the Implementation of Quality Improvement Actions, proposing that "quality enhancement actions should be carried out with the fundamental aim of meeting the needs of the people, adhering to the value-oriented approach of putting quality first, and focusing on improving the quality and efficiency of development".

In general, with the promotion by administrative departments, China has basically formed a sound health care quality management system (Wang, 2007; Zhu, 2008). However, China still faces such problems as inadequate quality of medical and nursing staff, insufficient comprehensive literacy of patients, and occasional occurrence of disputes between doctors and patients. Overall, health care quality management in China is still not sophisticated (Yan, 2008). County-level hospitals, in particular, suffer from outdated management concepts, weak quality awareness, lack of professional health care quality managers, and incomplete mastery of basic skills and systems (Li, 2015), which are in urgent need of improvement.

2.2.3 Health care quality management models

The continuous development of modern quality management theories has brought many new ideas and concepts to health care quality management. In particular, with the continuous changes in the external environment, health care quality management continues to absorb advanced quality management experience in practice, effectively promoting its high-quality development. The following are several advanced quality management theories applied in health care quality management.

1. Quality Control (QC)

Quality Control (QC) is the control of processes and related activities to meet relevant quality requirements and achieve outcomes that satisfy quality requirements (Kazmierczak, 2003). Deming (1982) emphasised that QC is a systematic tool used throughout the health care service process. Evans and Lindsay (2013) argue that QC should be a responsibility of the entire staff in a healthcare institution and that each member should play an effective role in quality improvement.

The Joint Commission on Accreditation of Healthcare Organization (JCAHO) proposed a methodology for implementing quality control (Lee, 2012) consisting of ten steps: 1) clarify the division of responsibilities, and assign tasks and responsibilities for tasks related to implementing quality control; 2) define the scope of health care services in each department; 3) identify key areas of health care services; 4) identify quality indicators; 5) establish assessment thresholds; 6) collect and collate data; 7) assess the quality of health care services, and identify problems; 8) develop effective measures to solve problems; 9) evaluate the effectiveness of improvements; and 10) disseminate the results of improvements within the organisation.

An analysis shows that the ten steps of QC and Deming Cycle (PDCA) have similarities and differences. PDCA refers to Plan-Do-Check-Act, where P stands for plan, which means to develop the corresponding quality improvement plan, objectives and implementation plan; D stands for do, which means to implement the quality improvement plan, implement relevant measures, and collect relevant data for analysis and comparison; C refers to check, which means to check the results of implementation and identify existing problems; and A refers to action, which means to re-analyse the identified problems, adhere to and popularise results and experience, and summarise the lessons of failure and avoid failure again. Furrow (1993) argues that QC is an effective tool for implementing health care quality management and bears important reference value.

2. Total Quality Management (TQM)

According to Short (1995), TQM in health care is an approach to leadership and management. TQM emphasises patient-centredness, treats quality of care as a subjective experience of patients, promotes the integration of quality management into the entire process of health care delivery, calls for emphasis on leadership, promotes full staff participation and staff training, and highlights the use of data to analyse processes and measure system improvements.

TQM in the health care sector is defined as an approach to leadership and management. It sees quality as the customer's perception of the content and process of care; promotes analysis of systems to reduce errors and variation rather than blaming individual employees; recommends building long-term relationships with suppliers; uses accurate data to analyse processes and measure system improvements; establishes effective joint meetings as a basis for teamwork; trains middle and junior managers in hospitals to facilitate their leadership of the improvement process; promotes staff participation in quality improvement and timely feedback; and emphasises the need for strategic planning by senior management and the need for long-term improvement effects to be seen in the smallest detail. Lin (1995) empirically validated the

effectiveness of TQM for quality improvement in the health care sector. Other studies have supported the finding (Leigh et al., 2005; Zaim et al., 2008).

3. Continuous quality improvement (CQI)

JCAHO defines CQI as a process for achieving a new level of operation and a level of quality that is ahead of its time. According to X. Z. Xia (2004), CQI is a quality management theory based on TQM. It was first introduced in the 1980s and was first widely applied in the U.S., and then gradually expanded to other countries such as France, Korea and Japan. Chen et al. (2005) hold that CQI has the following characteristics: 1) it emphasises patient-centredness, requiring provision of quality health care services to patients in the whole process; 2) it is continuous, requiring healthcare institutions to take quality improvement as an ongoing process, constantly identify problems and solve them, thus promoting continuous improvement of their quality management; 3) it focuses on link control. CQI emphasizes the control of each link and the adoption of preventive and corrective measures to improve the overall health care quality management; 4) it emphasizes full participation, requiring all members of a healthcare institution to participate in the implementation process of CQI.

4. Six Sigma

Six Sigma is a customer-focused, economy-based and data-driven modern management method with a Black Belt team as the heart of the organizational structure and strict project planning as the means and uses the Define—Measure—Analyse—Improve—Control (DMAIC) improvement method and Design for Service (DFS) design method to achieve the goal of creating benefits with quality. In recent years, Six Sigma theory has also been gradually applied in the field of health care. Practice has shown that Six Sigma, which can effectively reduce hospital operating costs and improve hospital effectiveness and operational efficiency, is a management model with important value and significance (Brue, 2006; Kazmierczak, 2003; Taner et al., 2007). In China, Six Sigma theory has been implemented in Beijing Hospital, West China Hospital of Sichuan University and Taizhou Hospital in Zhejiang Province. These hospitals have improved their health care quality management models and enhanced their health care quality with the help of Six Sigma theory.

5. ISO 9000 Standards Series

The ISO 9000 Standards Series is a set of standards system widely recognized by the international community, and the number of organizations adopting the ISO 9000 family of quality management systems internationally is much larger than the number of organizations adopting other standards systems. Since 1997, when the Western Galilee Hospital in Israel became the first hospital in the world to pass the ISO 9001 certification, hospitals in different

countries and regions have also started to enter the IS0 9000 family of quality systems one after another (Fan, 2014). It has now been widely applied to health care quality in hospitals and has effectively improved the operational efficiency and health care quality in hospitals (Colton, 2000).

In addition, other quality management theories such as lean management and the Malcolm Baldrige National Quality Award have also been widely applied to health care quality management practices and have produced good results (De Souza, 2009; Kim et al., 2006).

Through the absorption of the successful quality management theories mentioned above, countries such as the U.S., Japan and Australia have developed more mature and representative models of health care quality management.

First, the health care quality management model in the U.S. A dedicated health care quality management organization (JACHO) has been established in the U.S. to review health care quality in U.S. hospitals. Each hospital in the U.S. has an organizational framework consisting of a board of directors, a chief executive officer, hospital staff and relevant administrative bodies, all with an independent health care quality management department, which is composed mostly of professional health care quality managers, all with extensive experience in healthcare quality management. Most U.S. healthcare institutions have a quality improvement committee, which is directly led by the President and has branch quality committees for clinical, laboratory and nursing departments. The responsibilities of this committee are to develop an overall plan for quality improvement, oversee the implementation of quality improvement efforts, supervise staff participation, strengthen guidance on key areas of improvement and direct the work of the improvement teams established under it (Su, 2013).

Second, the health care quality management model in Japan. The Japan Council for Quality Health Care was established in 1995 to manage the quality of health care in Japanese hospitals. Japan has adopted a centralised model of health care quality management and has established a health care quality management leadership team headed by the President, with the Vice President as the deputy head and the Heads of Treatment, Affairs and Nursing as members. There is also an independent health care quality management department responsible for the management of health care quality in the hospital. The internal management mechanism of Japanese hospitals is relatively simple and clear, characterised by a reasonable division of labour and convenience of cooperation. Due to the adoption of a lifetime employment system, management personnel are relatively fixed. Therefore, hospital management outcomes are relatively stable (Su, 2013).

Third, the health care quality management model in Australia. ACHS was established in

1974 to review health care quality management in hospitals. In terms of organizational management systems, Australia has established a management organization consisting of a hospital board, a director or chief executive officer, a functional department and various other departments. The Board of Directors is responsible for macro management; the President or CEO is responsible for management of specifics; and the functional department and various other departments are the specific executive departments. The hospital has a Quality and Safety Committee formed by senior management and physician representatives. It is responsible for health care quality management in the hospital and is under the direct supervision of the President. Under the committee, there are sub-committees for clinical, pharmacy, laboratory, ethics and information, which are responsible for health care quality management in their respective areas. In addition, Australian hospitals have established a sound quality control mechanism, a dedicated quality control body, a quality management information system, a public reporting system, a hospital management information system and a quality information system to effectively achieve comprehensive health care quality management (Wei & Sun, 2012).

2.2.4 Practical dimension of health care quality management

As people's demand for health care services continues to rise, the international level of health care quality continues to improve. The healthcare industry is developing rapidly, and competition is intensifying. To further strengthen health care quality management and improve healthcare services, TQM, CQI and other related theories have been successively used in health care quality management practices. Scholars have also conceptualised the practical dimensions of health care quality management from different perspectives based on different theories. Based on the summary table of the practical dimensions of health care quality management sorted out by Xiong (2015) and with reference to relevant research results in recent years, this thesis presents the results related to the practical dimensions of health care quality management at home and abroad as shown in Table 2.2 below.

Table 2.2 Practical dimensions of health care quality management

Researcher (year)	Country(ies)	Target hospitals	Interviewees	Practical dimensions of health care quality management
Lin (1995)	The Netherlands U.K.	Hospitals of different sizes	Executive vice presidents of the hospitals and heads of quality management department and	Senior management commitment, strategic plan, team, impact of TQM on employees, physician engagement, attitude towards TQM

Researcher (year)	Country(ies)	Target hospitals	Interviewees	Practical dimensions of health care quality management
Carman et al. (1996)	U.S.	Hospitals with 60-571 beds	CQI collaboration department Executive president and relevant quality managers	Environment and resources, implementation approach, physician engagement, depth of implementation and culture
Kunst and Lemmink (2000)	Spain U.S. The Netherlands	General hospitals in the public and private sectors	The head of the quality management department was surveyed for large general hospitals, and the president was surveyed for small general hospitals.	Leadership, policy & strategy, people management, resources and process management
Meyer and Collier (2001)	U.S.	Community hospitals and general acute care hospitals	Heads of quality management departments and related staff	Leadership, information and analysis, strategic planning, human resource management and process management
Raju and Lonial (2002)	U.S.	All types of hospitals	Presidents responsible for quality management	Market environment, leadership attention and support, managers' awareness and knowledge base of quality management, product process environment and past quality performance
Dilber et al. (2005)	Turkey	Small and medium-sized hospitals	Hospital presidents	Leadership support, process management, data collection and reporting and employee relations
Barron et al. (2005)	U.S.	All types of hospitals	Executive directors of hospital quality management	Commitment and support from leaders, active involvement of the board of directors, effective management structure, involvement of quality management experts, involvement of all staff, involvement of physicians, collection and use of information and an open and effective communication strategy.
Macinati (2008)	Italy	Public hospitals	Hospital directors	Staff engagement, staff development, quality information analysis, quality department roles, quality management of suppliers and process management
Kunkel et al. (2009)	Sweden	All departments of the hospital	Heads of quality management and cooperation	Structure, process, results, implementation prerequisites, collaboration models and motivations for quality

Researcher (year)	Country(ies)	Target hospitals	Interviewees	Practical dimensions of health care quality management
			departments	improvement
Wardhani et al. (2009)	U.S.	Public hospitals	Heads of hospital quality management department	Organizational culture, organizational design, leadership, physician engagement, organizational structure for quality and technical support
Alolayyan et al. (2011)	Jordan	Public hospitals and private hospitals	Managers, department heads and heads of quality management departments	Leadership support, strategic planning, information analysis, training, customer orientation, continuous improvement, process management and supplier management
Lee et al. (2013)	South Korea	Hospitals with more than 100 beds	Heads of the hospitals responsible for quality management and heads of the quality management department	Leadership support, strategic planning, focus on patients, measurement, analysis and management, valuing staff and process management
Sabella et al. (2014)	Palestine	Private hospitals and public hospitals	Doctors, nurses and other hospital staff	Human resource management, customer focus, strategic planning, information and analysis and process management

Table 2.2 reflects the different practical dimensions of health care quality management by different scholars in combination with different research areas. It can be found that the practical dimensions of health care quality management are abundant and varied, and the sample hospitals in the above table includes both public hospitals and a mixture of public and private hospitals. The sample hospitals range from small hospitals such as community hospitals and acute care hospitals to large general hospitals; and the sample/case hospitals were from different countries and regions. This wide scope of coverage also fully reflects the current international community's emphasis on the practice of health care quality management and that health care quality management has become the core theme of hospital management. The existing literature shows that there are obvious differences in the conceptualisation of the dimensions of health care quality management among scholars. But it is easy to see that there are many commonalities in the different types of conceptualisations, such as the emphasis on the role of leadership, participation by all staff, system building as well as the importance of staff education and continuous improvement.

2.2.5 Summary

This section introduces the definition, development history, models, and practical dimensions

of health care quality management. Seen from definition, health care quality management is the core project as well as a systematic project of the health care system. At present, international research on health care quality is quite comprehensive, while Chinese research on health care quality management focuses more on the evaluation of indicators, but the core contents are not very different from those of international research. From the perspective of the development of health care quality management, foreign countries have gone through three stages. In comparison, the development of health care quality management in China lags behind. It took start after the founding of New China, went through the exploration stage after the reform and opening-up, and only formally stepped into the legal track after the introduction of the Medical Quality Management Measures in 2016. Regardless of the research field, research scope and the degree of development, China still significantly lags behind foreign countries. Nevertheless, after decades of development, relevant theories have been gradually established, and relevant research results have emerged in large numbers, which will all contribute to the continuous improvement of China's health care quality management. In terms of health care quality management models, China has been exploring the introduction of better and more advanced concepts for health care quality management since the reform and opening-up. Notably, theories such as TQM, Six Sigma management and continuous improvement have been applied in some Chinese hospitals. However, relevant successful practical experiences need to be further explored, especially at the county level in China, where the ability to apply relevant theories to enhance health care quality management is still insufficient due to constraints in management capacity, staff quality and infrastructure. In terms of the practical dimensions of health care quality management, differences in countries, systems, cultures and management models can lead to differences in health care quality management, which need to be explored in the context of Chinese hospitals.

2.3 An overview of total quality management (TQM)

Over the past two decades, TQM has become the most widely used management term. As a quality management theory, it has been widely accepted by managers and quality practitioners (Arumugam et al., 2009), with particular interest from governments and organizations around the world (Al-Shdaifat, 2015). As TQM can improve the quality of services and hence customer satisfaction (Nguyen & Nagase, 2019), it plays a crucial role in the development of management practices (Hoang et al., 2006; Prajogo & Sohal, 2004).

2.3.1 Definition of TQM

TQM emerged in the mid-to-late 20th century after the American quality control expert Feigenbaum (1961) first proposed the concept of TQM based on traditional quality management theories and in light of social development trends and changes in business management concepts. He considered that TQM entails carrying out market activities in the most economical way on the premise of meeting customer requirements and integrating all departments and links within an enterprise through market research, product design optimisation, production and service to enable the enterprise to maintain an efficient state of operation and achieve the purpose of reducing management costs. Later, Feigenbaum (1991), based on in-depth research, argued that TQM is the integration of quality management into the whole process of a company's production and operation based on leadership and an understanding of quality improvement to involve the entire staff with the goal of reducing total quality costs. With the continuous development of theory, scholars have continued to deepen their research on TQM. Due to the different focuses of different scholars' research, there has not been a unified definition of TQM. Overall, the following views have been broadly formed in academia.

1. TQM as a culture. From a cultural perspective, Gunasekaran (1999) argues that TQM is a team culture that requires the active participation of all employees in the enterprise and continuously improves the management effectiveness of the enterprise through the influence of the culture, thereby continuously increasing customer satisfaction with the company and its products. Mosadeghrad (2003) also argues that TQM embodies enterprise culture which is committed to continuous improvement to enhance customer satisfaction. Tobin (1990) states that TQM is a fully integrated programme to gain competitive advantage through continuous improvement in all aspects of organizational culture.

2. TQM as a process of improving organizational management. According to Flynn et al. (1994), TQM is the continuous enhancement of process improvement and error prevention based on efforts to achieve high quality products and services in order to perfect all levels and all functions of the organization and produce a product that meets or exceeds customer expectations. Ross (1993) regarded TQM as an integrated management practice that emphasises increased employee involvement and teamwork, continuous improvement, meeting customer requirements, fact management, team-based problem solving, continuous measurement of results and closer relationships with suppliers.

3. TQM defined as an institutionalized process of management. It is about promoting the production of products or services that meet the needs of customers by continuously injecting

a culture of institutional improvement into the organization, with product quality as the core. According to Senthil et al. (2001) and Selladurai (2002), TQM is a continuous and uninterrupted management process that aims to continuously improve the organization's management system, to continuously develop a more superior management system and to ensure that the organization's institutional mechanisms are always in a state of continuous improvement. Djerdjour and Patel (2000) considered TQM a concrete manifestation of a management philosophy that drives organizations to continuously improve their management processes, employees, services and products, so that the organization will be kept in a state of constant renewal and improvement to meet customer needs. Pun (2002) saw quality management as an integrated management concept that emphasises the establishment of long-term strategic plans, continuous improvement of organizational management systems, increased employee involvement and enthusiasm, the formation of corporate culture and cohesion, and the use of teamwork to solve problems, thereby improving product quality, forming its own core competitiveness, creating an industry benchmark and achieving customer satisfaction.

4. TQM seen as a strategic approach. Oakland (1993) saw TQM as a strategic approach to meeting customer needs by increasing efficiency, flexibility and corporate competitiveness. Terziovski (2006) defined TQM as a strategic approach to improve the quality of products and services in a comprehensive, holistic and systematic manner to achieve sustainable competitive advantage for business organizations. Ehigie and McAndrew (2005) argue that TQM is considered an important strategic mechanism to facilitate the smooth running of a business and to gain competitive advantage.

5. TQM seen as a system. Evans and Dean (2003) considered TQM a holistic system whose effectiveness involves all departments and extends up and down the supply chain. TQM reflects the continuous adjustment and optimisation of the management system, including the continuous adjustment and change of values, technologies, products, mechanisms, institutions and management systems to reduce costs and improve customer satisfaction (Hansson, 2001).

Although different scholars have different definitions of TQM, the above-mentioned scholars' definitions show that TQM should include at least the following aspects.

1. TQM requires the participation of all employees of the organization. In other words, the participation of all employees is a necessary condition for TQM. Besides, TQM attaches great importance to the role of employees, including staff training, enhancing staff cohesion, creating a suitable organizational culture, strengthening staff cooperation to enhance the effectiveness of teamwork, respecting staff and uniting staff, to guide and encourage staff to actively participate in the TQM process.

2. The aim of TQM is to improve the quality of products or services to meet customer needs and serve them. Therefore, it is necessary to constantly understand customer needs and use them as a guide to adjust production and management strategies for the purpose of meeting and exceeding customer needs and providing customers with a good service experience. Improving business performance is also the focus of TQM. If business performance is not improved, enterprises will lack motivation to carry out TQM.

3. TQM requires enterprises to develop a long-term strategic plan and to use strategic planning to integrate the various TQM requirements and create an integrated management system, thereby safeguarding the quality of production and operational efficiency of enterprises.

4. The focus of TQM is on process improvement and management system improvement, a process that is not limited to enterprises but needs to be extended to the entire process from supplier to consumer. Besides, responsibilities, rights and obligations should be clearly defined at each step of the process.

5. TQM is concerned with "ex ante prevention" rather than "ex post handling". Therefore, TQM is a preventive initiative in advance and requires proactive management thinking and methods to implement all aspects of quality management.

6. TQM is based on the idea of continuous improvement. Quality improvement of products and services is a cyclical process that requires continuous improvement in response to changes in the internal and external environment as well as changes in the market. It also requires continuous improvement in the awareness of the participants, especially the managers.

Based on the existing literature, this thesis argues that TQM is a strategic approach centred on customers, based on participation of all employees and aimed towards continuous improvement. It is a process of implementing continuous and effective management and making continuous quality improvement through the establishment of effective regulations, management strategies and planning programmes.

2.3.2 Constituent dimensions of TQM

With its continuous development since the 1980s, TQM has gradually become an independent research field and has received keen attention from scholars, who generally regard TQM as a multidimensional concept. Scholars such as Saraph et al. (1989), Sila and Ebrahimpour (2002) and Antony et al. (2002) have all studied the structure of TQM, and their studies have provided different sets of practices that are considered to be key factors for successful implementation of TQM. However, a generic TQM management structure has not yet been developed as the focus

of different scholars is not consistent.

The first scholars to propose the constitutive dimensions of quality management were Saraph et al. (1989), who used case studies, in-depth interviews, factor analysis and other scientifically rigorous statistical methods to construct the dimensions of quality management. The eight dimensions of quality management were identified to be the role of top management leadership, the role of the quality department, training, product/service design, supplier quality management, process management, quality data and reporting as well as employee relation. Saraph et al. (1989) laid the cornerstone of the constitutive dimensions of TQM. Since then, scholars have built on them to design and develop the constitutive dimensions of TQM from different perspectives. Bayraktar et al. (2008) argued that TQM should contain the following dimensions: leadership, vision, measurement and evaluation, process control and improvement, program design, quality system improvement, employee involvement, recognition and reward, education and training, student focus and other stakeholder focus. Kanji and Wallace (2000) argue that TQM should consist of ten dimensions: leadership, delighting the customer, customer focus, management by fact, process performance, people-based management, people performance, continuous improvement, improvement culture and business excellence. In a study by Brah et al. (2002), seven dimensions of successful quality management implementation were identified: corporate planning, role of top management leadership, customer focus, human resource focus, process focus, quality focus, and information and analysis. Talib et al. (2010) identified a set of 17 elements of TQM: top management commitment (TMC), customer focus (CF), training and education (TE), continuous improvement and innovation (CII), supplier management (SM), employee involvement (EI), information and analysis (IA), process management (PM), quality system (QS), benchmarking (BM), quality culture (QC), human resource management (HRM) strategic planning (SP), employee empowerment (EE), teamwork (TW), communication (COM) and product and service design (PSD).

Chinese scholars have also conducted a series of studies focusing on TQM. According to Jiang et al. (2009), TQM is composed of five dimensions: quality training, quality information, process management, statistical process control and continuous improvement. Li et al. (2009) divides TQM into six dimensions: leadership commitment, employee involvement, supplier management, process management, product design and customer focus. Xiong and Feng (2011) regarded that TQM is composed of five dimensions, namely leadership commitment, quality information, process management, employee relations and customer focus.

As the constituent elements of TQM are diverse, to further clarify the relationships among

the elements of TQM, Flynn et al. (1995) integrated the various elements of TQM into two major dimensions, namely core quality management practices and quality management infrastructure practices. The core quality management practices are the sum of a series of activities that can effectively improve the quality of products and services, including leadership commitment, product design, process management and process improvement; quality management infrastructure practices mainly refer to the guarantee and support for the smooth implementation of the core practices, and a series of infrastructure practices will also indirectly affect the implementation of the core quality management practices. Flynn et al. (1995) further clarified the interactions among the factors and laid a solid foundation for subsequent research. In addition to the findings of Flynn et al. (1995), Sousa and Voss (2002) focused on the difference between the core practices and the infrastructure practices of TQM, and concluded that the core practices of TQM reflect the institutional establishment, process management and technical support of the organization, while the infrastructure practice of TQM reflect mainly non-institutional aspects and the effectiveness of the organization. Accordingly, Graham et al. (2014) classify the dimensions of TQM as soft and hard elements; Choo et al. (2007) conceptualised TQM as comprising technical and social parts. Despite the differences, these conceptualisations were all directly related to Flynn et al. (1995) and did not make a substantial breakthrough.

Due to the various classifications of TQM by scholars, Karuppusami and Gandhinathan (2006), Talib and Rahman (2010) and Hietschold et al. (2014) collated the published literature on quality management dimensions and identified the most frequently occurring quality management dimensions, as shown in Tables 2.3 below.

Table 2.3 The most frequently occurring quality management dimensions

Scholars	Search results of the practical dimensions of quality management (in order of frequency from highest to lowest)
Karuppusami and Gandhinathan (2006)	1) The role of management leadership and quality policy; 2) supplier management; 3) process management; 4) customer focus; 5) training; 6) employee relations; 7) product/service design; 8) quality data; 9) role of quality department; 10) human resource management and development
Talib and Rahman (2010)	1) Top management commitment; 2) customer focus; 3) training and education; 4) continuous improvement and innovation; 5) supplier management; 6) employee involvement; 7) quality information and performance measurement; 8) benchmarking; 9) employee encouragement
Hietschold et al. (2014)	1) HRM/recognition/teamwork; 2) top management commitment and leadership; 3) process management; 4) customer focus and satisfaction; 5) supplier partnership; (6) training and learning; 7) information/analysis/data; 8) strategic quality planning; 9) culture and communication; 10) benchmarking; 11) social and environmental responsibility

The above literature shows that different scholars have conceptualised the dimensions of TQM from different perspectives. In either the healthcare sector or other sectors, the criteria

used by scholars are not consistent. Nevertheless, there are still many common elements. For example, most scholars regard leadership commitment, training and education, process management, customer focus, and employee involvement as important elements of TQM (Molina-Azorín et al., 2009).

A review of the existing literature also shows that TQM is not just a set of factors, but a network of interdependent factors and a system of key factors, techniques and tools (Hellsten & Klefsjö, 2000). Besides, the constituent elements of TQM can be broadly classified into two categories, management systems (including such elements as leadership, planning and human resources) and technical systems (including such elements as technical control and process control in production and work processes).

2.3.3 The main methodological steps for implementing TQM

The TQM approach focuses on improving process effectiveness and responsiveness to customer requirements as part of the organizational excellence goal of achieving customer satisfaction (Ramlawati, 2018) .

Since the 1980s, scholars have conducted comprehensive research on the methods of TQM. The main methods with high theoretical value and wide influence include the Deming Cycle (also known as the PDCA cycle), the Quality Trilogy and the Deming's 14 Points for Management, which have continued to promote the continuous development of TQM and made outstanding contributions to the formation of competitiveness by TQM.

1. PDSA Cycle (Deming Cycle)

In 1939, Shewhart (1939) proposed the Shewhart Cycle of Specification, Production and Inspection. In 1950, Deming (1950), in a lecture in Japan, further developed the Shewhart Cycle and proposed a cycle of designing the product, making it, putting it on the market, testing it through market research, and redesigning the product, emphasising the continuous interaction between design, production, sales and research, which later evolved into the PDCA cycle. PDCA refers to Plan, Do, Check and Adjust, and PDCA is an acronym for these four words. The core meaning of PDCA is an infinite cycle of management activities, in which quality management activities are continuously improved, and each cycle is a process of quality management improvement.

In the 1980s, Deming (1986) argued that the cycle of Plan, Do, Check and Adjust was not accurate. Later, Deming (1990) proposed the PDSA cycle of Plan, Do, Study and Act. He believed it is important to focus on short-term improvements as well as long-term continuous

learning. The PDSA cycle is featured by the following eight steps: 1) clarify the problem; 2) analyse the cause of the problem; 3) identify the main cause affecting quality; 4) develop improvement measures; 5) implement the improvement measures; 6) check the effectiveness of the improvements; 7) summarise experience; and 8) identify remaining problems. The PDSA cycle, which emphasizes the prevention of errors by setting standards and continually revising them, is widely used in the field of quality management.

2. Juran's Quality Trilogy

The "Quality Trilogy" was proposed by the famous American management guru Juran (1986), who divided quality management into three steps, namely quality planning, quality control and quality improvement, as shown in Figure 2.1 below.

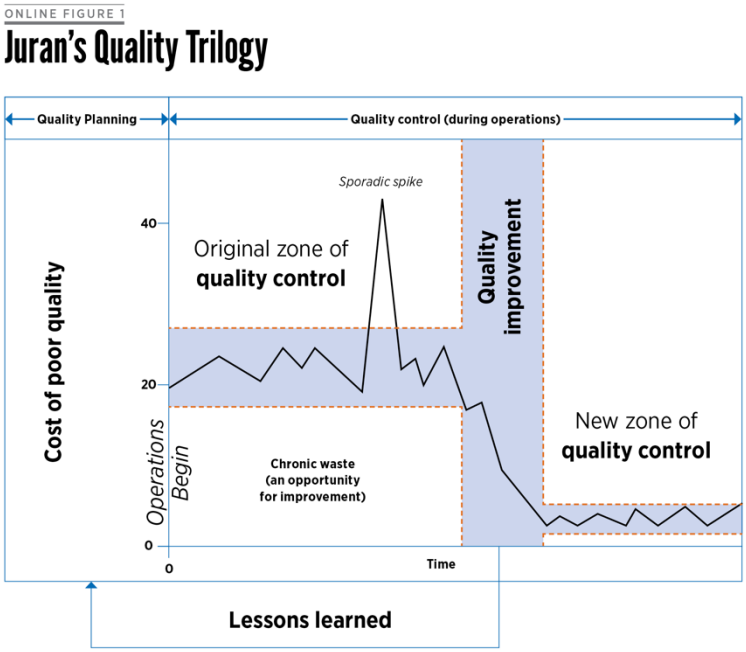


Figure 2.1 Juran's Quality Trilogy

Source: Juran (1986)

Quality planning is the design of a scientifically feasible implementation plan based on established quality management objectives. The premise of quality planning is satisfying the customer and revisiting the product and service gaps from the customer's perspective. These gaps are reflected in the understanding gap, the design gap, the process gap and the operational gap. The understanding gap refers to a lack of understanding of the customer's needs and a failure to understand or fully understand the customer's quality needs. The design gap refers to that the design of the implementation of the customer's needs for the product or service is not up to standard and cannot fully meet customer requirements and that there are certain deviations. A process gap is a situation where the customer's quality requirements are understood, and a product can be designed that basically or completely meets the customer's requirements, but

there are deviations from the customer's requirements during the production, transport, delivery and subsequent service of the product. An operational gap is the situation where the quality management process implemented has a negative impact on the customer or has side effects. The main approaches to addressing these quality gaps include fully understanding customer quality needs, optimising product design to meet customer needs, establishing a customer-focused quality management system, and establishing evaluation mechanisms to monitor the process of delivering products that meet customer needs.

Quality control refers to the use of theoretical knowledge and technical methods of quality management for the purpose of achieving TQM for products or services. Juran (1986) divided quality control into seven steps: identifying the target of quality control, selecting measurement units, establishing measurement methods, constructing performance standards for the product or service, measuring actual performance, exploring the causes of gaps, and implementing relevant measures to improve quality.

Quality improvement is a series of measures that managers take to optimise the quality management of a product or service based on the problems that exist. Quality improvement is the deepening of the management process with the aim of breaking away from the original plan and achieving better quality management results than expected. Juran (1986) identified eight steps of quality improvements: validating the need for quality improvement, defining a specific project for quality improvement, organizing a steering project, organising a diagnosis, finding the root cause of the quality problem, providing relevant remedies, verifying the effectiveness of the remedies and providing controls to ensure the benefits.

All the links of the Juran (1986) Trilogy of Quality Management can be described as complementary to each other. The purpose of quality planning is to understand customer needs, to clarify the direction of quality management, to create good external conditions for the provision of products and services, and to ensure that products and services meet customer needs. The purpose of quality control is to establish a systematic and complete process to ensure the smooth implementation of quality planning, and the level of its implementation will directly affect the effectiveness of quality management. The purpose of quality improvement is to further improve quality management. In practice, the Juran Trilogy of Quality Management are also widely used.

3. Deming's 14 Points for Management

In the 1980s, when American industry was in the middle of a crisis, Deming (1986) proposed the 14 Points for Management, suggesting that the American way of doing business had to be overhauled rather than incrementally improved. The 14 Points for Management are a

top-down approach to quality management that includes a number of aspects such as management thinking, manner of working and personnel training. The 14 points are as follows.

1) Create constant purposes toward improvement of product and service with a view to becoming competitive, staying in business, and providing jobs.

2) Adopt the new philosophy. Managers must awaken to the challenge, learn their responsibilities, and take on leadership for change.

3) Stop depending on inspection to achieve quality. Eliminate the need for inspection on a large scale by building quality into the product in the very beginning.

4) End the practice of awarding business based on price tag.

5) Constantly improver the system of production and service to improve quality and productivity and constantly decrease costs.

6) Carry out on-the-job training.

7) Overhaul the supervision of management and production workers.

8) Increase workers' work efficiency.

9) Break down barriers between departments. People in research, design, sales and production must work as a team to foresee problems of production and in use that may be encountered with the product or service.

10) Eliminate requirements for employees to achieve zero defects and new levels of productivity.

11) Eliminate work standards (quotas) on the factory floor.

12) Eliminate management by objective.

13) Institute a vigorous program of education and self-improvement.

14) Make transformation the job of everyone in the company.

In addition, some other scholars have also examined the main approaches to implementing TQM. Fitriani (2019) argued that the implementation of TQM consists of three main phases: 1) the preparation phase; 2) the planning phase; and 3) the implementation phase. Kumar and Shanmuganathan (2019) further elaborated and extended the three phases of TQM by Fitriani (2019). They argue that to effectively implement the three phases of TQM, support from leadership commitment, employee involvement and other factors is indispensable. Oakland (2003) argues that to ensure that TQM theory is effectively implemented in an organization, all components of the organization must work together as a team, and that each part of the organization, each person and each activity are interactive.

The literature further shows that the implementation of TQM must be supported by planning, targets measures, evaluation and improvement; it is not a transient management

process, but a continuous process of improvement. First, in the process of implementing TQM, top-level commitment is the key. Only when the top leadership promotes it can all departments and all staff participate to guarantee the implementation of TQM in the whole hospital. Second, practical and reasonable implementation measures must be developed. The key aspects of quality management must be identified, and the actual situation should be taken into consideration to collect opinions from all sides, clarify the objectives, develop a clear implementation plan and adopt appropriate tools and techniques to ensure the effective and smooth implementation of TQM. Third, participation by the entire staff is necessary. Not only should the entire staff participate, but the coordination between all departments should be strengthened to eliminate obstacles and establish a cooperative relationship that is beneficial to all parties. Fourth, continuous dynamic improvement should be ensured. Measures should be taken to strengthen the collection of opinions and problem analysis, strengthen the innovation of concepts, constantly identify problems and solve them to implement TQM in a systematic and step-by-step manner. Fifth, patience is a virtue. TQM is a continuous process that is not supposed to produce significant results in the short term. Continuous implementation is required before major progress is made.

2.3.4 Application of TQM in practice

As research gets more and more in-depth, TQM has been applied to many fields such as manufacturing industry, service sector, healthcare and education with positive results (see Table 2.4 below).

Table 2.4 Implementation results of TQM in different industries

Researchers (Year)	Target industry	Implementation results
Bunglowala and Asthana (2016) Dewi et al. (2015)	Education	The implementation of TQM led to more effective teaching and learning in the education sector, with significant improvements in the quality of education, teaching standards and student satisfaction.
Arifin (2017) Al-Ettayyem and Zu'bi (2015)	Finance	The implementation of TQM optimised the management mechanisms of the financial system, resulting in a significant improvement in performance.
Talib and Rahman (2015)	Service sector	The implementation of TQM rationalised the management mechanisms of the service. It also allowed the researcher to identify a lack of communication and a lack of management commitment as the biggest barriers to the implementation of TQM.
Sari and Firdaus (2018)	SMEs	The study on the implementation of TQM in SMEs showed that TQM can effectively help SMEs improve their business performance and enhance their core competencies.
Nugroho and		

Researchers (Year)	Target industry	Implementation results
Nurcahyo (2018) Sainis et al. (2017)		
Kiruthiga (2016)	Architecture	The implementation of TQM can significantly enhance organizational performance in the construction industry, improving product quality, employee and customer satisfaction. Their study also revealed that the implementation of TQM can also increase supplier motivation and enhance supplier performance.
Lee and Lee (2014)	Insurance	TQM has a significant positive impact on business performance.
Kantardjieva (2015)	Industrial sector	The study showed that quality is a key factor in the implementation of TQM in organizations and that companies must have a robust and well-developed quality control plan.
Sweis et al. (2019)	Multiple sectors	TQM implementation improved product quality, customer satisfaction and led to an increase in customer orders, demand and, as a result, a sustained increase in sales profits.
Mitreva et al. (2016)	Food processing	The study suggested that the implementation of TQM in the food processing industry can effectively improve industry efficiency and customer satisfaction.
Kim (2016) Kuo (2016) Sila and Walczak (2017)	Manufacturing	TQM can start with good leadership, attention to customer needs and better process management, and the implementation of TQM helps positively influence customer capital and contributes to increased customer satisfaction.
Cheng and Choy (2013)	Retail	The implementation of TQM helps increase operational performance, financial performance and improve customer satisfaction.

2.3.5 Summary

This section provides an overview of the definition, constituent dimensions, implementation steps and practical application of TQM. The existing literature shows that TQM has been widely applied in various fields and has helped to optimise and improve management mechanisms in different fields with satisfactory results (Permana et al., 2021). The main reason why TQM is so widely used is that it is a customer-centred approach to provide the best possible product or service to customers by improving the quality of products and services to meet their needs and increase their satisfaction. In addition, TQM can lead to the optimisation of an organization's management procedures, enhance the cohesion of employees, and enable the formation of core competitiveness and staff centripetal force, which is also important for the long-term stable development of the enterprise.

2.4 Application of TQM in health care quality management

2.4.1 Connotation of TQM in health care quality management practices

Currently, researchers have conducted research around the use of TQM in the healthcare sector in combination with the direction and focus of their respective studies. Although there is no clear definition, they have elaborated on what TQM should consist of in the healthcare context. For example, Thornber (1992) developed a TQM model for health service organizations. In his model, TQM is defined as an approach to leadership and management that includes the following key components: 1) defining quality based on customers' perception of service content and delivery; 2) analysing system errors and changes rather than blaming people; 3) maintaining and developing long-term relationships with external and internal suppliers; 4) using accurate data to analyse processes and measure system improvements; 5) establishing effective collaboration mechanisms as the basis for teamwork; 6) enhancing supervisor and manager-led training for continuous process improvement; 7) involving employees in setting goals, and ensuring feedback on results; 8) emphasising the need for strategic planning by senior management; and 9) achieving long-term improvement through small incremental steps. According to Song et al. (2016), TQM helps to improve the overall health care quality and safety and its core elements include quality as the core, participation by all staff and whole process control. Pan and Li (2013) studied the application of TQM in nosocomial infection departments and concluded that the implementation of TQM in nosocomial infection departments should include at least the following elements: 1) comprehensiveness, referring to that the concept of TQM must cover the whole hospital and all departments of infection management and quality management; 2) hospital-wide coverage, which means all hospital staff must be trained and learn and implement TQM; 3) whole process, meaning that the concept of TQM must be implemented in the whole process of health care delivery. McLaughlin and Kaluzny (1997) studied the contents of TQM implementation in Japanese hospitals, which mainly include: 1) reforming the hospital's business philosophy with the concept of TQM, focusing on purpose and effectiveness; 2) all staff and all departments within the hospital must accept the TQM concept and engage in behaviours consistent with TQM requirements; 3) focusing on staff training and education; 4) focusing on dynamic analysis and improvement management in the process of TQM implementation; 5) implementing comprehensive and integrated management with the goal of patient and staff satisfaction. The above literature shows that the aim of TQM in the healthcare sector is to enable hospitals to establish a patient-

centred, safe and efficient healthcare environment by improving efficiency, enhancing service levels and reducing healthcare costs (Yu & Zhang, 2006a). The existing literature on TQM and the application of TQM in healthcare shows that TQM in healthcare also follows the basic TQM framework, and that there is no major difference between the two except the differences in quality control links in different applicable industries. TQM in healthcare can therefore be defined as: TQM is a strategic approach centred on high-quality health care services, based on the participation of all healthcare staff and aimed towards patient satisfaction. It is characterised by continuous and effective management of the whole process of healthcare delivery and other areas involved in the hospital through the establishment of effective regulations, management strategies and planning programmes to continuously enhance the satisfaction of patients, doctors, nurses, suppliers and other stakeholders.

2.4.2 Steps for implementing TQM in health care quality management practices

Scholars have proposed steps for implementing hospital quality management activities using TQM.

According to Yu and Zhang (2006a), TQM should be implemented in the following six steps in the process of hospital health care quality management: 1) analyse the various important aspects of the hospital health care quality management process, and clarify the issues that should be focused on and attended to in each aspect of quality control. This is the fundamental work for TQM implementation and requires the formulation of the objectives of TQM; 2) establish a specific organization. The reality of the hospital and the quality requirements of each link in health care quality management should be taken into consideration to put forward corresponding quality management measures and to equip the organization with the appropriate personnel, equipment and other safeguards; 3) issue documents to clarify the implementation requirements, requiring the participation of all staff to form synergy; 4) carry out full staff training, requiring careful training from the management down to the ordinary health care workers 5) supervise quality audits, the main purpose of which is to ensure that the concept of TQM is accurately and comprehensively implemented; 6) quality system review. The results of the reform and the information collected through feedback should be taken into consideration to constantly carry out quality system review to continuously improve in order to achieve the set goals.

Bai (2004a, 2004b) argues that the implementation of TQM in hospitals can be divided into three stages: 1) the stage of establishing a preliminary TQM system. This mainly includes the

establishment of an organizational framework for TQM, strengthening the theoretical study of TQM, enhancing all staff's understanding of the TQM theory, and gradually accepting the application of the concept for reform; continuously strengthening training to enhance the ability to apply the TQM concept for health care quality management; establishing work groups and arranging work group personnel to various departments and divisions for guidance, reflecting at any time problems in the implementation process, studying response strategies in a timely manner, and enhancing management effectiveness. 2) the stage of TQM extension. Clear objectives for TQM should be set, and based on these objectives, practical measures should be formulated to implement these measures in line with the reality in the hospital; a satisfaction survey mechanism should be established to investigate the satisfaction of staff and senior and middle leaders, collect relevant issues and opinions and suggestions, and promptly assess the effectiveness of the implementation of TQM; the collaboration among various departments in the hospital should be strengthened, and the role of counsellors should be further given play to. The progress of TQM implementation should be published in the hospital on a regular basis to deepen TQM implementation. 3) the stage of TQM integration and continuous improvement. According to the opinions and suggestions collected and problems identified during TQM implementation, a patient-centred "reengineering project" should be carried out to re-plan the internal workflow, make reasonable adjustments to the organizational structure, continuously innovate the management mechanism and management mode, strengthen hospital culture development, and make TQM part of the hospital culture that is fully integrated into the thinking and work of the staff. The ultimate goal is to form a new model of health care quality management with quality as the top priority and customer satisfaction as the aim, and continuously improving hospital services and patient satisfaction.

J. F. Xia (2004) analysed TQM implementation in Bethlehem Hospital in Germany, summarised the implementation steps, and drew experience of the hospital: 1) Equipping dedicated personnel. Dedicated personnel should be selected to be responsible for TQM implementation in the hospital. The dedicated managers are under the vertical leadership of the director, and their main responsibility is to be fully responsible for the unified management of health care quality in the hospital, including quality planning, treatment process and nursing management. This is a model of overall unified management that can contribute to the overall coordination and promotion of TQM from top to bottom. 2) Formulating the overall objectives of comprehensive strategic management. The opinions of each department and section should be collected to formulate the overall TQM goal, which comes from departments' opinions and serves departments' development. Once the goal is set up, all staff are required to refer to the

implementation, and feedback is given in a timely manner for the problems identified, reflecting the requirement of participation by all. 3) Continuous dynamic quality improvement. The opinions of hospital staff on TQM implementation should be collected relying on scientific evaluation methods and questionnaire surveys every three years. The collected opinions should be collated and categorised into a list for solution and improvement one by one to effectively improve hospital management.

Yang et al. (2019) studied TQM in their own hospital and identified the following implementation steps: 1) Establish a TQM team led by the head of the quality control department and the director of the nursing department, with key members of the quality control department and the nursing department as members. The TQM team shall be responsible for TQM implementation. 2) Improve and perfect the management mechanism. Measures should be taken to improve management mechanisms, optimise management methods, set specific targets for TQM, establish TQM processes, organise personnel to learn the concept of TQM, and guide all staff to participate and gain support while focusing on targeting important risk points and key areas of the hospital in light of the hospital reality. 3) Implement TQM measures. Dedicated staff should be arranged to be responsible for supervision and inspection of TQM implementation and provide timely feedback when problems are identified; an effective incentive mechanism should be established to mobilise staff's initiative to participate; attention should be paid to departments with prominent doctor-patient conflicts and high error rates, where education and training should be strengthened in a targeted manner, improvement initiatives proposed and targeted improvements made; communication and cooperation between departments should be strengthened to form a synergy for progress.

2.4.3 Dimensions of TQM in health care quality management practices

The implementation of TQM in health care quality management is intricate and complex, and the successful implementation of TQM in the healthcare sector requires a good combination of some key factors, without which tangible results can hardly be achieved. This study collects successful practices of TQM in healthcare in recent years to provide a comprehensive picture of TQM in healthcare with the aim of identifying the key success factors (success dimensions) of TQM implementation in healthcare. Table 2.5 below shows that different scholars have conceptualised different practical dimensions of TQM in health care quality management. Nevertheless, leadership, teamwork, continuous improvement, patient satisfaction, and education and training are the most important factors in TQM implementation.

Table 2.5 Key success factors of TQM implementation identified in existing literature

No.	Scholar(s) (year)	Sample	Key success factors of TQM implementation	Results
1	Alzoubi et al. (2019)	Literature review	Education and training, continuous quality improvement, customer/patient focus/satisfaction, top management commitment, and teamwork	/
2	Mei et al. (2017)	District (county) level maternal and child health care hospitals in Chongqing	Quality improvement and patient safety, infection prevention and control, governance, leadership and management, facilities management and safety, staff qualification education, and information management.	The implementation of TQM can help improve the performance of county-level maternal and child health care hospitals.
3	Kumar et al. (2016)	275 hospital workers in Pakistan, including 138 hospital workers in a hospital and 138 workers from the control hospital	TQM intervention plan and training	There were significant differences in the scores on TQM intervention (training) between the intervention group and the control group.
4	Al-Shdaifat (2015)	322 nurses in a Jordan hospital	Continuous improvement, training, education, customer focus, teamwork and top management commitment	TQM can significantly improve health care quality management and enhance hospital performance.
5	Mrayyan and Al-Faouri (2008)	640 registered nurses employed in 24 hospitals in Jordan	Leadership, interpersonal relations/communications, critical care, planning/evaluation, professional development, and teaching/collaboration	There was a significant positive correlation between TQM practices and nurse performance.
6	Alaraki (2014)	400 clinical workers in four hospitals in Tabuk Region, Saudi Arabia	Leadership, information analysis, continuous improvement, supplier management, employee management, process management, customer focus, and training	The implementation of TQM has a significant positive impact on hospital performance.
7	Sweis et al. (2013)	320 employees in a Saudi Arabian hospital	Cooperation and teamwork, continuous improvement, training, customer satisfaction, and top management commitment	TQM implementation has a positive impact on employee empowerment.
8	Irfan et al. (2012)	239 doctors in public hospitals in Pakistan	1. Human resource focus: training, empowerment, employees' involvement, reward and	Selected TQM practices have a significant positive

No.	Scholar(s) (year)	Sample	Key success factors of TQM implementation	Results
			recognition; 2. Management structure: key information to all employees, leadership role and culture 3. Quality tools: Quality goals and planning, statistical process control and measuring key results,	impact on both TQM implementation and hospital operational performance.
9	Talib et al. (2011)	TQM and SCM managers	Top management commitment (leadership), teamwork and employee involvement, process management, customer focus and satisfaction, resource management, organizational behaviour and culture, continuous improvement and innovation, training and education	TQM can significantly enhance the quality of hospital operation and management.
10	Danial (2009)	80 randomly selected critical wards nurses of a hospital in Iran	Management commitment, customer focus, education, continuous improvement, cooperation, full participation, evaluation of decisions	TQM can significantly improve hospital performance and health care quality management.
11	Duggirala et al. (2008a)	Patients in a hospital in India	Infrastructure, personnel quality, process of clinical care, administrative procedures, safety indicators, overall experience of medical care received, and social responsibility	TQM practices are positively correlated with patient satisfaction.
12	Duggirala et al. (2008b)	Healthcare providers in India	Top management commitment and leadership, human resource management in the hospital, process management, hospital facilities and infrastructure, patient focus, employee focus, measurement of hospital performance, hospital information systems, errors, safety and risk management, service culture, continuous improvement, benchmarking, union influence, and governance and social responsibility	TQM practices can mobilise healthcare providers initiative.
13	Mosadeghrad (2015)	90 hospital quality managers	Customer management, process management, leadership, employee management and information management	TQM practices contribute to TQM implementation success.
14	Jones et al. (2013)	377 hospitals in the U.S.	Teamwork, training and education, and continuous improvement	The intervention group scored significantly higher in teamwork, training and education and continuous improvement than the control group.

No.	Scholar(s) (year)	Sample	Key success factors of TQM implementation	Results
15	Ullah et al. (2011)	220 managers of health care facilities	Strategy, structure, system, staff, skill, style and stakeholder factors	Marked improvement was achieved in all TQM areas following a three-month training program.
16	El-Tohamy and Al Raoush (2015)	1,290 employees of public hospitals accredited by Health Care Accreditation Council (HCAC) in Jordan	Leadership commitment to quality, employee involvement, customer focus, continuous improvement, teamwork, education and training	Implementing TQM increases the overall hospital effectiveness in the HCAC accredited governmental hospitals in Jordan.
17	Ramseook-Munhurrun et al. (2011)	200 workers of a public hospital in Mauritius	Teamwork, continuous improvement, management commitment, training, customer focus, employee involvement and organizational culture	The implementation of TQM had a significant impact on management, who considered it to be effective in public hospitals.
18	Talib et al. (2010)	/	Leadership, resource and capability development, process management, teamwork and involvement, and continuous improvement	/
19	Awases et al. (2013)	180 nurses	Knowledge and skills, organizational mission and goals, staffing and work schedules, performance appraisal and utilisation thereof, implications for nursing management, commitment and satisfaction, remuneration, benefits, reward and recognition, workspace and environment, leadership and management style, and staff development	TQM implementation has a positive impact on nurse performance.

2.4.4 Reasons for the failure of TQM in health care quality management practices

Although TQM has many advantages and is widely used in the healthcare sector, there are many failures as the implementation of TQM is a systematic project. The reasons for the failure of TQM implementation are varied (Al-Ali, 2014). Nicolaou and Kentas (2017) synthesized the literature related to the failure of TQM implementation in the healthcare industry and listed the following common reasons.

1. Lack of management commitment. The implementation of TQM must be supported with

a clear management commitment and organizational structure responsible for the leadership, management and implementation of TQM. In the absence of management commitment, staff will be disorganised, and it will be difficult to develop synergy. Management commitment is therefore particularly important, and the management needs to be constantly reminded of the benefits and advantages of implementing TQM (Shea & Gobeli, 1995; Siddiqui et al., 2009).

2. Culture change. The implementation of TQM will inevitably lead to a change in the organizational culture of the hospital, which can cause unease and confusion among staff. During this phase, management must achieve a change in their own culture to a quality-oriented culture (Srdoc et al., 2005).

3. Improper use of quality tools and techniques. This refers to the misuse of quality tools and techniques to deal with the obstacles encountered in the implementation of TQM. To avoid this problem, management is required to have the basic knowledge necessary to implement TQM to use quality tools and techniques appropriately, otherwise employees must receive relevant training (Sitkin et al., 1994; Westcott, 2005).

4. Inadequate length of implementation. The implementation of TQM is a long-term process that cannot be achieved in a short period of time and requires long-term perseverance; stopping halfway will definitely lead to failure. Therefore, attention must be paid to the implementation of TQM in a long term (Jafari & Setak, 2010; Yang, 2003).

5. Lack of resources and information. Resources and information are key factors in the implementation of TQM, and the implementation of TQM needs to be supported by appropriate resources and information. This requires the management to be prepared to gather resources and information before implementing TQM (Yousuf, 2011).

6. Data validity: TQM is a data-based management theory. If data are not collected properly or are not valid, the implementation of TQM will be misdirected. Therefore, it is important that employees involved in TQM implementation have better data training and data analysis skills (Jafari & Setak, 2010).

7. Management resistance to empowering employees. Due to the stressful nature of employees' daily work, management is generally reluctant to release employees from work to participate in TQM training or to join the TQM quality management team, resulting in employees not being able to acquire the relevant skills to implement TQM, which can also lead to TQM implementation failure. Therefore, it is important that management agrees to empower employees as this is critical to the success of TQM implementation (Jafari & Setak, 2010).

8. Resistance from professionals. TQM's emphasis on participation by all staff and departmental collaboration requires hospital professionals to work with and support each other.

But the opposite often happens as some professionals are not willing to work with each other. This is also one of the reasons for the failure of TQM implementation (Jafari & Setak, 2010).

In addition, Rad (2005) studied 90 health care organizations in Isfahan Province, Iran and analysed the reasons for the failure of TQM implementation in healthcare institutions based on a questionnaire survey. The results showed that problems related to human resources, performance appraisal, strategy, structure and process were the main reasons for the failure of TQM implementation.

The above-mentioned research points to the need to strengthen organizational leadership and gain leadership commitment in the implementation of TQM; strengthen feedback and provide technical and tool support in the implementation process; reconstruct the organizational culture and guide the participation of all employees; strengthen integrated management, enhance staff training, and carry out continuous improvement in response to feedback; and make the implementation of TQM a long-term strategy, rather than giving up halfway.

2.4.5 Summary

This section focuses on reviewing existing literature related to TQM in health care quality management practices, including its connotations, implementation steps and methods, dimensions of successful implementation. It shows that TQM has been widely used in healthcare with good results. This thesis uses TQM as the main theory for research based on the following considerations.

1. TQM is a mature theory with a sound theoretical system. The TQM theory has been developed for many years and has formed a relatively sound theoretical system in terms of core connotation, main methods, constituent elements and influence mechanisms, which can provide solid theoretical support for this study.

2. The theory is widely used and has a profound and solid practical foundation. The TQM theory has been successfully applied in various industries. It has not only improved the performance of enterprises in different industries, but also enhanced customer satisfaction, rationalised the management mechanism of organizations, and effectively promoted the formation of core competencies.

3. The TQM theory is in line with the current requirements of China's healthcare policy. As China furthers its new round of health care system reform and the implementation of the Outline of the Program for "Healthy China 2030" gets more in-depth, healthcare institutions are in urgent need of transformation and upgrading to meet the health needs of the people. The

Medical Quality Management Measures of the People's Republic of China explicitly states that "health care quality management is the core of health care management. Healthcare institutions of all levels and types should be held primarily responsible for health care quality management and should strengthen health care quality management comprehensively, continuously improve health care quality and ensure health care safety. Therefore, a scientific and sound management theory is needed as support, and TQM is undoubtedly the best choice.

4. The TQM theory is in line with the patient-centred philosophy. With China's continuous socio-economic development and persisting ageing trend, people's demand for high-quality health care services is increasing, which requires healthcare institutions to constantly improve and strengthen health care quality management to address the "difficulty and high cost of accessing medical treatment". In the face of changes in the internal and external environments, it is urgent for healthcare institutions, especially those at the county level, to focus on their own internal management, absorb and learn from the best management concepts, explore quality management models that are in line with their reality and the needs of the public, adhere to the "patient-centred" philosophy, and continuously improve health care quality.

5. The TQM theory meets the requirements of sustainable hospital development. With the introduction of a series of national health care reform systems, the public interest of public hospitals has been further enhanced. Due to the low level of county-level hospitals and the relative lack of medical technology and professional talents, how to continuously build their core competitiveness in terms of management level and service quality to prevent the loss of patient groups is an issue that should be given high priority. Therefore, if county-level hospitals want to stand out in the competition, they must absorb advanced ideas, continuously strengthen internal management, and constantly explore management models that meet their own development needs to enhance their overall strength.

2.5 Summary

The research on health care quality management at home and abroad is very extensive. From a theoretical perspective, it involves the definition, classification, characteristics and influencing factors of health care quality; from a practical perspective, domestic and foreign research involves the system, measures, performance and effects of health care quality management, which provides important academic references for researchers to formulate research questions, establish research topics and form research ideas. This provides an important academic reference for researchers to formulate research questions, establish research themes and form

research ideas. The introduction of TQM into the health care sector in China was relatively late, and the research and application of relevant theories is still immature. In recent years, the high-speed development of China's economy and society as well as people's increasingly high requirements for health have made it an urgent need for healthcare institutions to change their traditional management mode and achieve high-quality development. By reviewing the existing literature on the TQM theory and health care quality management, this thesis makes a summary from the following four aspects.

First, the research on TQM in healthcare institutions is generally lagging. Health care quality is the lifeline for the development of hospitals. Without quality, hospitals would lose their core competitiveness. However, in reality, health care quality management is still a weak link in healthcare institutions though hospitals in China have tried continuous quality improvement, case typing, tertiary hospital accreditation, ISO 9001 quality certification system, Six Sigma and other management models (Callahan & Gilbert, 2005; Croxall, 2004). Particularly, in recent years, the concept of TQM has been implemented in the health care sector, and healthcare institutions have basically established a customer-centred quality management framework consisting of process management, the use of new technologies and teamwork by adopting and applying the concept of TQM. In this way, they have realized the transformation from a traditional quality management system to a customer-centred quality management system (Klein et al., 1998). Compared with TQM in enterprises, TQM in healthcare is seriously lagging behind. In terms of theory, a systematic and comprehensive understanding of the basic processes, constituent dimensions and evaluation strategies of TQM is still lacking, so is a systematic and holistic understanding of the key elements of TQM and the relationships between them. A review of existing literature shows that health care quality management in healthcare institutions consists of multiple links. However, existing studies have not systematised the individual process elements into a holistic theoretical framework, nor have they explored in depth whether there is covariation between the various links of TQM implementation. The lack of a theoretical framework for TQM applicable to the healthcare sector has led to a lack of comparability and consistency between studies on health care quality management, which has led to the fragmentation of the current research findings and the unsatisfactory translation of theory into practice. In addition, most of the existing studies on health care quality is based on sociology and medicine, and less from a management perspective, which further limits the innovative development of theories.

Second, there are obvious differences in methodology between studies outside China and studies in China. Existing literature shows that most of the TQM-related studies in China have

been conducted from a macro perspective, focusing more on the development of the national healthcare system, while there is a lack of research results from the micro perspective or within hospitals. In particular, there is a lack of research on the use of TQM for health care quality management in county-level hospitals. International research is conducted from more micro perspectives, focusing on the perception of TQM within the hospital, emphasising the perceptions of hospital staff and highlighting staff satisfaction. The differences in research perspectives have also led to differences in research methods and contents. Domestic research on health care quality management mostly stays at the macro level, mostly using conceptual thinking and theoretical analysis, and the scope of the research is broad and extensive, with little relevance and practical applicability, lacking large-scale surveys and empirical research. In contrast, international research on TQM and health care quality management tends to be empirical, with research findings based on surveys and the collection of relevant data, which are more convincing and can be more effectively applied in practice. The practice of using TQM to improve health care quality management in China and abroad has provided us with a solid foundation, and these research findings have guided the smooth progress of this study.

Third, research on health care quality assessment is mainly results-oriented, and there is a lack of process-oriented research. In the past, health care quality management focused on "quality results" rather than "quality processes", and its evaluation was mostly focused on the quality of results. In health care practices, most of the evaluations were conducted on quality, and health care quality management was judged by quality evaluation results. As the process indicators were neglected, the evaluation results were somewhat one-sided, which made it difficult for healthcare institutions to identify their own problems in a comprehensive, accurate and objective manner, and was not conducive to the construction of a scientific and reasonable health care quality management evaluation system. A review of existing literature shows that health care quality management consists of several key processes, but there is not yet a systematic evaluation framework. This study adopts the TQM theory and aims to make a new exploration to address this gap.

Fourth, the TQM theory is somewhat universal, but specific practices can show certain differences depending on such factors as the country, region, system, culture and industry. Existing literature shows that the TQM theory is widely applicable to the manufacturing industry. For the health care industry, there is a big gap between China's health care policies and systems and those of foreign countries. This is particularly true for county-level hospitals where there are big differences in the allocation of human resources and health care resources.

In the process of applying TQM, it is necessary to adapt to local conditions, seek truth from facts, and conduct research with consideration of the current specific conditions of China's health care industry, which will lay the foundation for reform and innovation in health care quality management in China.

Chapter 3: Interview Design and Implementation

This chapter elaborates on the research methods, sample and participants according to the research purpose and framework. An interview outline was designed according to the status of TQM implementation for health care quality management in the case hospital. The interview outline was optimised based on feedback from the pre-interviews to ensure that it was relevant and scientific. In this way, the data collected could fully reflect the basic situation of TQM implementation in the case hospital, laying a foundation for obtaining comprehensive, objective, and relevant research results.

3.1 Sampling procedure

The case hospital was a county-level hospital subject to the administration of the Government of Wenzhou City, Zhejiang Province. Established in 1987, the case hospital was a Grade B tertiary hospital covering an area of around 100,000 square meters, with a floor area of 128,000 square meters and 1,000 approved beds. Since 2012, it had been awarded the title of one of China's Top 100 Most Competitive County-Level hospitals for nine consecutive years. In 2014, it was accredited by Joint Commission International (JCI) and was assessed at Level 4A for the hospital information interoperability standardization maturity assessment and Level 5 of electronic medical records. Its pioneering model for training general practitioners for township health centres with personnel relationships at county-level hospitals had been popularised nationwide.

By the end of December 2021, the case hospital had 1,437 permanent employees, of which 1,122 were health specialists, accounting for 86.8% of the total, including 210 with senior titles. There are 40 clinical departments, 38 nursing units and 12 auxiliary departments. The hospital boasted obvious advantages in several specialities, with the Intensive Care Unit, the Department of Paediatrics and the Department of Nephrology leading Zhejiang Province. It had 17 municipal key specialties and three county-level key specialties. The hospital had built five major treatment centres, including Chest Pain Centre, Stroke Centre, Trauma Centre, Critical Child and Neonatal Treatment Centre and Critical Maternity Treatment Centre. In 2021, the number of outpatient and emergency visits was 1.12 million, and the number of discharged patients was about 39,900, generating a business income of 812 million yuan. Besides, the

hospital had been advancing in terms of scientific research. In 2020 and 2021, the hospital received two national natural research funds, six provincial research funds and more than 120 municipal research funds and published more than 30 SCI papers. Meanwhile, the hospital had large medical equipment such as 1.5T MRI, 64-row CT, and DSA as well as composite operating theatres, realizing the organic combination of surgery, interventional surgery and imaging examination. At present, the hospital is upgrading its healthcare philosophy to be in alignment with international medical frontiers and is committed to developing into a regional medical centre in south Zhejiang and northeast Fujian to provide better medical and health services for local residents and those in surrounding areas.

The case hospital began to introduce the TQM theory to carry out health care quality management in 2012. The hospital passed the Grade B tertiary hospital accreditation in 2012 and entered the ranks of general tertiary hospitals; in 2014, the hospital passed the JCI international accreditation, marking that its health care quality and safety management was internationally recognized; in 2021, the hospital passed the fourth cycle of Zhejiang Province's Grade B tertiary hospital re-evaluation, which symbolised that its overall quality and safety management ascended to a new level. By the time of this study, under the guidance of TQM theory, all health safety indicators and health care service quality levels of the hospital had reached a high level, and a sophisticated health care quality management model had been basically established, which can ensure the provision of safe medical and health services for patients.

From the perspective of the current practice of TQM theory in the healthcare sector, Grade A tertiary hospitals with higher technical and management levels in developed areas or other large general hospitals are more focused on studying the problems of the TQM model, while few county-level hospitals have introduced TQM theory into their management practice, and very few studies have explored the application of TQM theory in county-level hospitals. There are even fewer studies exploring the application of TQM theory in county hospitals. The case hospital, as a medium-sized hospital, is also one of the first small hospitals to introduce TQM for health care quality management. Exploring the application of TQM in the case hospital can provide a reference for more small and medium-sized hospitals to introduce TQM theory for health care quality management.

3.2 Research methods

Existing empirical studies on TQM implementation were mostly carried out using quantitative research methods to identify the problems in TQM implementation and make relevant recommendations through the collection and analysis of large sample data. Although quantitative research allows for a grasp of the status and characteristics of the sample from the general patterns, it is affected by various factors, such as the rationality of the questionnaire design, the researcher's role and the limitations in the scope of knowledge. It is often difficult to achieve the "objectivity", "universality" and "representativeness" that quantitative research is obsessed with, and too much emphasis on "universality" results in neglection of the particularity of individuals. This study takes an alternative approach by adopting a qualitative research approach of phenomenological research. Phenomenological research is an inductive and descriptive research method developed from the philosophy of phenomenology, which aims to describe respondents' empirical perceptions and real-life experiences (Christensen et al., 2014), where phenomena are the direct or indirect experiences of respondents, presenting their actual experiences and feelings. The aim is to portray the real world and the way they interpret their own lives (Adu, 2019). This research method enables problems to be identified from respondents' experiences, responses and answers.

Guided by the phenomenological approach, the researcher conducted in-depth interviews with the 32 interviewees. In-depth interviews may take a variety of forms. But due to the limitations of the research framework, a one-off in-depth interview may take one to two hours and is appropriately designed with 12-15 key questions (Lapan et al., 2012). As in-depth interviews fall within the realm of data generation, they allow interviewees to explain and convey their experiences, feelings and interpretations (Ritchie et al., 2013). The aim of adopting in-depth interviews is also to gain direct unfiltered access to the real feelings, views, opinions and experiences of the interviewees. Ritchie et al. (2013) argue that in-depth interviews can lead to good solutions by obtaining interviewees' views on very complex systems, processes or empirical problems due to the depth of the focused questions. This research method has been shown to work well in a variety of research contexts, allowing for an understanding of the motivations, consistency and resulting impact and outcomes of the participants. In-depth interviews with relevant personnel in the case hospital were conducted to focus on the perceptions of hospital management, healthcare workers and patients on hospital health care quality management, and to clarify the quality management problems in the case hospital by coding, categorising, explaining the practical significance of the phenomenon and distilling

themes or elements.

3.2.1 Interview outline design

An interview is usually composed of three aspects: main questions, follow-up questions and probing questions (Zhu, 2018). The main questions are the core part of the interview and need to be designed in advance; the follow-up questions explore the views, opinions, concepts and themes put forward by the interviewees themselves and need to be asked for elaboration through tracking; the probing questions are a way for the interviewer to grasp the process of the interview and manage the interview activities. They are mainly aimed at ensuring that the interview is always on topic and suggesting to the interviewees the level of depth needed. Therefore, when preparing the interview outline, the main questions should be listed as much as possible, so that they cover as many levels and dimensions of the research questions as possible. The aim of this study is to examine the problems in health care quality management in the case hospital from the TQM perspective. Therefore, it was necessary to design the interview outline around the four research questions of the study. The outline is composed of three parts: Part 1 focuses on collecting the basic information of the interviewees and includes the following three questions:

1. What are your age, gender and education level?

2. Which department do you work in and what position do you hold at the hospital?

3. How long have you been working at this hospital?

Part 2 focuses on capturing the basic information on health care quality management in the case hospital and contains six questions, which are.

4. Do the hospital leaders support health care quality management activities and provide appropriate assistance and guarantee?

5. Has the hospital established an independent quality management department to implement, monitor and manage quality activities? If yes, is the staffing of the quality management department reasonable? Does the quality management department play its role? If so, in what ways? If not or not well, what do you think are the reasons?

6. Is the hospital able to identify problems in the health care quality management process in a timely manner and make timely improvements?

7. How do you describe the doctor-patient relationships in the hospital? Does the hospital listen to patients' feedback and improve its quality management in a timely manner?

8. Does the hospital provide quality trainings for staff? If yes, what do you think of the

frequency, depth and effectiveness of such trainings?

9. Is there a coordination and teamwork mechanism between departments and staff in the hospital? Is teamwork smooth? If not, what do you think are the reasons?

Part 3 focuses on capturing participants' opinions on and suggestions for health care quality management and contains three questions, namely:

10. What do you think are the factors or practices limiting or hindering health care quality management in the hospital?

11. Do you think the hospital has taken appropriate measures to improve the health care quality management process? If yes, are the measures effective? If not effective, what are the reasons?

12. What do you think should be done to improve or enhance the health care quality management in the hospital?

In addition, participants were free to express their views based on their knowledge of the health care quality management in the case hospital, and what they had said would be kept strictly confidential. The interview was mainly semi-structured, and the duration of each interview was set at around 30 minutes while the interviewees' responses were recorded by a recording pen.

It is worth noting that in-depth interviews emphasize a dialogue in a natural context and are mainly based on the narration of the interviewee. The interviewer should allow the interviewee to talk as freely as possible centring on the questions. The interviewer has the flexibility to adapt the interview process and the interview procedure to the different interviewees and the specific circumstances of the interview (Chen, 2008). Therefore, the main questions listed above were only a framework, and not all or only these questions were covered in the interview with each interviewee but were extended to the extent appropriate to the interview situation. Therefore, the main purpose of the above interview outline was to serve as a framework during the interview process. More details and follow-up questions were developed as the interview progressed to achieve the depth of research and gather as many details as possible (Zhu, 2018).

3.2.2 Participants

This study used "non-probability sampling", or "purposive sampling", referring to the selection of subjects that provide the maximum amount of information to the research questions according to the purpose of the study. The main objective was to achieve the depth of research that would explain and complement the results of the quantitative research to the greatest extent

possible. The inclusion criteria for the interviewees of this study were as follows.

The purpose of this study is to find out the main factors hindering TQM implementation in the case hospital. According to the principle of intensity sampling, those who can provide sufficient information should be sought as far as possible. If the interviewees are people with experience, they will naturally and skilfully answer the interview questions, and because they are familiar with the field, they are likely to offer more constructive suggestions so that the interviewer can collect in-depth information which will increase the reliability of the interview results. The interviewees therefore need to have some knowledge of the hospital's health care quality management activities and should have worked in the hospital for more than five years; the patients interviewed should have perceptions of the hospital's health care quality management activities, hence the selection of patients who had been in the inpatient department for more than two months.

To ensure that the interviewees were representative of the different types of healthcare practitioners in the case hospital, this study strictly followed the principle of maximum variation sampling. Specifically, the findings generated by the sample drawn will cover the maximum variety of situations in the research phenomenon and cover as many different types of hospital workers as possible. Therefore, this study considered the selection of interviewees based on the division of labour, with the sample mainly consisting of administrative personnel, doctors, nurses, medical laboratory technicians, logistics workers and patients.

All interviewees should have good communication skills, be able to think and communicate normally and think independently, be free from hearing or speech impairment, and have no cases of informed consent followed by refusal.

Based on the above inclusion criteria, this study selected 32 participants/interviewees from the case hospital consisting of two vice-presidents, five persons from the quality control department, four doctors, four medical laboratory technicians, four nurses, four administrative workers, four logistics workers and five patients. The basic profile of the interviewees is shown in Table 3.1 below.

Table 3.1 Basic profile of the interviewees

No.	Code	Gender	Age	Department	Position	Length of service
1	ZZS	Male	43	President Office	Vice president	15
2	ZXY	Female	51	President Office	Vice president	31
3	WGB	Male	48	Quality Control Department	Director	10
4	LWS	Male	36	Quality Control Department	Deputy chief	14
5	HYC	Male	31	Medical Records Room	Deputy director	9
6	LC	Male	40	Medical Affairs Department	Section chief	17
7	FXK	Male	47	Medical Affairs Department	Deputy section chief	5

No.	Code	Gender	Age	Department	Position	Length of service
8	CTJ	Male	44	Party and Administration Office	Director	26
9	WAX	Female	40	Personnel Department	Section chief	15
10	ZGZ	Female	51	Nursing Department	Director	31
11	LXL	Female	45	Medical Insurance Department	Director	26
12	CXX	Male	43	Emergency Department	Director	19
13	WXH	Female	38	Endocrinology Department	Doctor	14
14	BML	Female	38	Obstetrics and Gynaecology Department	Doctor	14
15	YYL	Male	45	Neonatology Department	Doctor	22
16	CLL	Female	37	Traumatic Orthopaedic Department	Head nurse	11
17	ZCR	Female	36	Endocrinology Department	Nurse	11
18	YYH	Female	37	Emergency Department	Nurse	13
19	CZJ	Female	39	Cardiology Department	Nurse	15
20	YZH	Male	41	Ultrasound Department	Director	15
21	HYY	Female	36	Pharmacy	Deputy director	10
22	LQJ	Female	39	Blood Transfusion Department	Director	18
23	CWZ	Male	35	Clinical Lab	Quality control team leader	11
24	WSB	Male	35	General Affairs Department	Deputy section chief	9
25	LXL	Female	54	Infrastructure Department	Deputy section chief	31
26	XZC	Male	39	Information Department	Deputy section chief	17
27	SXF	Female	54	Finance Department	Section chief	20
28	ZAP	Female	65	Retired teacher	Patient 1	Hospitalised for 71 days
29	CXF	Female	40	Functionary	Patient 2	Hospitalised for 62 days
30	FL	Female	46	Director of Township Women's Federation	Patient 3	Hospitalised for 65 days
31	WSS	Female	33	Businessman	Patient 4	Hospitalised for 64 days
32	CLJ	Male	50	Enterprise owner	Patient 5	Hospitalised for 67 days

3.3 Ethical considerations

In-depth interviews can involve a range of ethical issues. It is important to examine ethical considerations as each interview will have an impact on the interviewee; the interviewee will respond to the interviewer; and the interviewer will also learn about some of the interviewee's privacy. If ethical issues are not handled properly and cause concern to the interviewee, the interview outcome may be affected. Kvale (2008) points out that the purpose of conducting interviews is to gain knowledge, and the purpose of gaining knowledge is to study issues such

as human behaviour and social phenomena to obtain relevant results. Therefore, it is important to pay attention to the ethical issues that may arise. Kvale (2008) raises seven ethical considerations about interviews, which were fully considered by this thesis one by one before the interview (see Table 3.2) to reassure the participants and thus obtain the most authentic data.

Table 3.2 Solutions to ethical considerations

Ethical consideration	Solution
What positive effects does the study have?	Inform each participant that the aim of the study is to identify problems in the health care quality management in county-level hospitals in China and put forward appropriate improvement strategies to promote high-quality development of county-level hospitals and to better serve the health needs of the public.
What is the role of interviewees' participation in the study?	Inform the interviewees that all the interviewees are from the case hospital and have the best knowledge of the processes and ways of health care quality management in the case hospital as well as where the obstacles are. Interviewees' positive suggestions and ideas will help identify the bottlenecks and contribute to improved health care quality management in the case hospital.
How is participants' privacy protected?	Inform each participant that the researcher will keep their personal information strictly confidential and will not disclose any information about the participants to any third party and will be voluntarily held legally liable in case of disclosure.
How important it is for participants to remain anonymous?	Inform the participants that they would be asked about their respective job positions, experiences, and perceptions of the hospital's health care quality management. Considering that some negative comments about the hospital might affect the participant's career development and relationships at the hospital, the researcher's top priority is to ensure the anonymity of the participants so as to eliminate participants' fear for disclosure of information.
Who will have access to the interviews?	Inform participants that only the interviewer and the interview assistant would have access to the content of the interviews, which would be published later in the form of a thesis without the names of the interviewees.
What impact will the study have on the interviewees who participated in the interviews?	Inform the participants that the study would not have any impact on them, as all the content of the interviews is anonymous and completely confidential.
How will the role of the researcher affect the interview?	Inform the participants that after answering the specified questions, they are also free to express their views, feelings, emotions and opinions about health care quality management in the case hospital and that the researcher would not interfere or influence what they have to say.

Source: Kvale (2008)

3.4 Pilot interviews

Prior to the start of the formal interviews, pre-interviews were conducted with three participants to ensure that the interview questions were well designed. The objectives of the pre-interviews were to:

1) time the duration of each interview to judge whether the interview questions were too many or too few.

2) record feedback from interviewees as to whether there were instances where they did not understand certain interview questions to optimise the interview outline.

3) ask interviewees for their views on the overall interview design and collect their comments or suggestions to optimise the interview outline.

The three pre-interviews revealed the following problems:

1) The duration of the pre-interviews was shorter than expected, with the longest lasting 28 minutes and 31 seconds and the shortest 10 minutes and 11 seconds. Participants were knowledgeable about the relevant issues but were reluctant to give in-depth and detailed answers. The three interviewees almost always answered whatever was asked and nothing more, and their answers were general and vague.

2) As the questions were pre-designed, the interviews with the interviewees turned into a question-and-answer format, and the interviewees' ability to think divergently and analyse based on the relevant questions was insufficient. Particularly, in the second part of the questions, the interviewees were almost describing the status without elaborating on the deeper reasons behind the status.

3) The interviewer's interview format was mechanical. The interview atmosphere was serious. The interviewer almost followed the outline questions without asking follow-up questions based on some key themes and concepts mentioned by the interviewees, nor did the interviewer develop and extend the relevant questions based on the interviewees' answers. The interviewee felt that she was also in a kind of interview scenario and was somehow nervous, making it difficult to understand the deeper issues of health care quality management in the case hospital.

4) The interviewees had the tendency to stray from the topic and speak about things that are not relevant to the interview questions during the interviews. And the interview did not appropriately intervene or control the situation.

5) Interviewees felt that the interview outline was suitable for interviews with hospital staff and that patients had some but limited perceptions of quality management in hospitals. Therefore, some questions specifically related to patients about quality management in case hospitals should be included.

To solve the above problems, firstly, before the implementation of the formal interview, an expert was invited to train the interviewer on how to ask follow-up questions on the points, concepts and themes raised by the interviewees as well as on how to maintain a pleasant

atmosphere with the interviewees during the interview and open up the interviewees' mind so as to understand the interviewees' deep-seated problems with the health care quality management in the case hospital.

Secondly, experts were invited to train the interviewees. The training included an introduction to the purpose of the training, its significance and the dos and don'ts, and an explanation of the relevant ethical issues to ensure that the interview could be conducted in a standardised process.

Thirdly, the interview outline was revised in a targeted manner with due consideration of the comments collected from the pre-interviews. The revised interview outline still consisted of three parts as follows:

Part 1 focused on understanding the basic information of the interviewees, such as gender, age, job title and length of service.

Part 2 was mainly about the questions designed in relation to the six dimensions of health care quality management identified in this study. It was expected that these questions would be used to explore the status of health care quality management in the case hospital and identify the existing problems.

Part 3 focused on collecting the interviewees' views on health care quality management in the case hospital and understanding from the interviewees' perspective what factors or practices were restraining the health care quality management in the case hospital and what improvement measures should be taken. In particular, the interviewees' views on improving health care quality management were also important references for this study to make relevant evidence-based recommendations (see Annex A for details).

3.5 Summary

This chapter elaborated on the research design of this study. In-depth interview method was used as the main research method. A total of 32 people, including 27 employees and five patients from the case hospital, were selected as participants. The 27 employees came from different departments of the hospital, and the five patients had stayed in the hospital for over two months. They all had certain perceptions and knowledge of the hospital's health care quality management, which ensured the collection of sufficient primary information from the interviews. The basis for forming the interview outline was introduced. Specifically, an interview outline is composed of main questions, follow-up questions and probing questions. Before the formal interviews were conducted, pre-interviews were carried out to ensure that the

outline was relevant and scientific. Based on feedback from the pre-interviews, the outline was optimised and finalised. Composition of participants and ethical considerations were introduced to lay a solid foundation for the implementation of the interviews and to ensure that the interviews could achieve good results.

[This page is deliberately left blank.]

Chapter 4: Results and Discussion

Based on the research ideas described above, relevant data were collected through interviewees. And MAXQDA 2020 software was used to analyse the collected data. The results showed that the case hospital mainly carried out its health care quality management activities focused on the dimensions of leadership commitment, continuous quality improvement, patient-centredness, participation by all staff and quality training, which are highly identical to the TQM dimensions identified by most existing studies in Chapter 2. This shows that the path of TQM implementation in the case hospital was scientific and in line with the requirements of the TQM theory. This chapter adopts a combination of narrative and commentary from these core dimensions to describe the TQM implementation in the case hospital (including the implementation status, the effects achieved and the existing problems), as well as the implications of the TQM implementation for health care quality management in the case hospital for county-level hospitals.

4.1 Interview implementation

The formal interviews with 27 employees and five patients were carried out from May 14 to May 16, 2022. The interviews are shown in Table 4.1.

Table 4.1 Interview records

No.	Code	Gender	Age	Department	Job title	Length of service	Interview duration	Interview date
1	ZZS	Male	43	President Office	Vice president	15	34m 11s	May 15, 2022
2	ZXY	Female	51	President Office	Vice president	31	30m 19s	May 14, 2022.
3	WGB	Male	48	Quality Control Department	Director	10	31m 02s	May 16, 2022
4	LWS	Male	36	Quality Control Department	Deputy chief	14	31m 31s	May 15, 2022
5	HYC	Male	31	Medical Records Room	Deputy director	9	32m 10s	May 15, 2022
6	LC	Male	40	Medical Affairs Department	Section chief	17	37m 06s	May 15, 2022
7	FXK	Male	47	Medical Affairs Department	Deputy section chief	5	34m 07s	May 15, 2022
8	CTJ	Male	44	Party and Administration Office	Director	26	32m 33s	May 15, 2022
9	WAX	Female	40	Personnel Department	Section chief	15	30m 58s	May 16, 2022
10	ZGZ	Female	51	Nursing Department	Director	31	36m 45s	May 15, 2022
11	LXL	Female	45	Medical Insurance Department	Director	26	22m 46s	May 15, 2022
12	CXX	Male	43	Emergency Department	Director	19	25m 21s	May 16, 2022
13	WXH	Female	38	Endocrinology Department	Doctor	14	24m 20s	May 15, 2022
14	BML	Female	38	Obstetrics and Gynaecology Department	Doctor	14	27m 13s	May 15, 2022
15	YYL	Male	45	Neonatology Department	Doctor	22	33m 52s	May 15, 2022
16	CLL	Female	37	Traumatic Orthopaedic Department	Head nurse	11	32m 56s	May 14, 2022
17	ZCR	Female	36	Endocrinology Department	Nurse	11	21m 47s	May 14, 2022
18	YYH	Female	37	Emergency Department	Nurse	13	29m 23s	May 14, 2022
19	CZJ	Female	39	Cardiology Department	Nurse	15	23m 58s	May 14, 2022
20	YZH	Male	41	Ultrasound Department	Director	15	37m 22s	May 15, 2022
21	HYY	Female	36	Pharmacy	Deputy director	10	26m 39s	May 15, 2022
22	LQJ	Female	39	Blood Transfusion Department	Director	18	30m 34s	May 15, 2022

No.	Code	Gender	Age	Department	Job title	Length of service	Interview duration	Interview date
23	CWZ	Male	35	Clinical Lab	Quality control team leader	11	27m 56s	May 15, 2022
24	WSB	Male	35	General Affairs Department	Deputy section chief	9	36m 15s	May 14, 2022
25	LXL	Female	54	Infrastructure Department	Deputy section chief	31	24m 29s	May 14, 2022
26	XZC	Male	39	Information Department	Deputy section chief	17	22m 08s	May 15, 2022
27	SXF	Female	54	Finance Department	Section chief	20	34m 36s	May 14, 2022
28	ZAP	Female	65	Retired teacher	Patient 1	Hospitalised for 71 days	11m 03s	May 15, 2022
29	CXF	Female	40	Functionary	Patient 2	Hospitalised for 62 days	24m 41s	May 16, 2022
30	FL	Female	46	Director of Township Women's Federation	Patient 3	Hospitalised for 65 days	9m 40s	May 16, 2022
31	WSS	Female	33	Businessman	Patient 4	Hospitalised for 64 days	12m 34s	May 16, 2022
32	CLJ	Male	50	Enterprise owner	Patient 5	Hospitalised for 67 days	23m 57s	May 16, 2022

The interviewees were all employees and patients of the case hospital. The 27 employees were from different departments, had different work assignments, and were representative of hospital departments. The interviews were all conducted in a fixed meeting room of the case hospital. Before each interview started, each interviewee was informed of the purpose of the interview, and the interview was recorded by means of a recording pen with the consent of each interviewee. The interviews were conducted in a semi-structured manner, with all questions prepared in advance. However, not all or only these questions were covered in the interview with each participant. Instead, each interview was extended moderately according to the actual responses of each participant. After each interviewee had answered all the questions, they were asked to freely express their views on health care quality management in the case hospital, which were also recorded and retained to obtain the most honest personal opinions of the interviewees without any bias. The interview purpose was communicated before each interview began, and the ethical concerns of the interviewees were addressed. Each interviewee was asked to give a basic introduction and provide relevant information about themselves and their roles in the hospital. Interviewees were also reminded that they could withdraw their answers at any time during the interview and were informed that they could always ask the interviewer for

clarification if they were unsure about any question asked. The interviewer consciously maintained a cordial and friendly attitude throughout the interview, with moderate eye contact with each interviewee, a moderate pace of asking questions and appropriate use of body language to ease the atmosphere to try to create an open and relaxed interview atmosphere (Froschauer & Lueger, 2020). Besides, the interviewer was also asked to remain objective as well as open-minded and to avoid interfering with the interviewee's answers with his or her own subjective opinions. The interview's role was a good listener and an "information digger".

In all the interviews, the researcher followed the interview rules. In particular, the researcher tried to avoid the problems that occurred during the pre-interviews by maintaining a friendly communication atmosphere with the interviewees, paying attention to the way in which questions were asked, learning to listen and ask follow-up questions about important concepts and ideas, and keeping a record of the key points and insights of each interview.

4.2 Interview transcription

A total of 27 employees from various departments of the case hospital and five patients were interviewed and 32 interview recordings were collected. Transcription of each interview recording was done immediately after the conclusion of each interview, which ensured complete transcription as the interviewer's memory was still fresh and could make up for the loss of information caused by poor quality of recording (Zhang, 2014). During the transcription process, the researcher only transcribed the interviewees' language and did not transcribe the non-verbal content, such as sighs, pauses, laughter and stress.

After transcription, the collected data were organized and analysed using MAXQDA software, a software primarily used for qualitative data analysis, developed in 1989 by a German software development company. MAXQDA has become a widely used analytical tool for conducting qualitative analysis in academia. In this study, MAXQDA 2020 was used to code the original interview data with details of the interviewees' names, ages and positions, as well as the time and place of each interview. MAXQDA 2020 was chosen for the qualitative data analysis because of its intuitive and uncluttered interface, and more importantly its focus on coding and its ability to reflect the essence of the data.

During the data analysis process, memos were also prepared to record important ideas and key thoughts as well as important concepts related to the research topic. Ideas were recorded regarding how to focus on these aspects for further analysis and what were the insights for this study to lay the foundation for the presentation of subsequent research results.

4.3 Data analysis

4.3.1 Data analysis process

The data analysis was conducted in line with the following steps.

1. Generating concepts. The information from the transcribed interviews was read repeatedly, and relevant concepts were iteratively generalised from the primary sources. This stage required the researcher to be sensitive to relevant theories including those from previous studies as well as their own to capture information for constructing theories and concepts.

2. Comparing data with concepts. The interview data were constantly compared with the concepts, coded and grouped under as many conceptual categories as possible. Then the coded data were compared under different conceptual categories to ensure that each conceptual category found its own exact attributes.

3. Establishing associations between concepts. The generated conceptual categories and attributes were compared, and the comparison was made to analyse and discover the correlations between them.

4. Theoretical sampling. During the analysis of the interview data, it was important to focus on the theories generated from some of the data as the sampling criteria for the data in the next step, and these theories could guide the coding of the remaining data.

5. Forming preliminary theories. After all the data were coded, preliminary theories were formed.

6. Checking theories. This step was about checking the initially formed theories and involved re-examining all the interview data and repeatedly comparing them to the formed theories one by one to check for gaps and whether saturation had been reached. Theoretical saturation occurs when the researcher finds that the data in the study have been repeated and no new information has emerged, indicating that there is no need to collect additional data (Sun, 2011). If saturation has not yet been achieved, then additional data need to be collected until saturation is reached.

7. Refining the research theories. Refined research theories were developed based on the examination of the theories. The specific process is shown in Figure 4.1.

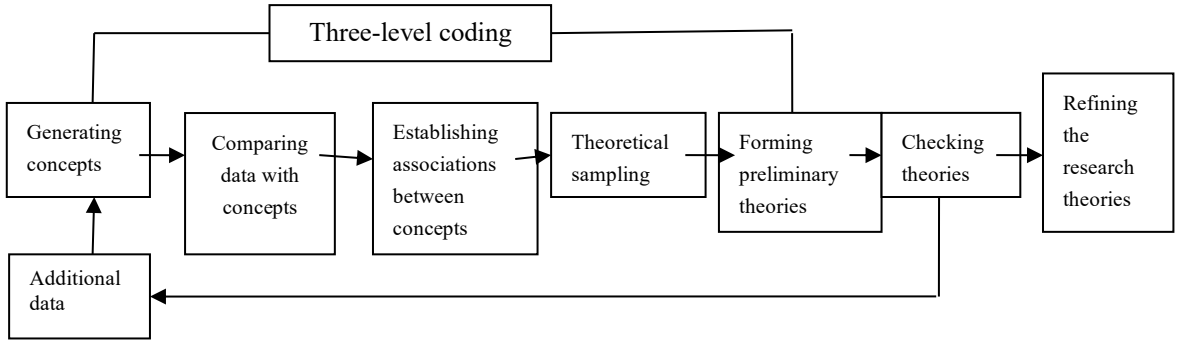


Figure 4.1 Data coding process

It can be seen from Figure 4.1 that the core of the first five steps was to conduct three-level coding, which refers to the process of continuous analytical generalisation and inductive identification of the statements and paragraphs in the qualitative interview, i.e. the process of conceptualising and abstracting the information (Sun, 2011). The coding process includes open coding (Level 1 coding), axial coding (Level 2 coding) and selective coding (Level 3 coding).

Open coding is the process of breaking down the data to be analysed into segments and reassembling them in a new way, naming the conceptual categories and identifying their attributes and dimensions. In short, based on repeated reading of the raw data, the meaningful words and phrases were analysed in detail and marked with a specific code. After most of the interview data had been coded, the codes were categorised homogeneously by topic, and a category was created for each type of topic. New codes and categories were added based on subsequent interview data until all interview data had been analysed. Open coding requires the researcher to keep an open mind, to code all the data to be analysed in its original state, and to try to "localise" the codes in the language of the interviewees in order to match the original meaning expressed by the interviewees (Chen, 2000). In the open coding process, the researcher is required to code each concept in as many details as possible. The more detailed, the better, until data saturation is reached (Chen, 2000). In practice, however, it is often difficult to clarify the relationships between codes due to the large number and complex relationships between them (Sun, 2011).

Axial coding refers to the process of iterative comparative analysis of conceptual categories formed based on open coding to find their interconnections. Such relationships include causality, inclusion and entailment, temporal, semantic, contextual, reciprocity and difference. In this process, it is necessary to search for related associative categories around a particular category, which is called the "axis". In short, it is the process of analysing and coding each textual source, examining the content closely related to the subject matter, identifying the interconnections, commonalities and differences between interview segments, and reflecting on the underlying

meaning to better achieve the research purpose.

Selective coding is about identifying a core category which is related to all other categories in some way based on systematic analysis. And based on this core category, all categories can be linked together into a whole.

In summary, the core idea of the three-level coding is to constantly carry out comparative analysis to find associations among different categories of data. The aim of comparison is to find differences in the same category and similarities in the different categories. In particular, in open coding, the data need to be broken down into segments and disorganised, and the more broken down and disorganised, the better. In this way the coding can be more detailed; in axial coding, repeated comparisons need to be made to find the links between different categories to ensure that the core codes can be found. In selective coding, the core category is used to link all categories into an organic unity.

In this process, it is important to note that data collection and data analysis are not two separate processes but are interlinked. The collection of data lays the foundation for the coding of data. But once the categories have been identified, it is necessary to go back to the data to check whether the categories and coding are reasonable. This is a cyclical process that continues until the theory is refined.

4.3.2 Coding process

MAXQDA software was used to analyse the data collected from 32 interviews with participants from such departments as the finance department, quality control department, infrastructure department and personnel department of the case hospital. A total of 24 concepts were generated in open coding; nine categories were identified in axial coding; and five core categories were obtained in selective coding.

1. Open coding

Open coding is the gradual conceptualisation and categorisation of qualitative information, resulting in more concepts and categories through repeated comparisons. The interview scripts were conceptualised sentence by sentence without subjective bias or preconceptions, and coded as free nodes, retaining as much of the original meaning as possible. At the end of this process, 24 initial categories were obtained (see Table 4.2).

Table 4.2 Open coding results

Examples of interview scripts	Initial concept
"...at hospital level is the Hospital Quality and Safety Management Committee and various branch committees..." (Interviewee BML, May 15, 2022)	Hospital Quality and Safety Management Committee
"... At the hospital level, there is a quality management department, which is the Hospital Quality and Safety Management Committee and various branch committees. Besides, there is also a functional department. At the departmental level, there are quality and safety management teams. So quality management is implemented and health care activities monitored and managed at these two levels ." (Interviewee BML, May 15, 2022)	Branch Quality and Safety Management Committees
"The staffing should be considered reasonable. The committee is formed by all members of the hospital leadership team, including leaders of the quality control department, medical affairs department, nursing department, infection department, equipment department, information department and other relevant functional departments as well as heads of the first-level clinical departments. The usual responsible department is the quality control department. The branch committees consist of the executive vice president, heads of relevant functional departments such as the medical affairs department, nursing department, infection department and quality control department as well as relevant experts of first-level clinical departments. The head of the Quality and Safety Management Team of our department is our department head. Different departments have different teams." (Interviewee SXF, May 14, 2022)	Reasonable staffing
"Our hospital has two levels of management: the hospital party secretary, executive vice presidents, section chiefs of functional departments and department directors are all members of the hospital-level Hospital Quality and Safety Management Committee. Respective executive vice presidents are also the heads of the branch committees. Department directors are also the heads of the departmental quality and safety management teams. They all play an important co-ordinating and directing role." (Interviewee SXF, May 14, 2022)	Quality management at the hospital and department levels
The leadership plays a major role in the health care quality management process. Take our emergency department for example. We are creating five major centres. In this process, particularly for the chest pain and stroke centres, our president and party secretary are the directors, and he is involved in all our meetings. Given his attention, we have made significant progress in the establishment of the five centres." (Interviewee CXX, May 16, 2022)	Participation in meetings
"…Our management will supervise our functional departments, and our functional departments will be hierarchically managed and supervise. …" (Interviewee ZGZ, May 15, 2022)	Supervision and inspections
Secondly, we have operational guarantee. For example, we run the pathological examination…" (Interviewee HYY, May 15, 2022)	Operation guarantee
"…If it is good, we give certain guarantees; and if the medical records are not submitted in time, we have punitive measures. So, we have not only guarantees but also punitive measures." (Interviewee LWS, May 15, 2022)	Punitive measures
"To better support health care quality management in our hospital, we have introduced a series of incentive measures." (Interviewee LWS, May 15, 2022)	Incentive measures
"To better support health care quality management in our hospital, ... In terms of funding, we have included quality management as a priority in our budget at the beginning of the year. Specifically, we have a monthly budget for it." (Interviewee ZXY, May 14, 2022)	Fund guarantee
"Our hospital leadership attaches great importance to and supports the management of health care activities. In 2014, our hospital participated in the	Institutional innovation

Examples of interview scripts	Initial concept
JCI accreditation. At that time, our hospital leadership introduced various advanced and effective health care management methods, which have been used until now. At that time, we were the first general hospital in Zhejiang Province and the second in China to pass the latest edition of JCI Accreditation Standards, and the first county-level hospital in China to pass the 5th edition of JCI Accreditation Standards. At that time, we also had a lot of advanced health care management measures that are still in use today. Besides, the leadership also plays an important role in health care management." (Interviewee BML, May 15, 2022)	
"The hospital can understand the problems in the management process at different levels through the middle managers of our staff congress, hospital meetings, regular meetings of department heads and administrative visits by our leaders to the departments." (Interviewee XZC, May 15, 2022)	Timely feedback on problems
"The hospital can help us solve problems a timely manner through the middle managers of our staff congress, hospital meetings, regular meetings of department heads and administrative visits by our leaders to the departments. …"(Interviewee WSB, May 14, 2022)	Timely resolution of problems
Thinking about the next step in advance is particularly important. Take the direction of our discipline development for example. The lack of a strategic goal will affect the subsequent development, such as how to introduce talents, how to train talents and how to develop the discipline well, all of which need to be guided by goals before the next action is taken. So, it is critical to set clear goals." (Interviewee ZGZ, May 15, 2022)	Taking preventive measures
"… deployments are made within the scope of responsibility, followed by examinations, monitoring and implementation. Timely feedback is given as to whether there are problems in system implementation in various functional departments, such as the clinical, administrative and logistics departments. So, I think there is timely follow-up." (Interviewee XZC, May 15, 2022)	Taking monitoring measures
"The doctor-patient relationship is relatively harmonious. Our hospital also pays great attention to patients' right to privacy, consultation and participation. For example, in terms of the right to privacy, we have one room for one person, and the name display at the entrance of the outpatient call system also hides a character in the name. The beds in the wards are all independent, and each bed goes with its own curtain." (Interviewee LXL, May 14, 2022)	Focus on patients' privacy
"The doctor-patient relationship is still relatively harmonious. The hospital also places great emphasis on the patient's right to privacy, consultation and participation... As to the right to consultation and participation, we have to give the patients a talk and signature for every operation or surgery. We have to involve the patients in all kinds of special treatment, such as blood transfusion. Besides, the patients have to participate in the marking of the operation site." (Interviewee WGB, May 16, 2022)	Attaching importance to patients' right to participate in consultation
"The second is that we have other channels for inpatients. First, we inform them before they are admitted to hospital. Second, we have follow-up visits after they are discharged. Third, there is also a third-party survey on the doctor-patient relationship through satisfaction surveys, which are effective means of listening to patients and promoting health care management activities." (Interviewee WGB, May 16, 2022)	Listening to patients' opinions
"… Each department carries out satisfaction surveys among, outpatients or inpatients. There are audit opinions in each department on doctor-patient relationships in our hospital. There is a doctor-patient relationship office. The hospital has announced complaint hotlines. And a follow-up visit is conducted on each patient about 10 working days after their discharge. All these channels	Conducting surveys on satisfaction

Examples of interview scripts	Initial concept
enable us to listen to patients' opinions and views on health care quality management. Then we will collect views and report them for discussion and timely improvement." (Interviewee LC, May 15, 2022)	
"Our hospital has a Doctor-Patient Relationship Office. We have also published a complaint hotline. Besides, for each patient discharged from our hospital, a follow-up visit will be paid in about 10 working days…"(Interviewee FXK, May 15, 2022)	Establishment of a Doctor-Patient Relationship Office
"Teamwork is very smooth. For example, in the emergency caesarean department we mentioned earlier, we have a plan and regular drills. If an emergency caesarean section is needed, it takes five minutes to deliver the baby. Although the whole country cannot achieve a five-minute caesarean section, we can at least get the child out in ten to 20 minutes. This situation definitely requires the cooperation of all the staff. Then the healthcare workers in the department, including the delivery room aunt, can immediately go into emergency mode to help us. We would then call the anaesthetists and the anaesthesia and surgery department would immediately prepare the operating theatre and help us prepare for the operation. They would then call the neonatology department, and the neonatologist would immediately rush to the operating theatre and participate in rescuing the new-born. Everything works out very well. There are also hospital-wide consultations featured by multidisciplinary cooperation. Our obstetrics department is supported by specialists. But as out hospital is a primary care institution, our hospital obstetricians do not have enough knowledge of medical and surgical procedures. As a result, if we encounter a critically-ill lying-in woman with multiple complications, we need assistance from multidisciplinary cooperation." (Interviewee FXK, May 15, 2022)	Collaboration among staff
"The purpose of our hospital's health care quality management is to provide patients with safe, timely, effective and economical services. We hold a monthly meeting of the heads of all clinical departments for timely communication between departments. During these meetings, areas needing collaboration and problems encountered in daily work are discussed. We have also established a system of meetings participated by department heads on a monthly basis." (Interviewee LWS, May 15, 2022)	Collaboration among departments
"Our hospital provides multi-channel quality training for staff, both online and offline. Because of the COVID-19 pandemic, more training has been provided online in recent years ... The frequency of online training is relatively guaranteed." (Interviewee LWS, May 15, 2022)	Frequency of quality training
"I think the depth effect is also sound. For example, the hospital CPR training is carried out once every two years. Now everyone in our hospital, including outsourced staff, has attended CPR training and passed the certification. The quality of CPR is also very high, especially among our colleagues in the emergency department and the pre-hospital emergency department, who can be said to have achieved a 100% resuscitation rate. In addition, our obstetrics department has two business training sessions every month, including the study of specialist guidelines and discussion of difficult cases. Through these practical training exercises, we have been able to develop our knowledge of critical obstetric care. We know the resuscitation procedures by heart so that we will not get confused in practice. For example, if there is placental abruption or fetal swelling or prolapse of cord, we can immediately start the emergency caesarean section process and then quickly save the baby." (Interviewee WXH, May 15, 2022)	Depth of quality training

2. Axial coding

Axial coding aims to further generalise and rearrange the categories obtained through open coding to establish links between the different categories through cluster analysis and to develop the main categories. This is done by developing the nature and dimensions of the categories to make them more rigorous, and by linking the separate categories to discover and establish potential logical relationships between them. At this stage, the initial categories were generalised to form 24 sub-categories and 11 main categories (see Table 4.3).

Table 4.3 Axial coding results

No.	Main categories	Subcategories
1	A sound quality management organization structure	1) Hospital Quality and Safety Management Committee 2) Branch Quality and Safety Management Committees 3) Reasonable staffing 4) Quality management at the hospital and department levels 5) Operation guarantee
2	Institutional guarantee and support	6) Punitive measures 7) Incentive measures 8) Fund guarantee 9) Institutional innovation
3	Leadership participation	10) Participation in meetings 11) Supervision and inspections
4	Process improvement	12) Timely feedback on problems 13) Timely resolution of problems
5	Process control	14) Taking preventive measures 15) Taking monitoring measures
6	Good doctor-patient relationship	16) Focusing on patients' privacy 17) Attaching importance to patients' right to participate in consultation
7	High levels of patient satisfaction	18) Listening to patients' opinions 19) Conducting surveys on satisfaction 20) Establishment of a Doctor-Patient Relationship Office
8	Teamwork among work teams	
9	Collaboration among departments	
10	Frequency of quality training	
11	Depth of quality training	

3. Selective coding

The aim of the selective coding was to develop a theoretical framework by extracting the "core categories" from the main categories and systematically analysing the relationship between the core categories and the other categories.

1) Thematic codes of leadership commitment

Through the qualitative data analysis, the thematic codes of "leadership commitment" were initially formed (Figure 4.2).

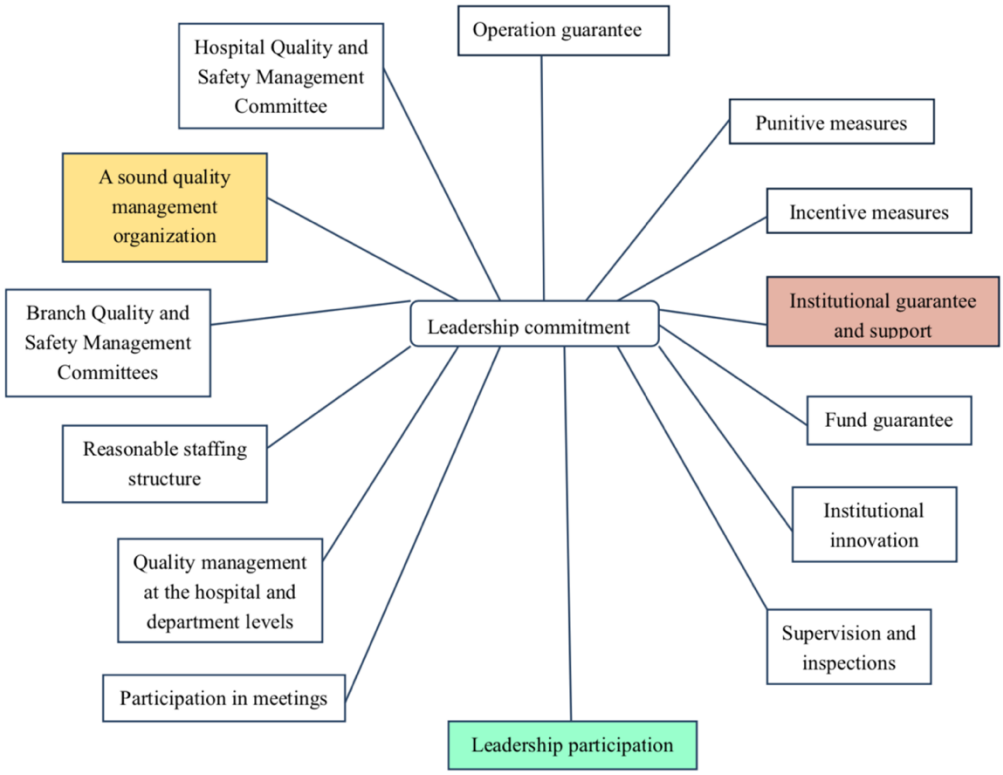


Figure 4.2 Thematic codes of leadership commitment

On this basis, the main categories of "a sound quality management organization structure", "institutional guarantee and support" and "leadership participation" were identified to be under this theme (see Figure 4.3).

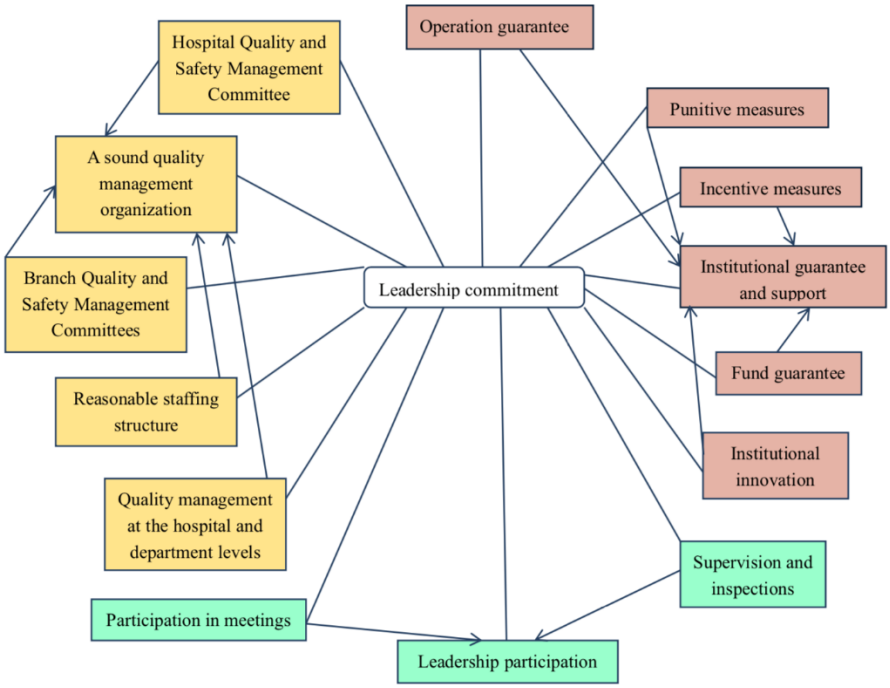


Figure 4.3 Categorisation of the leadership commitment theme

2) Thematic codes of continuous quality improvement

Through the qualitative data analysis, the thematic codes of "continuous improvement" were initially formed (Figure 4.4).

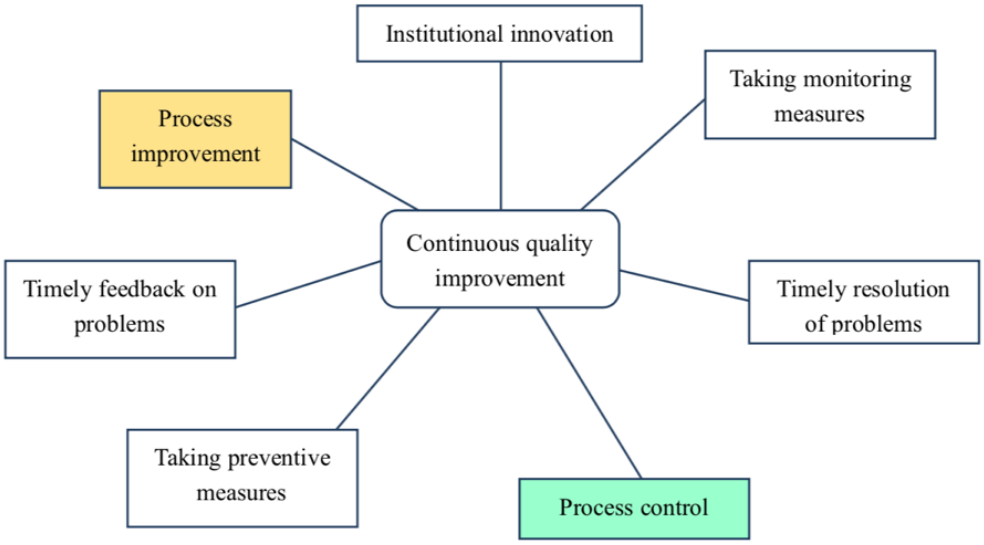


Figure 4.4 Thematic codes of continuous quality improvement

On this basis, the main categories of "process improvement" and "process control" were identified to be under this theme (see Figure 4.5).

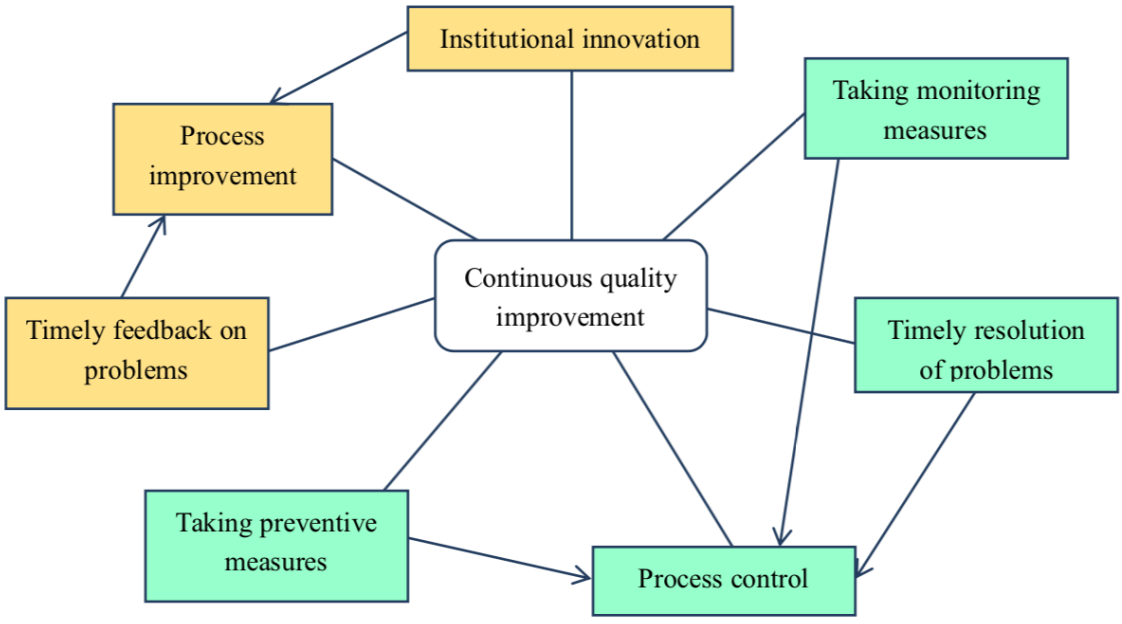


Figure 4.5 Categorisation of the continuous quality improvement theme

3) Thematic codes of patient centredness

Through the qualitative data analysis, the thematic codes of "patient centredness" were

initially formed (Figure 4.6).

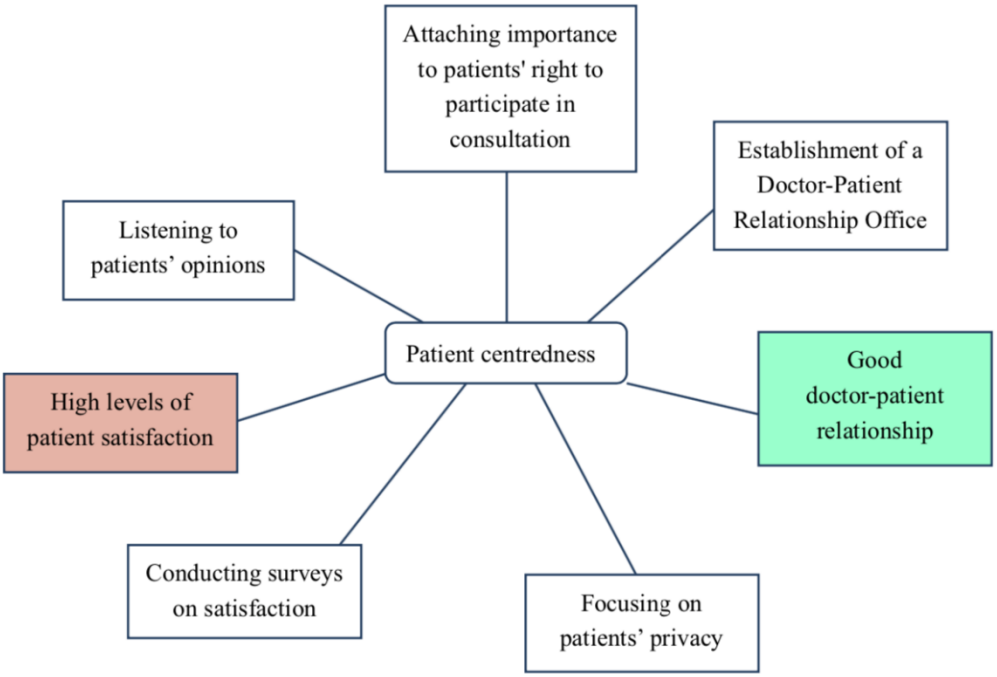


Figure 4.6 Thematic codes of patient centredness

On this basis, the main categories of "high levels of patient satisfaction" and "good doctor-patient relationship" were identified to be under this theme (see Figure 4.7).

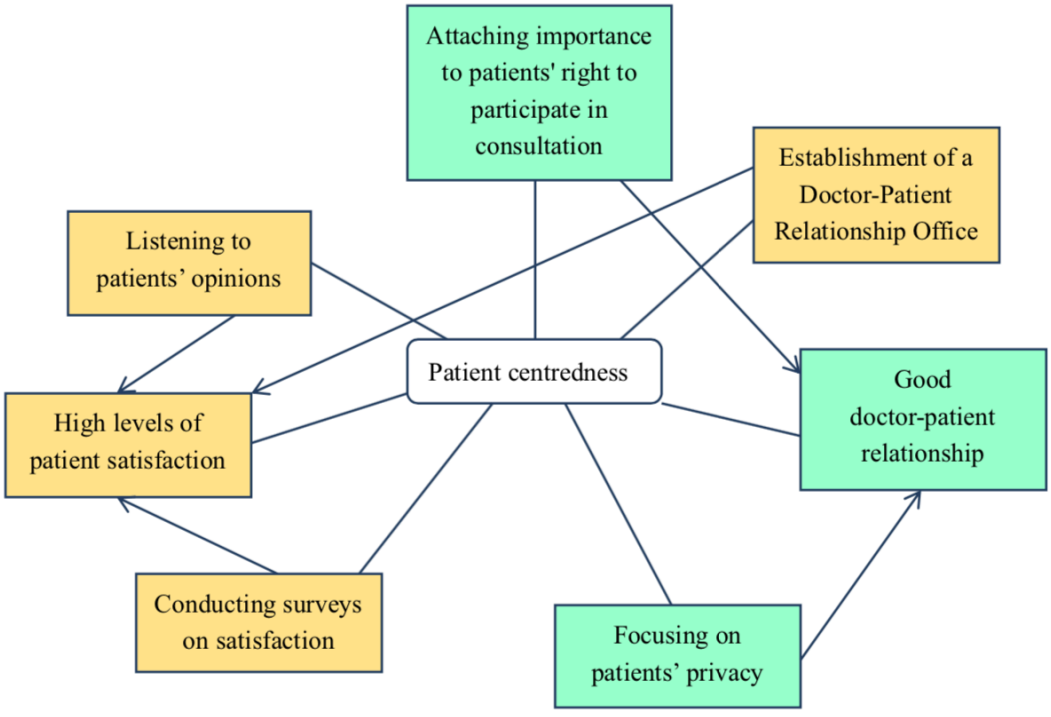


Figure 4.7 Categorisation of the patient centredness theme

4) Thematic codes of teamwork

Through the qualitative data analysis, the thematic codes of "teamwork" were initially formed. On this basis, the main categories of "collaboration among staff" and "collaboration among departments" were identified to be under this theme (see Figure 4.8).

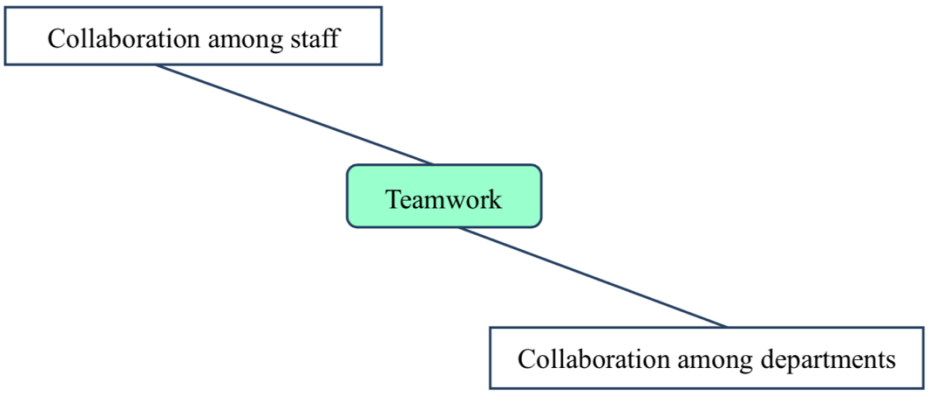


Figure 4.8 Thematic codes of teamwork

5) Thematic codes of quality training

Through the qualitative data analysis, the thematic codes of "quality training" were initially formed. On this basis, the main categories of "frequency of quality training" and "depth of quality training" were identified to be under this theme (see Figure 4.9).

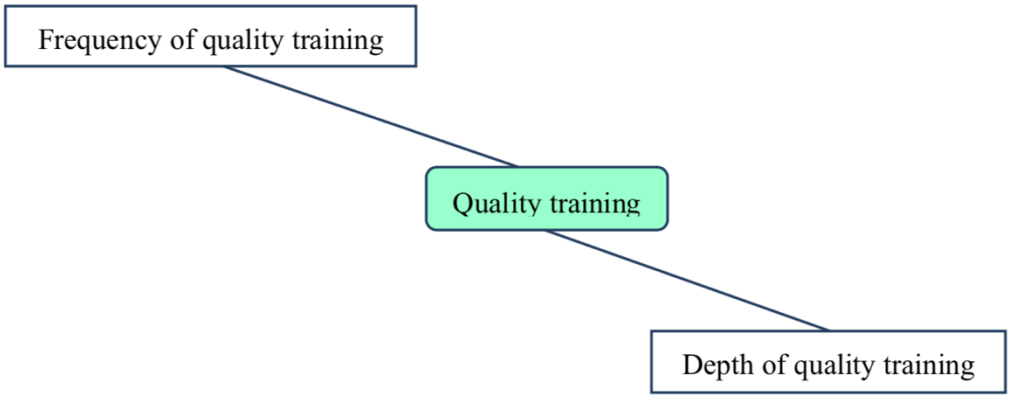


Figure 4.9 Thematic codes of quality training

Through iterative reflection and comparison of main categories, sub-categories and the interview data, the interviewer found that the aforementioned axial codes could be grouped into five categories: leadership commitment, continuous quality improvement, patient-centredness, teamwork, and quality training (see Table 4.4).

Table 4.4 Level-3 coding

Selective coding	Axial coding	Open coding
Leadership commitment	1. A sound quality management organization structure	1) Hospital Quality and Safety Management Committee 2) Branch Quality and Safety Management Committees 3) Reasonable staffing 4) Quality management at the hospital and department levels
	2. Institutional guarantee and support	5) Operation guarantee 6) Punitive measures 7) Incentive measures 8) Fund guarantee 9) Institutional innovation
Continuous quality management	3. Leadership participation	10) Participation in meetings 11) Supervision and inspections
	4. Process improvement	12) Timely feedback on problems 13) Timely resolution of problems
	5. Process control	14) Taking preventive measures 15) Taking monitoring measures 16) Focus on patients' privacy
Patient centredness	6. Good doctor-patient relationship	17) Attaching importance to patients' right to participate in consultation 18) Listening to patients' opinions
	7. High levels of patient satisfaction	19) Conducting surveys on satisfaction 20) Establishment of a Doctor-Patient Relationship Office
Teamwork	8. Collaboration among staff 9. Collaboration among departments	
Quality training	10. Frequency of quality training 11. Depth of quality training	

4. Saturation test

The results of the full sample search using MAXQDA software showed that the key elements and their logical relationships in the case hospital' use of TQM for health care quality management were all within the core categories obtained in this study, and no new main categories and sub-categories and relationships were found. Thus, the resulting codes were considered to have reached saturation.

4.4 The status of TQM implementation in the case hospital

4.4.1 Leadership commitment status in the case hospital

In line with the interview data analysis results, the importance attached to the TQM implementation for health care quality management at the case hospital leadership level can be summarised as support for a sound organizational structure for quality management, support

for system development and leadership commitment.

1. Organizational structure

Hospital-level quality control department. The case hospital is guided by the TQM theory. It has set up a Hospital Quality and Safety Management Committee and its branch committees. The Hospital Quality and Safety Management Committee is managed by the respective executive vice president, and the quality control department is responsible for the implementation of specific measures. The Quality Control Department currently consists of five people, including three clinicians, one health care manager and one nurse. The responsibilities of the Quality Control Department are: to assist the Hospital Quality and Safety Management Committee in managing the branch committees; and to be responsible for the promotion and guidance of continuous quality improvement tools, the unified management of hospital data and the reporting of data from various key platforms, managing the quality of medical records, clinical pathways and single patient categories, and managing adverse events.

Departmental quality control groups. The case hospital had set up a Health Care Quality and Safety Management Committee, with the president as director. It has 21 branch committees. Clinical departments had set up health care quality and safety management teams. The department director is the first person in charge of the health care quality of the department, fully responsible for the health care quality work of this department. The health care quality and safety management team's main functions are: to develop and improve the diagnosis and treatment routines and drug use norms of the department and organize the department staff to implement them according to the norms; to implement the diagnosis and treatment procedures and norms on patients; and to organize the department staff to study medical and nursing routines on a regular basis and to improve the quality awareness of the department staff with full consideration of the characteristics and trends of the department's specialties. Besides, the team is also responsible for collecting health care quality problems in the department, making rectification plans, and implementing rectification measures for the problems. It shall also provide feedback on health care quality problems to the hospital-level quality control department, propose corrective measures, and repeat this cycle in the next stage. Number of the members of the quality management teams are presented in Figure 4.10 below.

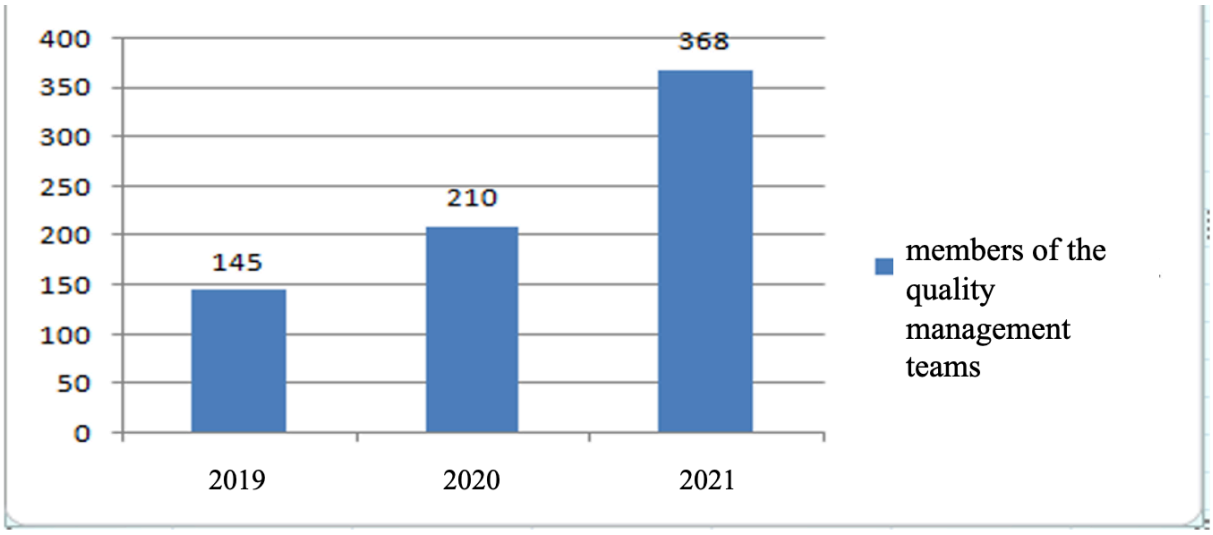


Figure 4.10 Number of members of the quality management teams in the case hospital

Source: The case hospital's annual reports from 2019 to 2021

2. System development

TQM is a dynamic and complex process. To ensure its implementation, the case hospital had developed 116 relevant systems on health care quality management based on the whole process management principles of TQM, including the hospital quality and safety management work plan, three-level rounds system, first-contact doctor accountability system, complaint management system, the system to encourage patient participation in health care safety management, and the three-level management system for hospital equipment. The quality control department is responsible for the implementation and monitoring of the systems.

3. Leadership commitment

The case hospital made clear that the president was the first person responsible for health care quality and health care quality management. The department director was the first person responsible for the health care quality of the respective departments. Department directors should hold monthly health care quality and safety work meetings to analyse the deficiencies and problems for improvement. The hospital Health Care Quality and Safety Management Committee held quarterly management meetings to analyse and summarise the health care quality status of the whole hospital for each quarter, put forward suggestions and requirements, conduct timely root cause analysis of sentinel events, and urge improvements. As said by Interviewee CXX:

"The leadership plays a major role in the health care quality management process. Take our emergency department for example. We are creating five major centres. In this process, particularly for the chest pain and stroke centres, our president and party secretary are the directors, and he is involved in all our meetings. Given his attention, we have made

significant progress in the establishment of the five centres."

Given the leadership commitment, the case hospital's TQM organizational structure has been optimised and its quality management process had become smoother. Interview CWZ said: "Health care quality management is inseparable from the leadership's commitment. This is like driving a drain. If we want the train to go fast, the leading role of the locomotive is crucial. Seen from the development in recent years, our hospital's health care quality management has been improved significantly…". This shows that the case hospital had improved its organizational structure and system norms in accordance with the TQM theory and had strengthened leadership commitment. These efforts provided the institutional guarantee for the case hospital to carry out health care quality management and improve its management.

4.4.2 Continuous quality management commitment status in the case hospital

Under the guidance of the TQM theory, the case hospital mainly collected the problems in the health care quality management process through the following ways: firstly, to expose the points in need of improvement through the adverse event reporting system; secondly, to identify the problems through the self-inspection of clinical departments and the supervision of functional departments; and thirdly, to identify problems through the joint inspection of quality by the higher authorities.

The case hospital had a quality control department to implement, monitor and manage its health care quality activities. The quality control department was formed by clinical and nursing staff. Different monitoring indicators at the hospital and department levels were developed, and the relevant departments were required to monitor indicators on a long-term basis. The quality control department organised discussions and rectifications on the development of each indicator and the implementation plan. The hospital was required to report progress on a regular basis on the indicator monitoring process; and the whole process was guided by the appropriate experts. Besides, the quality management team of each department held monthly meetings to discuss their corresponding quality indicators. The results of the meetings were assessed by the quality control department and incorporated into the performance appraisals of departments and middle-level managers of the hospital. The Quality Control Department set 40 hospital-level quality improvement indicators and 80 department-level improvement indicators each year, with a 95.0% compliance rate for hospital-level indicators and 94.5% for departmental-level indicators. Meanwhile, the hospital had invested ten million yuan in quality control performance each year for the past three years to support and improve health care quality. The

hospital had set up an adverse event system and implemented the principle of reporting without punishments, with promotion bonus points for reporting, thus encouraging everyone to report.

After reporting, the department head would review, and during the review process, problems would be identified and timely improvement made by functional departments, including the Medical Affairs Department and the quality control department; clinical problems would also be reported to the executive vice president in charge on a regular basis. The vice president in charge held regular meetings of the clinical department heads every month, in which he would also ask the relevant departments to rectify the problems. Meanwhile, the functional departments and relevant departments would summarise the assessment indicators related to health care quality of clinical departments to the Performance Office every month, which would link the results of the indicators with the individual performance of middle managers and departments. The vice president in charge would announce the assessment results and the problems of each department at the regular meeting of department heads and request regular rectification. Meanwhile, the hospital encouraged departments to use quality improvement tools to address problems through the implementation of a "quality management competition". In terms of funding, the case hospital had also given strong support, with funding for continuous quality improvement reaching 350,000 yuan in 2021, an increase of 321.68% compared to 2020 (see Figure 4.11).

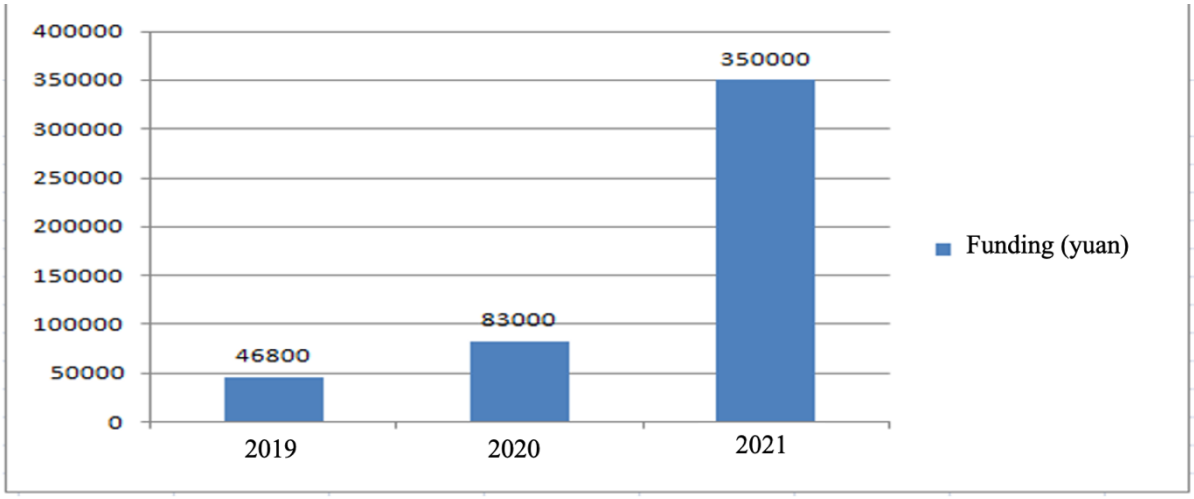


Figure 4.11 Funds for continuous health care quality improvement from 2019 to 2021

Source: The case hospital's annual reports from 2019 to 2021

The specific practices were:

1. Weekly administrative check-up: the first responsible persons of relevant functional departments of the case hospital, such as medical, nursing, medical laboratory, nosocomial infection, outpatient, medical ethics, finance, administrative, logistics, information and equipment departments carried out clinical check-up in accordance with the hospital inspection

content, plans and quality control assessment standards, solved the problems that existed in the clinical front line on site, and summarised the results of the inspection to the whole hospital, which will be followed up by the functional departments.

2. Random inspections several times a month were carried out to check the health care quality control of each department on site and make up for the deficiencies of the quality control check in the administrative check-ups.

3. The health care quality management assessment results were synthesized once a month to form a health care quality management report. The report was composed of such contents as: the achievement of task indicators, the health care quality management assessment scores of each department, the active reporting of adverse events for the month, and other quality control issues. After the report was reviewed by the executive vice president in charge of health care quality, it would be applied to the performance allocation and also synchronized to each department as feedback. The quality control team of each department would formulate measures to solve the problems and rectification suggestion system, and the Quality Control Department would track the rectification of the problems in real time.

4. Quarterly meetings of the Health Care Quality and Safety Committee were held. The Quality Control Department would collate and analyse the quarterly data, present them in the form of PPT and discuss them in the meetings, summarise the quarterly management experience and deficiencies, address the problems in quality management and propose the plan and target for the next quarter.

5. Semi-annual briefing, analysis and summary of cases of medical safety incidents.

6. The case hospital had set up various emergency response teams, formulated emergency plans, and rehearsed them from time to time; meanwhile, it had set up a hospital-wide broadcast system, through which the appropriate team would be deployed to deal with the incident in case of special circumstances. For example, the broadcast of 333 meant that there was a mass injury in the emergency department, and the whole hospital rescue team needed to be activated to support the emergency department; once the broadcast was made, the hospital rescue team would arrive at the emergency department within five minutes, and the corresponding hospital leaders and functional departments would also arrive at the emergency department to coordinate the rescue; the broadcast system could quickly deploy the rescue personnel, equipment and materials for the mass incident, so that the mass incident could be dealt with in an orderly and rapid manner; the team was highly collaborative, with a 95% or more availability of emergency personnel for each activation. Every year, the hospital successfully rescued many patients with internal pulmonary arrest in accordance with the emergency plan through the broadcast system.

Once a patient was found to be in cardiopulmonary arrest, the medical staff would call the hospital's fire control centre at the same time, and the fire control centre would immediately broadcast the specific location of 999, which meant there was a patient in cardiopulmonary arrest, and the rescue team would reach the given area within five minutes after hearing the broadcast. After the establishment of the broadcast system, the success rate of rescuing patients in cardiopulmonary arrest in the hospital had increased by 20% (see Figure 4.12).

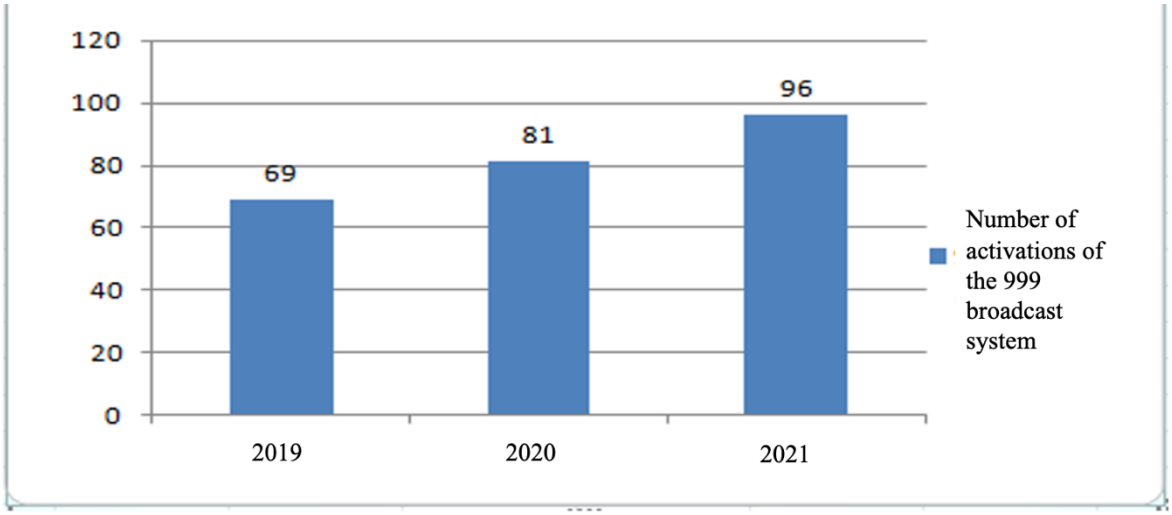


Figure 4.12 The number of activations of the 999 broadcast system from 2019 to 2021

Source: The case hospital's annual reports from 2019 to 2021

4.4.3 Education and training status of the case hospital

The case hospital implemented training at both hospital and departmental levels under the guidance of TQM theory and carried out training and education based on a combination of online and offline model. The case hospital was a training provider accredited by the American Heart Association with one chief instructor and 16 instructors. The hospital-level training focused on the use of quality control tools, nosocomial infection, firefighting, CPR and infectious disease diagnosis and treatment; hospital-wide CPR training was conducted once every two years, with participants including outsourced staff such as security personnel, cleaners and canteen workers. From 2019 to 2021, the training rate of cardiopulmonary resuscitation reached 98.4%, and the passing rate of training assessment was over 95.5%; the training on nosocomial infection mainly included the technical guidelines on prevention and control of the COVID-19 pandemic, hand hygiene standard for healthcare workers, and putting on and taking off protective equipment. In 2021, a total of 74 training sessions were conducted, including 11 online and 63 offline training sessions, and 2,342 people passed the hand hygiene assessment; for trainings related to the department's quality control staff, such as trainings on

the use of quality control tools, the training completion rate could reach 100%. The department also drew up annual training plans for theory and skills operation and carried out the training as planned and on schedule. The training was followed by an assessment, the results of which are combined with the individual physician's year-end departmental evaluation priorities. Specific training details are presented in Table 4.5 and Figure 4.13 below.

Table 4.5 Quality management trainings of the case hospital from 2019 to 2021

Training date	Training content	Source of participants	Number of participants
March 21, 2019	Application of continuous quality improvement (PDCA)	Middle managers	150
April 18, 2019	Application of the Quality Control Circle (QCC)	All healthcare workers	1118
August 28, 2019	Application of figures and tables in management tools	Nursing staff	210
November 19, 2019	Standardized management of haemodialysis room	Nursing staff	150
November 29, 2019	Nosocomial infection knowledge	All healthcare workers	1129
January 11, 2020	Causes of solutions to doctor-patient disputes	Nursing staff	400
March 20, 2020	Application of continuous quality improvement (PDCA)	Middle managers	165
April 9, 2020	Application of the Quality Control Circle (QCC)	All healthcare workers	1158
March 8, 2021	Continuous quality improvement management	Hospital leadership, Middle managers、Members of the Health Care Quality and Safety Management Team of each department	260
March 10, 2021	Work of Quality and Safety Management Team of each department	Members of the Health Care Quality and Safety Management Team of each department	260
March 12, 2021	Application of quality control tools	All healthcare workers	1203

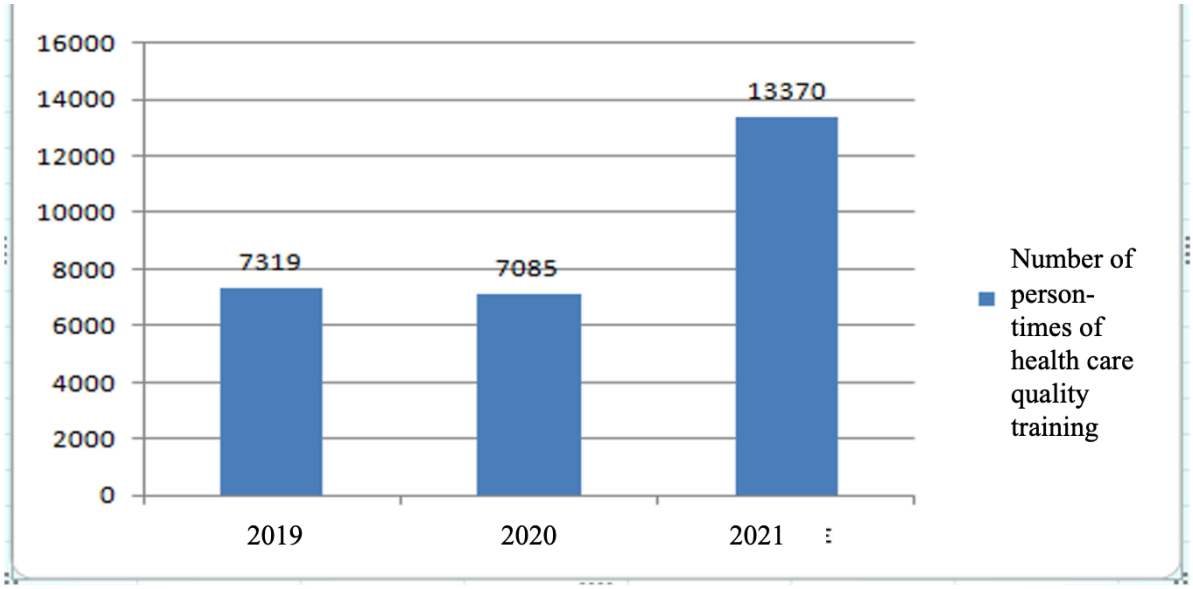


Figure 4.13 Number of person-times of health care quality training held by the case hospital from 2019 to 2021

Source: The case hospital's annual reports from 2019 to 2021

4.4.4 Status of patient-centredness in the case hospital

Combined with the analysis of the interview data, the patient-centredness of the case hospital is reflected in two areas: the doctor-patient relationship and patient satisfaction.

In terms of the doctor-patient relationship, the case hospital paid great attention to the privacy of patients. It established a Patient Privacy and Information Protection System, which stipulated that healthcare workers must respect and protect patients' privacy. Interviewee BML said: "in terms of privacy protection, for example, the name displayed by the outpatient call system will hide the character in the middle; the beds inside the wards were all separate, and each bed had a separate bed curtain". Patient 1 said, "I feel that my privacy is protected in the hospital. For example, every patient receives consultation in the consultation room by himself/herself in the outpatient department. So, when I tell my condition to the doctor, I would not be concerned or feel embarrassed." Meanwhile, the case hospital also attached great importance to the patient's right to participate and had developed the System of Encouraging Patient Participation in Medical Safety Management and the System of Managing Informed Consent. Interviewee BML said, "in terms of the right to consultation, we have to talk to the patient and ask for signature for every operation or surgery. All kinds of special treatment that requires the patient's participation, such as blood transfusion, together with surgical procedures, such as the marking of surgical sites, require the patient's participation." As the case hospital fully respected the patient's right to information and privacy, the doctor-patient relationship at

the case hospital was generally good. Patient 1 said, "the doctors and nurses here are very friendly. I think they all care about us, and the patients are quite polite."

In terms of patient satisfaction, the case hospital had set up a doctor-patient office and formulated the "Rights and Duties of Patients", "Doctor-Patient Communication System" and "Complaints Management System". The case hospital focused on listening to patients' opinions and established a regular mechanism to seek patients' opinions. Specifically, healthcare workers would ask patients' opinions from time to time and organise regular seminars to seek patients' opinions. Patient 2 said, "during my stay in the hospital, the nurses held a forum for us patients to talk about our feelings or treatment experience during our stay in the hospital and share with them the opinions we may have. We did make some suggestions and comments." Besides, the hospital also focused on conducting satisfaction surveys. Patient 4 said, "when I was in hospital, the doctors would ask me what they needed to improve or what my needs were, and the nurses would organise a satisfaction survey for the patients once in a while."

The case hospital had been adhering to patient-centredness. From 2019 to 2021, patient satisfaction increased from 75.4% to 95.3%; staff satisfaction increased from 80.5% to 92.5%, medical complaints dropped by 50%, and the amount of compensation for medical disputes dropped by 70%. Interviewee HYY said, "our hospital is also better now in terms of patient satisfaction, all above 95%, and the patient satisfaction rate in our department is also above 95%."

4.4.5 Status of teamwork in the case hospital

In terms of teamwork, the case hospital had established various emergency response teams, formulated emergency plans, and rehearsed them from time to time; it had also set up a hospital-wide broadcast system so that when a special situation was encountered, the appropriate team would be deployed through the broadcast system to deal with the situation. For example, the broadcast of 333 meant that there was a mass injury incident in the emergency department, in which case the whole hospital rescue team needed to be activated to support the emergency department. Once the broadcast was made, the hospital rescue team would arrive at the emergency department within five minutes, and the corresponding hospital leaders and functional departments would also arrive at the emergency department to coordinate the rescue; the broadcast system could quickly deploy the rescue personnel, equipment and materials for the mass incident, so that the mass incident could be dealt with in an orderly and rapid manner. the team was highly collaborative, with a 95% or more availability of emergency personnel for

each activation. The hospital also successfully resuscitated a number of in-hospital cardiopulmonary arrests each year through the broadcast system and in accordance with the emergency plan. Once a patient was found to be in cardiopulmonary arrest, the medical staff would call the hospital's fire control centre immediately. The fire control centre would immediately broadcast 999 in the specific location of the incident. The code 999 meant there was a patient in cardiopulmonary arrest, in which case the rescue team would reach the established area within five minutes after hearing the broadcast. After the broadcast system was set up, the success rate of rescuing patients with cardiopulmonary arrest in the hospital increased by 20%. One interviewee said, "There is coordination between the various departments and staff in the hospital, because we have a broadcast system. If a patient is in a very critical condition or if there is a security incident in the ward, we would call the broadcast centre. When they receive the call, the radio would come out, and everyone would hear the sound 999. Then every would immediately gather to control the patient's resuscitation in the shortest possible time. I think this is very good practice."

4.5 Existing problems in the TQM implementation in the case hospital

4.5.1 Lack of leadership commitment

Quality management has become a top priority for senior leaders and a decisive factor in the successful management of an organization (Juran, 1989). Senior leaders hold the core power of an organization, and the leadership they possess helps the organization set management strategies and drive them to be implemented effectively (Greenberg & Baron, 2003). The interviews with the interviewees revealed that the case hospital still had the following problems in terms of leadership commitment:

First, there was a lack of clear goals to drive actions. Interviewee SXF stated, "There is no clear and specific medium-and-long-term goal for health care quality management at the leadership level. The lack of this strategic goal will affect a series of subsequent quality management activities, such as how to bring in talents, how to train talents, and how to develop the disciplines. All these require a goal before the next step can be taken. So, it is crucial to set a clear goal." Interviewee SXF introduced the hospital's situation regarding the development of medium-and-long-term strategic goals for health care quality management, reflecting that the leadership did not attach enough importance to health care quality management, and that consideration and health care quality management from a strategic level was not sufficient.

Second, insufficient importance was attached to the Quality Control Department. Interviewee ZXY said, "The hospital has set up a Hospital Health Care Quality and Safety Management Committee, under which there are branch committees. The Quality Control Department is specifically responsible for the management of health care quality in the hospital and is under the supervision of the respective executive vice president." As mentioned by Interviewee LWS, "in my view, the organizational structure should be optimised so that the hospital president is directly responsible for the Quality Control Department. Some other representative hospitals are doing so. I feel that we can learn from them." ZXY and LWS introduced the basic situation of quality management in the hospital and the status of the Quality Control Department respectively. They both believed that the Quality Control Department would be better managed if it was directly led by the hospital president.

Third, leadership capacity needed to be strengthened and improved. Interviewee HYY said, "The leadership's ability to control the overall situation may be insufficient. For example, the supervision of quality improvement within each department may not be adequate in terms of details." HYY elaborated on the competencies of the leadership, indicating that there was still room for improvement in the hospital leadership's management competencies and management level.

Fourth, the leadership's management of health care quality was not consistent. Interviewee CTJ said, "I think our hospital's health care quality management is intermittent. There are periods when we make huge efforts to do it, while in other times we may slacken our efforts. So, I think we still have room for improvement in terms of management".

4.5.2 Insufficient development of the health care quality management team

The establishment of a health care quality management team is the core of health care quality management, and a high-quality health care quality management team can contribute to health care quality management. The interviews with the interviewees revealed that there were still deficiencies in the development of health care quality management teams in the case hospital.

1. Inadequate personnel. Interviewee CTJ said, "At present, the Quality Control Department only has five people. Due to the limitation of human resources, it has not formed a major quality control pattern. As a result, it is difficult to carry out all-round quality management of the whole hospital. This is a limitation. Interviewee WSB said, "In terms of human resources, our Logistics Department, especially the General Affairs Department, has been lacking technicians. Since I joined the hospital nine years ago, I have been the only

technician in the General Affairs Department so far. There has not been fresh blood. As a result, the talent echelon of our entire department is a bit problematic." CTJ described the staffing of the Quality Control Department and believed that the insufficient number of staff in the Quality Control Department would affect the implementation and effectiveness of health care quality management. In addition, according to WSB, the number of talents in the hospital was insufficient, and there was a temporary shortage.

2. Low level of professionalism. Interviewee CLL mentioned, "I think there is still a lack of some quality hospital-level health care quality managers in our hospital"; Interviewee ZXY said, "The Quality Control Department currently has five people, three clinicians, one health career manager and one nurse. All of them are not quality management professionals. So, their abilities to carry out quality management are still lacking."

3. Insufficient team stability. Interviewee CLL stated, "We also need to improve our team stability. The instability of the team will make it difficult for us to achieve long-term goals, and the team needs to be stable to accomplish our goals." The poor stability of the health care quality management team and the frequent turnover of staff make it difficult to achieve long-term results in health care quality management.

4.5.3 Imperfect quality management system

The health care quality management system is the key to guiding health care quality management and can clarify which personnel should be responsible for the various aspects of health care quality management, how these tasks should be done and to what extent, and to restrain the behaviour of the relevant personnel engaged in health care quality management activities. The system can also provide a normative and procedural reference. The development of systems is indispensable for carrying out health care quality management activities. The interviews showed that the following problems still existed in the development of the health care quality management system in the case hospital:

1) the contents of the system lacked operability. Interviewee LWS said, "At present, the whole hospital's health care quality management framework is there, but the basic quality is not solid. For example, our hospital does have some systems, but some contents are still not operable. Specific, substantive and operable contents are not in place. Besides, process examination and supervision still need to be further improved." LWS' words reflected that the hospital had relatively sound health care quality management systems, but some systems were out of touch with reality, lacking operability and relevance, making effective implementation

difficult.

2) System implementation was not thorough. Interviewee LCY said, "I think the major systems may be in place now, but the supervision of system implementation may still be inadequate. Some individual systems are not practical. Although the requirements are high, it is actually a bit difficult to implement them. So, improvements still need to be made in this aspect." Interviewee ZGZ said: "Currently, there is a quality and safety management team set up in the department, but I think we still have some deficiencies. Specifically, we may still lack relevance and operability for the work plan. In other words, it is still difficult to track whether this plan is effectively implemented." Similarly, the results of interviews with LCY and ZGZ indicated the unsatisfactory system implementation and the lack of supervision mechanisms.

3) There was a bias in the understanding of the system. Interviewee LXF said, "The hospital leadership does attach importance to system development. However, different departments have different understandings of various systems and may implement systems differently. Besides, different employees have different extents of grasp of the systems. As a result, there is an imbalance among various departments when it comes to system implementation."

4.5.4 Lack of awareness of health care quality management

Awareness determines the way of thinking, which then influences action. To strengthen health care quality management, it is important to have a clear and systematic understanding of health care quality management. Interview results showed that the following problems still existed in the case hospital's understanding of health care quality management: 1) Insufficient understanding. Interviewee ZZS said, "I think the leadership team of our hospital is yet to improve their understanding of the concept of health care quality management and the relevant theories. Many of our leaders may still be unfamiliar with the whole concept of health care quality management and the application of management tools. Besides, the leadership's commitment is yet to be improved, because when the leadership attaches importance to things, it will be easier to advance them, and success in health care quality improvement achieved. The leadership's attention is not enough, and expertise still needs to be strengthened." Interviewee CLL said, "Our awareness of quality management is not strong. Some healthcare workers are not sufficiently aware of quality management. As mentioned before, some of the health care quality management activities are not done well enough, and some of the contents of health care quality management are not very well understood." Interviewees ZZS and CLL respectively recognised that the leadership as well as some of the staff had insufficient

awareness of health care quality management and that they could not use health care quality management tools. 2) Biased understanding. Interviewee LXL said, "For example, some of our healthcare workers still emphasise skills and technology over management and do not pay much attention to health care quality management. Some individual healthcare workers do not pay much attention to system management. So, I think we should enhance the concept of health care quality management among healthcare workers and strengthen health care quality management training." The interviewees' responses indicated that the phenomenon of putting business before management still existed in the case hospital, which fully demonstrated that the emphasis on health care quality management still needed to be strengthened.

4.5.5 Inadequate teamwork

Health care quality management is a systematic project, with different departments taking on corresponding tasks. A health care service requires the participation of several departments at the same time. For example, the process from making an appointment to outpatient consultation and then to referral may seem to be simple, they are all important links of health care services, and there is an obvious process relationship between the links. Unsmooth collaboration will affect the efficiency of the whole process. Interviews revealed the following problems with teamwork in the case hospital: 1) insufficient linkage. Interviewee BML said, "Some functional departments are not closely enough connected with the clinical departments. There are few visits to the departments to understand the situation. They need to go down to the departments more often to understand the situation." 2) Lack of co-ordination mechanism: LWS said, "The smoothness of coordination is often related to the difficulty of the problem. Sometimes, there is miscommunication or refusal to communicate, in which cases there is a need for appropriate measures. For example, we may organize a themed discussion meeting, a meeting of hospital presidents, or a quarterly administrative check-up feedback meeting. The involvement of the presidents and the committees will help eliminate the barriers to communication in this area and achieve good communication effect". ZCR agreed, "I think the hospital is a multi-departmental collaborative unit, involving clinical, logistics and other departments. It is important to establish a mechanism for communication and coordination; unsmooth communication and collaboration will affect or hinder health care quality management activities." Interviewee ZZS said, "I think there are still a lot of deficiencies in the collaboration between our current functional departments that are not smooth, and the phenomenon of passing the buck still exists. So, we need to establish a collaborative mechanism in the administrative

functional department, which can better improve our coordination and cooperation efficiency." All the above interviewees believe that the case hospital had not established a systematic, sound and effective communication and coordination mechanism among departments, which affected the efficiency of collaboration among departments.

4.5.6 Inadequate focus on patient-centredness

Hospitals exist to serve patients, and patients have the greatest say about their involvement in quality management activities and their perception of the quality of care in hospitals. Hospitals can obtain feedback on quality management through communication with patients (Tari et al., 2007). Through the patient's perspective, it is possible to effectively gain a clearer understanding of the problems that exist in each aspect of the hospital's health care process and the key control points in the patient's access to care. On this basis, to develop appropriate responses and solutions to ensure that each aspect of health care quality management achieves the desired results (Lee et al., 2013). The interviews revealed that the following problems still existed in the case hospital in terms of patient-centredness:

1. Influence of external factors. Interviewee SXF said, "Nowadays, the doctor-patient relationship is seriously affected by external influences. There are many voices of disharmony in social opinion about the doctor-patient relationship. We feel that there is still a lack of trust in doctors from patients. As said by Interviewee, "Currently, doctor-patient relationships may be affected by the overall social propaganda orientation. We are living in the era of self-media. Many small issues can be magnified and over-interpreted. So, I think that on the whole, all hospitals, including our hospital, are faced with relatively strained doctor-patient relationships."

2. Poor communication. Interviewee CTJ said, "Since the manpower in our hospitals is relatively tight, many doctors have to face a lot of tedious work every day. They have to deal with a lot of things every day. For example, they may have to face dozens or even hundreds of patients a day. So, they may not have so much time to engage in detailed communication with the patients. Lack of communication may also lead to strained doctor-patient relationships."

3. Insufficient service awareness. Patient 3 said, "I feel that the doctors and nurses in the ward are quite busy, and sometimes if they want to ask any questions, they do not listen as promptly and are slower to deal with them." Patient 5 said, "Some of the doctors are not very nice. They have a rather long face. They speak in a rather apathetic manner and get impatient after being asked a few more questions. This may be because they need to deal with many patients and cannot get off work on time, which can cause them to get annoyed".

4.5.7 Insufficient quality training

Modern management theories regard education and training an important approach to improve the qualities of staff. At present, some hospitals in China, especially those at the county level, do not pay enough attention to education and training due to human resource constraints, inadequate software and hardware facilities, and insufficient financial guarantee. However, the healthcare industry is a high technology-dependent industry, where health care quality management theories and practices as well as medical technology and equipment are constantly being updated. This requires healthcare workers to master the relevant theories and techniques, and conducting education and training is one of the most effective and convenient ways to achieve this purpose. The interviews showed that the following problems still existed in the case hospital in terms of education and training.

First, the training methods were not reasonable. Interviewee SXF said, "At present, there are online and offline training. Because of the COVID-19 pandemic, most training sessions are held online in recent years. In terms of effectiveness, online training is less effective than offline training, because offline training provides an opportunity for face-to-face interaction and questions can be asked. In comparison, the depth of online training may be lacking. If offline training and online training are combined, the depth and effectiveness may be improved."

Second, there was a lack of evaluation mechanism for the effectiveness of training. Interviewee CTJ said, "I think there may be a lack of evaluation of the effectiveness of training. Whether the training is online or offline, its effect is seldom evaluated afterwards. In other words, there is a lack of an evaluation mechanism. I think training evaluation should be strengthened so that we can know how well the trainees have mastered the content, or what the results are." Interviewee HYY said, "Training is carried out every year. Some training sessions may become a mere formality, in which participants just register their attendance and leave with few listening through the whole process. There is not enough attention. For example, our department participated in the PDCA training in 2017. But the department staff still do not quite understand how to do quality improvement according to PDCA. The PDCA training still needs to be strengthened. The above interviews showed that although the case hospital had conducted training, there was still a lack of an evaluation mechanism for the effectiveness of the training. Some training sessions become a mere formality, and participants could not gain knowledge from those training sessions.

4.6 Coping strategies to address TQM implementation problems in the case hospital

With the rapid socio-economic development, patients' demand for high quality health care services is increasing and their expectation of the quality of health care services provided by hospitals is getting higher and higher. In this context, there is an urgent need for hospitals to strengthen their health care quality management to meet patients' needs. The case hospital has achieved very good results in TQM implementation. But due to the limited cases of TQM implementation in county-level hospitals at this stage, there are still some problems. Addressing these problems will help accelerate the process of developing sophisticated quality management system of the case hospital, provide better quality of health care services to patients, enhance patients' trust in and increase their satisfaction with the hospital.

4.6.1 Increase leadership commitment and the quality awareness of all staff.

The interviews revealed that the case hospital's TQM implementation was still hindered by such problems as insufficient leadership attention, loose management, low awareness and unclear objectives. Improving the effectiveness of TQM implementation in the case hospital requires increased leadership attention. First, clear goals should be set to drive actions. According to the scale, professional and technical level, talent level, software and hardware facilities and other characteristics of the case hospital, the various health care quality management objectives and standards should be sorted and classified according to the degree of impact on health care quality management. On this basis, a strategic plan for health care quality management in alignment with the status of the case hospital should be formulated to lead the implementation of its health care quality management. Second, measures should be taken to strengthen health care quality management. The Quality Control Department was responsible for health care quality management in the case hospital. But the Quality Control Department was led by the executive vice president in charge and was thus parallel to other departments. This led to problems such as poor communication and insufficient deterrence against other business departments in the health care quality management process. Seen from the perspective of functional positioning, the authority of the Quality Control Department should be enhanced by moving it up on the ladder of hierarchy in the hospital's organizational structure. The president should be directly in charge of the Quality Control Department to improve its authority and achieve better management. Third, improve the capacity of the leadership. The leadership

should further improve its understanding of the importance of health care quality management, enhance its ability to control the overall situation, strengthen the management of health care quality management activities in the Quality Control Department and business departments. Meanwhile, it should also enhance its ability to use quality management tools and facilitate the formation of a good atmosphere in which everyone participates in and pays attention to health care quality management in a top-down manner. Fourth, increase awareness. TQM is a management theory based on and emphasises the participation of all staff. In the case hospital's TQM implementation process, there is a lack of awareness among the leadership team as well as the staff, which to a certain extent restricts TQM implementation. All staff should be made aware of the important role of TQM implementation through training or publicity, so that all staff can clearly understand the important roles they play in the quality management system, prevent any misunderstanding and strive to build a good atmosphere of unity and cooperation throughout the hospital. Fifth, strengthen the comprehensive management. Health care quality management is a systematic project significantly related to the competency level of healthcare workers, instruments and equipment, scientific research capabilities and management capacity, in which leadership occupies a leading role. The hospital leadership should co-ordinate the hospital's health care efficiency, cost control, service attitude, staff quality, health environment, facilities conditions, cost levels and other aspects of work from the hospital's overall perspective to facilitate the overall development of the hospital.

4.6.2 Strengthen system development to enhance implementation effects.

The interviews showed that the case hospital had established a relatively sound health care quality management framework system in the TQM implementation process. But there were still problems such as the lack of focus and poor implementation of some health care quality management systems. In view of this, first, the case hospital's health care quality management systems should be reorganised. Those that are out of date and out of order should be abolished in time; those that have lagged behind should be revised in time; and those that do not make sense or are not well targeted should be refined and detailed in time, so as to effectively improve the relevance of the system. Second, the training related to the understanding and application of the system should be strengthened. The Quality Control Department should take the initiative to explain and provide training on the various health care quality management systems. In this way, not only can all hospital departments understand the significance and role of implementing a certain system, but they will also be able to understand the normative processes and standards

for implementing the system, so as to prevent the departments from having a deviation in understanding and implementation of the system. Specifically, training on the system can be carried out in stages within the hospital, with those who have developed the system taking turns to give lectures to deepen the understanding of those who implement the management content. Besides, for newly added or modified management systems, the form of directly sending documents or QQ messages should be changed. Instead, meetings at different levels can be held to interpret those systems to ensure that the target audience can grasp them. Third, a continuous improvement mechanism should be established. The traditional ex post health care quality management monitoring mode should be changed, which a continuous improvement mechanism for modern health care quality management should be established. Ex-ante, interim and ex-post monitoring should be strengthened. In particular, in the process of ex-post supervision, a profoundly analysis of the loopholes in quality management should be made to identify the causes of health care quality problems, the harm caused, and the losses brought to the healthcare institution, which will then be reported to the quality management system. Meanwhile, an in-depth analysis will be made as to how to effectively avoid the recurrence of similar incidents to continuously improve the quality management system and provide better health care services to patients.

Considering the reality of the case hospital, one aspect of effort is to perfect the rules and regulations. Particularly, the supervision and implementation of the rules and regulations should be strengthened, which is a necessary condition for ensuring the inertial running of the hospital system. Firstly, an organizational system for hospital quality management and improvement at hospital and departmental levels should be established with health care service quality as the core, standardised management as the yardstick, quantitative scoring as the method, and centralised management as the approach. Secondly, a number of health care quality assessment groups should be established for medical, nursing, logistics and comprehensive departments, combining the assessment results with the distribution of benefits, and adopting a combination of random and regular assessment to supervise the implementation of the health care quality management system mechanism in each department of the hospital, forming fixed assessment indices to ensure that the system related to health care quality management is implemented and put into practice. Third, an information feedback system should be established. Under the system, relevant functional departments such as the Quality Control Department, Medical Department and Nursing Department should report health care quality supervision and inspection of each department to the relevant committees and clinical departments through the information system. Then each committee summarises the resolution and key issues being

submitted to the Hospital Quality and Safety Management Committee, which makes decisions on the data provided and the quality situation of the hospital. Fourthly, a monitoring mechanism participated by all staff should be established. The case hospital can take the Quality Control Department as a unit. In addition to daily monitoring and inspection by the Quality Control Department, the quality control teams should also conduct random checks on each other from time to time; hospital staff should be encouraged to report poor implementation; and mutual assessment of health care quality management implementation should be made to maximize management effect and prevent inconsistency in the level of commitment.

4.6.3 Strengthen team building and enhance professional management.

TQM implementation must be supported by a high quality health care quality management team. From the composition of the Quality Control Department of the case hospital, there was only one professional health manager out of the five members of the department, which would affect the professionalism of the health care quality management of the case hospital to a certain extent. In view of this, the case hospital should follow the "two-legged" thinking. On the one hand, it should introduce professional managers to optimise the staff structure of the Quality Control Department to build a professional health care quality management team and appropriately increase the size of the Quality Control Department so as to lay a solid foundation for a "comprehensive quality control" pattern. On the other hand, given the size of the hospital and the limitations of the hospital platforms and institutional establishment, there are certain difficulties in introducing professional managers. To address this predicament, the quality of the staff of the Quality Control Department can be enhanced by strengthening the training of talents. Specifically, full-time quality control managers can be sent to relevant higher education institutions to receive systematic training in health care quality management and learn advanced concepts of modern quality management to update and optimise quality management thinking and improve their health care quality management capabilities. Meanwhile, experienced quality control management experts can be invited to conduct timely quality management training to strengthen the learning of modern quality management knowledge. Quality control staff can also be rotated to medical departments by means of rotational training, which will help them gain a comprehensive understanding of the operation of each department and the current situation of health care quality management, so that they can fully grasp the situation of other departments to better carry out health care quality management. Quality control managers can also be sent to higher level hospitals or model hospitals of the same level on secondment to learn from the advanced experience of other hospitals in health care quality management, so as

to gain insights and experience in the process of mutual learning.

4.6.4 Strengthen teamwork to stimulate work vitality.

TQM implementation is a systematic project that involves all departments and offices of the hospital. So, it is important to strengthen system collaboration. In the TQM implementation of the case hospital, only a broadcast system was established; and an effective co-ordination mechanism was not established, resulting in unclear functions and tasks among departments, leading to departments passing the bulk. To address this problem, firstly, a sound coordination mechanism should be established to ensure the frequency of communication between departments through regular joint departmental meetings and communication activities to ensure that departments understand each other's functions and coordinate with each other to facilitate effective communication between departments and stimulate departmental vitality. Secondly, the coordination and cooperation between the Quality Control Department and the hospital departments should be strengthened. The Quality Control Department should regularly go into each department to introduce quality management work and recommend quality management tools to enhance the importance each department attaches to the Quality Control Department and deepen mutual understanding and support. In this process, the Quality Control Department can also more clearly understand the quality management problems and status in each department to formulate improvement measures more accurately. Third, the development of information technology should be strengthened. An information communication and feedback mechanism between various departments should be established to achieve the accurate transmission of relevant health care information. Particularly, for some major health care quality problems and major hidden problems, timely feedback through the information system can help ensure that the various departments of the hospital achieve information interchange and resource sharing.

4.6.5 Put patients first and increase doctor-patient communication.

Interviews with staff of the case hospital showed that the case hospital had not done well enough in TQM implementation regarding patient-centredness, and there were problems such as poor communication and poor service awareness. Firstly, the quality training of healthcare workers should be strengthened, with emphasis on strengthening medical ethics. Efforts should be made to guide healthcare workers to firmly establish the concept of patient-centredness, enhance the degree of patience and attentiveness of healthcare workers in communicating with patients, help healthcare workers master correct and effective communication skills, focus on the objective

feelings of patients, continuously enhance the efficiency of doctor-patient communication, thus building harmonious doctor-patient relationships. Secondly, service awareness should be enhanced. In their daily work, healthcare workers need to put aside their own sense of superiority and put themselves in the shoes of the patients to meet the patients' reasonable and legitimate needs and answer their questions. Particularly, they should answer the questions patients are concerned about in a timely, patient and accurate manner; patients' opinions should be sought regarding the treatment plan; doctors should inform patients the risks in the treatment process as well as the treatment effect to establish an equal relationship of mutual trust with the patient. Third, attention should be paid to listen to patients' opinions. In the health care quality management process, it is often difficult to identify existing problems from the hospital's perspective because the hospital is in the puzzle itself; however, if hospital managers take the patients' perspective and put themselves in the patients' shoes, they may find some problems that need to be addressed and that have been overlooked. Therefore, in the hospital quality management process, hospital managers should pay attention to the role of patients, listen carefully to patients' opinions and ideas, and gain an in-depth understanding of the problems that exist in each aspect of the hospital's health care quality management process and the key control points in the patient's access to care from the patient's perspective. On this basis, they can formulate reasonable solutions to ensure that each aspect of health care quality management achieves the desired effect. Fourth, the treatment environment should be optimised. Such measures can be taken as the establishment of a "green channel for emergency medical treatment", escort service for critically-ill patients throughout the examination, payment, medication collection and hospitalisation, establishment of pre-hospital emergency teams, establishment of a "call system for empty nest families", establishment of simple outpatient clinics and convenient pharmacies, and implementation of a one-stop service for pricing and charging to reduce the waiting time for patients. Fifth, patient-centred and humanised services can be implemented. Specialist clinics on holidays and double holidays, night clinics and emergency clinics can be provided; consistent follow-up visits to discharged patients should be stuck to; a network of outpatient laboratory test sheets should be set up; a president's mailbox can be set up to respond to patients' opinions in a timely manner.

4.6.6 Strengthen education and training to enhance business capabilities.

Interviews revealed that although a range of training activities had been conducted, they had focused mainly on operational training and related skills training, and not much on quality management specifically. As clinical and medical laboratory departments were at the heart of

health care quality management, training of different scales and forms could be conducted to enhance the development of quality management concepts and transform the inherent awareness of healthcare workers.

Firstly, hospitals should organise special training activities on health care quality management and hold regular training courses on the role, value and significance of quality management and the use of quality management tools. Such training sessions should not only include the Quality Control Department but also extend to all hospital staff to help them attach importance to quality management and form a pattern where quality control is participated by all staff.

Secondly, health care quality management culture and quality management knowledge training should be integrated into professional skills training. Before each training session is carried out, a training programme should be developed based on the actual situation through adequate research to determine the training content and training targets. The contents of the training include, but are not limited to, theoretical knowledge of quality management, practical experience, the use of quality management tools and operational skills; training can be conducted at different levels, from the leadership to Quality Control Department to business departments to gradually cover all staff, and the focus of training at different levels should be differentiated. For example, training for the leadership should focus more on how to understand and manage; training for the Quality Control Department should focus on the implementation, supervision, evaluation and improvement of management; and training for all staff should be conducted with a focus on awareness, value and significance as well as operational details. Through long-term systematic quality culture training, the quality management awareness of all hospital staff will be further enhanced, thus providing a guarantee for the continuous improvement of health care quality.

Thirdly, exchange and learning for quality managers. The case hospital should support quality managers to participate in industry exchange meetings, forums and seminars organised by health and industry departments to enhance communication between healthcare workers of different healthcare institutions and to enrich and improve their professional knowledge.

Fourthly, an evaluation mechanism for training effectiveness should be established. During the training process, the focus should be on the control of the training order. In principle, no leave or absenteeism or late arrival should be allowed; during the classroom, the participants can be kept attentive through questions and other means; and after the class, the trainees' mastery of the management content can be randomly checked by means of random on-site assessment to monitor the cognitive level of the target group at any time.

4.7 Implications from the TQM implementation of the case hospital

With the rapid development of China's economy and society, Chinese people's demand for high-quality health care services is increasing, and the contradiction between health care quality and the needs of the public is increasingly prominent. In particular, hospitals at the county level are closest to the public. Their level of health care quality management directly reflects the medical condition of China's grassroots hospitals. In addition, in recent years, various types of hospitals have been emerging. The competition between hospitals has become intense. Hospitals that wish to stand out in the fierce competition must continue to improve their health care quality management and create their own distinctive advantages to win the trust and support of the public. Meanwhile, improved health care quality management can also lead to higher-quality health care services for patients and effectively improve the quality of life of residents. This study proves that the TQM theory is applicable to health care quality management in county-level hospitals. Nevertheless, as there are few cases about the application of TQM in county-level hospitals, there are still some problems. This study also provides an evidence-based solution for relevant problems. Overall, TQM has shown strong vitality and effectiveness in the health care quality management of county-level hospitals and can be used as an important reference theory for county-level hospitals to improve their health care quality management. The findings of this study also bring some insights to other county-level hospitals in applying the TQM theory.

4.7.1 Leadership commitment is an important prerequisite for TQM implementation.

Quality management has become a top priority for senior leaders and a decisive factor in the successful management of an organisation. No company has ever achieved a leap in quality without leadership commitment (Juran, 1989). Senior leaders hold the core power of the organization, and the leadership they possess helps the organization set management strategies and drive their effective implementation (Greenberg & Baron, 2003). Organizational change depends on the leadership and support of management, and these factors are important for the successful implementation of quality management. In a cross-disciplinary study, Waldman et al. (1998) identified a strong link between leadership and the quality improvement process. Specifically, the stronger the leadership, the better the improvement, and vice versa. This study also demonstrates that leadership can directly influence an organization's commitment to quality improvement. Weiner et al. (1997) and others found in a survey of 2,193 community

hospitals that the involvement of senior executive leadership, including hospital management and boards of directors, enhanced the effectiveness of hospital quality management and improved the quality of health care services. In addition, Bradley et al. (2001) also found that administrative support and leadership attention contributed to improved outcomes in acute myocardial infarction. Ryan (2004) found that visionary leadership was an important contributor to quality of care. Therefore, the role of senior leadership must be given high priority in the use of TQM in county-level hospitals to improve health care quality management.

The effectiveness of health care quality management often depends on the top leadership. To some extent, health care quality management can be seen as a "top leadership-dominated project". Leadership commitment in health care quality management is not just a matter of setting targets and creating an atmosphere, while pushing other specific tasks to lower levels. Instead, senior leaders should be involved in all aspects of health care quality management, taking on a range of roles and playing an important role themselves. Senior leadership can be a positive contributor to the development of quality planning, the work of the quality control department and the development of training (Froschauer & Lueger, 2020; Lee et al., 2013).

Firstly, senior leadership should place greater emphasis on foundational structures. As hospitals place increasing emphasis on health care quality management, they must establish a dedicated quality management organization to support the implementation, evaluation and improvement of health care quality management activities. Most scholars have found though research that TQM implementation in hospitals necessitates the establishment of appropriate management organizations (Flynn et al., 1994; Macinati, 2008; Miller et al., 2009; Saraph et al., 1989). Therefore, a health care quality management department should be seen as a variable and evolving tool for improving health care quality management in hospitals. It is therefore important to implement TQM in county-level hospitals and to establish a dedicated health care quality management department responsible for health care quality management activities. It is recommended that the quality management department be directly managed by the hospital president, which not only demonstrates the importance of the quality management department but also helps the quality management department to implement all quality management requirements. The main responsibilities of the quality management department should be clarified. Specifically, the responsibilities should include development of a quality management system, implementation of quality management activities, inspection of the implementation of quality management in each department, evaluation of the effectiveness of quality management activities in each department and continuous improvement. Meanwhile, senior leaders should attend meetings of the quality management department and convey to their subordinates the

importance that the senior management attaches to health care quality management through their own actions. They should personally review and approve relevant systems and plans on quality management to enhance their authority; they should take the initiative to receive targeted training on health care quality management, accept new management concepts, and constantly update their management philosophy; they should formulate strategic plans on health care quality management. All these should be the responsibilities of health care quality management that should be taken by the top leaders of the hospital.

4.7.2 Teamwork is the basic guarantee for TQM implementation.

Kennedy et al. (1999) found that the lack of teamwork and senior leadership commitment resulted in limited TQM implementation. Other scholars have found that teamwork has a significant impact on the effectiveness of TQM implementation (Cohen et al., 2008; Duggirala et al., 2008a; Salaheldin & Mukhalalati, 2009) and that the health of the organization depends on all employees being motivated to provide the best possible service (Penzer, 1991). Therefore, the implementation of TQM in county-level hospitals should give due importance to the role of teamwork.

Firstly, it is important to create a good atmosphere of teamwork and to clarify the working responsibilities of each team to create a good and harmonious atmosphere. Besides, efforts should be made to strengthen the training of the staff on quality awareness, professional ethics, quality methods and the use of quality tools, thereby enhancing the awareness of the staff on quality management.

Secondly, a coordination mechanism should be established. A coordination mechanism is an effective policy tool to ensure teamwork. It can ensure effective linkage and orderly operation in the event of an emergency. Besides, modern hospital development requires hospitals to attach great importance to human resource management, and the competition among hospitals is ultimately the competition of talents. To implement TQM effectively, county-level hospitals should strengthen the introduction of professional quality managers, increase the size of the quality control department, and enhance the professionalism of management; each business department should also try to allocate full-time quality managers to be responsible for its quality management to form a benign situation in which the quality control department is the main department and all departments cooperate.

Third, an incentive mechanism should be established. At the teamwork level, hospitals can hold health care quality management evaluation activities according to reality, quality tool use

competitions, quality theory sharing and exchange sessions in light of the key tasks of hospital health care quality management, to stimulate competition and a sense of honour among quality project teams. At the individual level, hospital managers can cooperate with the human resources management department to convert the performance of staff participation in health care quality improvement into assessable and evaluable achievements and give those top achievers priority in the evaluation of titles, job promotion and overseas training.

4.7.3 Quality training is the source of motivation for TQM implementation.

Training and education are key to successful TQM implementation (Talib & Rahman, 2010). Karuppusami and Gandhinathan (2006) identify training as an important practical dimension of TQM implementation, and training plays an important role in TQM implementation (Agus, 2001). With the continuous development of health care quality management, new health care quality management theories and quality management tools are emerging. In the process of TQM implementation, county-level hospitals need to continuously learn the innovative theories of TQM and master the practical tools of TQM, which is a key factor for the long-term success of TQM implementation. The multi-level, multi-topic and multi-faceted training will enable all hospital staff to gain a deeper and more comprehensive understanding of the importance, value and meaning of TQM and health care quality management and will also increase the enthusiasm of all hospital staff to participate in health care quality management activities.

Currently, the insufficiency of human resources is a common problem faced by county-level hospitals. In view of this, the design should be strengthened in training, and a rotational training approach should be adopted to ensure that every employee receives quality training; in terms of financial guarantee, quality training cost should be included in the annual budget; as to training content design, education plans should be formulated scientifically based on effective collection of information on staff needs, and training content should be designed carefully, so that special quality management training can be carried out. Alternatively, quality management training can be integrated into daily business skills training to increase the proportion of quality training in hospital training; regarding training effect evaluation, an appropriate evaluation mechanism should be established, and the training participation rate, training attendance rate and training conversion rate should be taken as important aspects of the performance assessment of hospital staff to enhance staff's initiative to participate in training.

In general, in the modern era featured by rapid advances in medical technology, county-level hospitals that wish to maintain a competitive advantage in the healthcare sector must

regard staff education and training as a top priority and focus on human resources development. Only when staff obtain high-quality training, can they improve knowledge and skills to meet the needs of patients and ultimately ensure the realization of the hospital's overall business strategy.

4.7.4 Patient-centredness is a core element of TQM implementation.

Dow et al. (1999) identified customer focus to be a significant contributor to organizational performance; the IS09001 international quality management standard also states that "organizations depend on their customers and therefore should understand current and future customer needs" (Mande, 2014, August 25). Patient-centredness emphasises the extent to which hospitals can satisfy their patients and how they can gather information from customers to make timely quality improvements. As patients become more aware of their rights, more and more customers want to receive quality service during their hospital visits. Therefore, county-level hospitals must firmly establish the concept of "patient-centredness" in their implementation of TQM to improve health care quality.

Firstly, hospitals should optimize and simplify the process of medical treatment, including appointment, payment and handling of procedures as far as possible to make it convenient for customers; secondly, healthcare workers should master the correct communication skills and be patient and meticulous; thirdly, hospitals should strengthen the development of systems to protect customer rights and privacy as well as the corresponding punishment and incentive mechanisms to regulate and restrain the behaviour of the healthcare staff; fourthly, a dedicated doctor-patient relationship department should be established to deal with doctor-patient disputes in a timely manner; fifthly, patients' opinions should be carefully collected. The problems of the hospital should be understood from the perspective of patients, and the complaints and suggestions of patients should be used rationally and accepted seriously to improve or reorganise the relevant processes in order to better meet patients' requirements and even exceed their expectations (Zhou, 2003).

4.7.5 Continuous quality improvement is an important support for TQM implementation.

Continuous quality improvement is an important contributor to TQM implementation of TQM. As Wilson and Collier (2000) and Kaynak (2003) have found, continuous quality improvement can help improve organizational performance. Sound health care process management requires that patients move smoothly along the value chain in one direction during the consultation

process, shorten all kinds of stops and repetitions, avoid ineffective or even harmful links and phenomena in the system as far as possible so as to achieve cost and time advantages (Zhou, 2003).

In the TQM implementation process, county-level hospitals should pay particular attention to continuous quality improvement. Firstly, county-level hospitals should adhere to the "prevention-oriented" philosophy and strictly control the quality of every link and operation in healthcare services to ensure that problems affecting quality are kept to a minimum; secondly, a system for continuous quality improvement should be developed to implement quality management activities and health care service activities in accordance with standardised operational norms. In this process, some key aspects and key points that may easily lead to quality problems should be identified, and feedback should be given in a timely manner to achieve timely improvement; thirdly, a feedback mechanism should be opened up to establish a circular mechanism of staff - department - quality control department - hospital-level leadership - quality control department – staff. Timely feedback should be given to problems identified, and corresponding quality improvement measures should be identified after feedback in a timely manner; fourth, the key points of continuous quality improvement are often the links between processes. It is necessary to pay attention to managing the "links" between departments in the process.

4.8 Summary

This chapter analysed the interview data of the 32 interviewees with MAXQDA software, discussed the data analyses results, clarified the status and problems of health care quality in the case hospital, proposed specific measures to address the problems in the case hospital based on evidence. On this basis, the empirical insights on the use of TQM for health care quality management in county-level hospitals are presented with reference to TQM implementation in the case hospital. Based on the analysis results, the case hospital mainly focused on five dimensions to strengthen and improve its health care quality management, including leadership commitment, continuous quality improvement, patient-centredness, teamwork and quality training, which are basically identical with the dimensions of TQM in health care quality management practice. However, this study further highlights the role of the patient-centredness dimension, which distinguishes itself from the division of TQM dimensions in other fields.

[This page is deliberately left blank.]

Chapter 5: Conclusions and Prospects

5.1 Conclusions

This study takes a county-level hospital in Zhejiang Province as case and examines the status of its health care quality management using the TQM theory through in-depth interviews. The following research findings are obtained.

First, this study verified that the TQM theory can be effectively applied to health care quality management in county-level hospitals. The results of the interview-based case study showed that the TQM theory can be effectively applied to improve the health care quality management of county-level hospitals, fully demonstrating that county-level hospitals can apply the TQM theory to health care quality management activities.

Second, this study identified the problems of the case hospital in applying TQM theory to health care quality management, including insufficient leadership commitment, inadequate team building, inadequate system building, insufficient awareness of health care quality management, poor teamwork, insufficient patient-centredness and inadequate education and training, and made evidence-based recommendations related to optimising the TQM implementation in the case hospital.

Third, in view of the status and existing problems of TQM implementation in the case hospital, implications for TQM implementation in other county-level hospitals were discussed. Specifically, for TQM implementation in county-level hospitals, leadership commitment is an important prerequisite; teamwork is the basic guarantee; education and training are the source of motivation; establishing patient-centredness is a core element; and continuous quality improvement is an important support. The above insights can serve as a reference for county-level hospitals to identify their focuses in TQM implementation.

5.2 Implications

This study takes into account the health needs of the Chinese people in the new era and chose a county-level hospital closest to the public's needs as the case. It considers not only the rising health needs of the people in the context of China's rapid socio-economic development but also

the specific reality of health care quality management in Chinese county-level hospitals. On the one hand, this study clarifies the meaning and dimensions of TQM in health care quality management. On the other hand, it uses in-depth interviews to clarify the status of the case hospital in application of the TQM theory to health care quality management. The study can provide a reference for other county-level hospitals to carry out health care quality management.

5.2.1 Extension of research scope

Existing literature suggests that the TQM theory is mostly applied in industry and construction sectors. Although it has been introduced in the healthcare sector, the research topic is mostly focused on macroscopic organizational management, and the samples are mostly large-scale tertiary hospitals. In comparison, few studies have focused on county-level hospitals, and the research methods adopted are mostly quantitative, trying to obtain information about the problems of TQM implementation from large sample data and to propose corresponding coping strategies. The TQM theory is a widely applicable management theory, and practice has proven that it can be used to improve health care quality management efficiency and effects. In the context of China's rapid socio-economic development, hospitals need to strengthen health care quality management to improve the effectiveness of medical services. In particular, county-level hospitals, as the hospitals closest to the people, directly serve the health needs of the people. Their level of health care quality management determines the effectiveness of their services. However, at present, health care quality management in county-level hospitals still suffers from problems on many fronts, such as system, staffing, management, information technology and awareness. Therefore, this thesis selects a county-level hospital in Zhejiang Province, which had already implemented TQM, for a case study, and can serve as a reference for other county-level hospitals in China.

5.2.2 Deepened theoretical research on TQM

The TQM theory is the core theory of this study. Although a wealth of research has been conducted on the TQM theory itself as well as its application, there has been a lack of clear definition of the TQM theory in existing literature, and existing studies focus on either a certain dimension or a certain direction. In this study, the connotations and elements of TQM are fully considered, and the definition and dimensions of TQM as well as the connotation and dimensions of TQM in health care quality management are clarified, with full consideration of the applicability of the TQM theory. It also evaluates the health care quality management of the

case hospital in terms of the TQM dimensions in health care quality management and examines and discusses the status and problems in health care quality management in the case hospital, which are an extension and development of the TQM theory itself.

5.2.3 Practical implications

In the context of its rapid socii-economic development, China has made important achievements in the field of health care quality management. But meanwhile, it also faces a number of problems and challenges, such as the contradiction between patients' expectations of healthcare institutions and the substandard health care quality, the new requirements for the supply of quality health care services due to the ageing population, the increasing demand for quality health care services driven by the fertility boom resulting from the implementation of the three-child policy and the increase in the number of patients suffering from multiple diseases, and the urgent need for healthcare institutions to improve health care management quality as a core support to cope with the increasing market competition. This study analysed the status of health care quality management in the case hospital using the TQM theory and demonstrated that TQM can be effectively applied to improve health care quality management in county-level hospitals, which will provide new ideas for health care quality management in county-level hospitals and meet the development needs of the times and people's urgent need for quality healthcare services.

5.3 Limitations

In the context of a market economy, competition among healthcare institutions is intensifying, and the use of the TQM theory to carry out health care quality management is receiving increasing attention from researchers. Based on existing literature, this thesis demonstrates that the TQM theory can be effectively applied in county-level hospitals to guide the improvement of health care quality management. However, due to the complexity of the research problem and the limitations of the research time, resources and ability, this thesis still has the following limitations.

First, the scope of research is limited. This study is based on a case study of hospital in Zhejiang Province, China. Twenty-seven employees and five patients from different departments of the case hospital were selected as interviewees for in-depth interviews. As the researcher was working in the case hospital, the smooth conduct of the research process could be effectively ensured. However, the depth and extensiveness of the study are limited. This is

because the interview data collected from a particular case hospital in a certain region can only reflect the status of health care quality management in that hospital. Due to the differences in the ways, means, degree of emphasis attached and implementation paths of health care quality management activities carried out using the TQM theory in different hospitals, as well as the differences in software and hardware facilities as well as development levels among hospitals, the status of health care quality management in other hospitals using TQM theory may be different from the conclusions drawn in this study. There may even be cases where the TQM theory is not applicable to health care quality management in county-level hospitals.

Second, the observation period of the case hospital is not long enough. TQM implementation is a long process, one that includes not only changes in the hospital management system, but also changes in the hospital service environment. If the changes in the hospital's health care quality during this process are only grasped through one in-depth interview, although some information can be grasped through face-to-face communication with the interviewees, such an approach focuses on the interviewees' subjective perceptions, which will to some extent affect the accuracy of research results. In addition, as the interviewer was the president of the case hospital, the interviewees might not dare to express their true views and ideas in the interview process based on their sense of awe towards the interviewer. As a result, lack of depth and authenticity of the interviews could be a limitation.

Third, examination of TQM implementation is not detailed enough. This study analysed the six dimensions of TQM. But the specific influences of each dimension on health care quality management in county-level hospitals are not explored.

5.4 Prospects

Regarding the above limitations, future researchers may further the research from the following aspects.

First, enlarge the scope of research. Future researchers may conduct studies in county-level hospitals in different economic and cultural contexts to explore whether there are differences in TQM implementation in health care quality management in county-level hospitals across regions with different economic levels and regional cultures, and to yield more vivid, richer and more convincing research results.

Second, conduct longitudinal studies. As TQM implementation is a long-term project, a longer period of time should be chosen to observe, analyse and compare the changes in the process of implementing the TQM theory to health care quality management in the case hospital,

and to collect and analyse the data collected in different time periods to obtain more scientific, objective and accurate research results.

Third, conduct studies on the specific influences of each key dimension of TQM. Six major dimensions of TQM have been identified in existing literature. This study has also supported the relevance of these dimensions in health care quality management in county-level hospitals. Future studies may further explore how each dimension influences health care quality management to guide hospital strategies.

Finally, it is hoped that this study will draw the attention of more scholars and hospitals to the positive effects of the TQM theory on improving health care quality management, inspire more scholars to conduct research in this area, and guide more hospitals to use the TQM theory to carry out health care quality management practices, with a view to producing more solid research results to promote the continuous improvement of health care quality management in county-level hospitals and continuously meeting people's increasing needs for high quality health care services.

[This page is deliberately left blank.]

Bibliography

Aagja, J. P., & Garg, R. (2010). Measuring perceived service quality for public hospitals (PubHosQual) in the Indian context. *International Journal of Pharmaceutical and Healthcare Marketing*, *4*(1), 60-83.

Adu, P. (2019). *A step-by-step guide to qualitative data coding*. Routledge.

Agus, A. (2001). A linear structural modelling of total quality management practices in manufacturing companies in Malaysia. *Total Quality Management*, *12*(5), 561-573.

Al-Ali, A. M. (2014). *Developing a total quality management framework for healthcare organizations*. Proceedings of the 2014 International Conference on Industrial Engineering and Operations Management,

Al-Ettayyem, R., & Zu'bi, M. F. (2015). Investigating the effect of total quality management practices on organizational performance in the Jordanian banking sector. *International Business Research*, *8*(3), 79.

Al-Shdaifat, E. A. (2015). Implementation of total quality management in hospitals. *Journal of Taibah University Medical Sciences*, *10*(4), 461-466.

Alaraki, M. S. (2014). The impact of critical total quality management practices on hospital performance in the Ministry of Health hospitals in Saudi Arabia. *Quality Management in Healthcare*, *23*(1), 59-63.

Allen-Duck, A., Robinson, J. C., & Stewart, M. W. (2017). Healthcare quality: A concept analysis. *Nursing Forum*, *52*(4), 377-386.

Alolayyan, M. N., Ali, K. A. M., & Idris, F. (2011). The influence of total quality management (TQM) on operational flexibility in Jordanian hospitals: Medical workers' perspectives. *Asian Journal on Quality*, *12*(2), 204-222.

Alzoubi, M. M., Hayati, K. S., Rosliza, A. M., Ahmad, A. A., & Al-Hamdan, Z. M. (2019). Total quality management in the health-care context: Integrating the literature and directing future research. *Risk Management and Healthcare Policy*, *12*, 167.

Ammenwerth, E., Ehlers, F., Hirsch, B., & Gratl, G. (2007). HIS-Monitor: An approach to assess the quality of information processing in hospitals. *International Journal of Medical Informatics*, *76*(2-3), 216-225.

Antony, J., Leung, K., Knowles, G., & Gosh, S. (2002). Critical success factors of TQM implementation in Hong Kong industries. *International Journal of Quality & Reliability Management*, *19*(5), 551-566.

Aquilani, B., Silvestri, C., Ruggieri, A., & Gatti, C. (2017). A systematic literature review on total quality management critical success factors and the identification of new avenues of research. *The TQM Journal*, *29*(1), 184-213.

Arah, O. A., Westert, G. P., Hurst, J., & Klazinga, N. S. (2006). A conceptual framework for the OECD health care quality indicators project. *International Journal for Quality in Health Care*, *18*(suppl_1), 5-13.

Arifin, J. (2017). Penguatan manajemen syariah melalui total quality managementbagi pelaku lembaga keuangan syariah di kota semarang. *At-Taqaddum*, *8*(2), 180-209.

Arumugam, V., Chang, H. W., Ooi, K. B., & Teh, P. L. (2009). Self-assessment of TQM practices: A case analysis. *The TQM Journal*, *21*(1), 46-58.

Awases, M. H., Bezuidenhout, M. C., & Roos, J. H. (2013). Factors affecting the performance of professional nurses in Namibia. *Curationis*, *36*(1), 1-8.

Bai, Y. H. (2004a). TQM 扩展阶段推行步骤 [Implementation steps for the TQM expansion

phase]. *China Comtemporary Medicine*, *10*(9), 28.
Bai, Y. H. (2004b). TQM 整合及持续推行阶段 [TQM integration and continuous implementation phase]. *China Comtemporary Medicine*, *10*(10), 29-29.
Baker, A. (2001). *Crossing the quality chasm: A new health system for the 21st century* (Vol. 323). British Medical Journal Publishing Group.
Barron, W. M., Krsek, C., Weber, D., & Cerese, J. (2005). Critical success factors for performance improvement programs. *The Joint Commission Journal on Quality and Patient Safety*, *31*(4), 220-226.
Bayraktar, E., Tatoglu, E., & Zaim, S. (2008). An instrument for measuring the critical factors of TQM in Turkish higher education. *Total Quality Management*, *19*(6), 551-574.
Bradley, E. H., Holmboe, E. S., Mattera, J. A., Roumanis, S. A., Radford, M. J., & Krumholz, H. M. (2001). A qualitative study of increasing β-blocker use after myocardial infarction: why do some hospitals succeed? *Jama*, *285*(20), 2604-2611.
Brah, S. A., Tee, S. S. L., & Rao, B. M. (2002). Relationship between TQM and performance of Singapore companies. *International Journal of Quality & Reliability Management*, *19*(4), 356-379.
Brue, G. (2006). The elephant in the operating room. *IEEE Engineering Management Review*, *34*(1), 21-21.
Bunglowala, A., & Asthana, N. (2016). A total quality management approach in teaching and learning process. *International Journal of Management*, *7*(5), 223-227.
Burhans, L. M., & Alligood, M. R. (2010). Quality nursing care in the words of nurses. *Journal of Advanced Nursing*, *66*(8), 1689-1697.
Callahan, R. F., & Gilbert, G. R. (2005). End-user satisfaction and design features of public agencies. *The American Review of Public Administration*, *35*(1), 57-73.
Carman, J. M., Shortell, S. M., Foster, R. W., Hughes, E. F. X., Boerstler, H., O'Brien, J. L., & O'Connor, E. J. (1996). Keys for successful implementation of total quality management in hospitals. *Health Care Management Review*, *21*(1), 48-60.
Chahal, H., & Kumari, N. (2010). Development of multidimensional scale for healthcare service quality (HCSQ) in Indian context. *Journal of Indian Business Research*, *2*(4), 230-255.
Chang, C. S., Chen, S. Y., & Lan, Y. T. (2013). Service quality, trust, and patient satisfaction in interpersonal-based medical service encounters. *BMC Health Services Research*, *13*(1), 1-11.
Chen, A. P., Sun, H., L., Y., & Cai, M. (2005). 持续质量改进在护理质量管理中的应用 [Continuous quality improvement in nursing:implementation and evaluation]. *Chinese Journal of Nursing,* (2), 2.
Chen, H., Liu, Y., Wang, J. S., Chen, X. H., Liang, M. H., & Zhang, Z. W. (2014). 2011 版三级综合医院评审标准设计思路与特点 [Design and characteristics of the 2011 Tertiary General Hospital Accreditation Standards]. *Chinese Health Quality Management*, *21*(1), 6-8.
Chen, H. P. (2007). *Methods and principles of educational science research*. Fujian Science and Technology Publishing House.
Chen, J., Radford, M. J., Wang, Y., Marciniak, T. A., & Krumholz, H. M. (1999). Performance of the '100 Top Hospitals': What does the report card report? A critique of how these top-rated hospitals perform compared with their nonrated peers. *Health Affairs*, *18*(4), 53-68.
Chen, X. M. (2000). *Qualitative research in social sciences*. Educational Science Publishing House.
Chen, X. M. (2008). 质性研究的新发展及其对社会科学研究的意义 [New developments in qualitative research and their significance for social science research]. *Educational Research and Experiment,* (2), 14-18.

Chen, Y., Cheng, X. L., He, Z. C., & Tang, G. Z. (2017). 《医疗质量管理办法》的亮点与局限 [Highlights and limitations of "Measures for the Administration of Medical Quality"]. *Chinese Hospital Management*, *37*(2), 27-29.

Cheng, T. C. E., & Choy, P. W. C. (2013). A study of the relationships between quality management practices and organizational performance in the shipping industry. *Maritime Economics & Logistics*, *15*(1), 1-31.

Christensen, L. B., Johnson, R. B., & Turner, L. A. (2014). *Design and analysis*. Pearson.

Codman, E. A. (1916). *A study in hospital efficiency as demonstrated by the case report of the first five years of a private hospital, Boston*. Oakbrook Terrace.

Cohen, A. B., Restuccia, J. D., Shwartz, M., Drake, J. E., Kang, R., Kralovec, P., Holmes, S. K., Margolin, F., & Bohr, D. (2008). A survey of hospital quality improvement activities. *Medical Care Research and Review*, *65*(5), 571-595.

Colton, D. (2000). Quality improvement in health care: Conceptual and historical foundations. *Evaluation & The Health Professions*, *23*(1), 7-42.

Cong, S. H. (2006). 论构建以大病保障为核心的医疗保障制度 [Focusing on the severe diseases: a new medical security system framework]. *Journal of Shanghai University of Finance and Economics*, *8*(1), 52-59.

Council of Europe. (1998). Recommendation No. R(97) 17 of the Committee of Ministers to member states on the development and implementation of quality improvement systems (QIS) in health care. *International Digest of Health Legislation*, *49*(4), 610-612.

Croxall, C. L. (2004). Michigan hospital CQI/TQM study. *The Humanities and Social Sciences*, *64*(12), 4615-4616.

Danial, Z. (2009). Effect of total quality management in determining the educational needs of critical wards nurses. *Journal of Critical Care Nursing*, *2*(3), 117-120.

Davis, R. E., Jacklin, R., Sevdalis, N., & Vincent, C. A. (2007). Patient involvement in patient safety: What factors influence patient participation and engagement? *Health Expectations*, *10*(3), 259-267.

De Souza, L. B. (2009). Trends and approaches in lean healthcare. *Leadership in Health Services*, *22*(2), 121-139.

Deming, W. E. (1950). *Elementary principles of the statistical control of quality*. JUSE.

Deming, W. E. (1982). *Quality, productivity, and competitive position*. Massachusetts Inst Technology.

Deming, W. E. (1986). *Out of crisis, centre for advanced engineering study*. Massachusetts Institute of Technology.

Deming, W. E. (1990). *A system of knolwedge*. Actionline.

Detz, A., López, A., & Sarkar, U. (2013). Long-term doctor-patient relationships: Patient perspective from online reviews. *Journal of Medical Internet Research*, *15*(7), e2552.

Dewi, H. P., Lumbanraja, P., & Matondang, R. (2015). Implementation of Total Quality Management and Interpersonal Communication in Achieving Student Satisfaction through Service Quality at Yayasan Pendidikan Islam, Miftahussalam, Medan. *International Journal of Research and Review*, *2*(6), 343-347.

Dilber, M., Bayyurt, N., Zaim, S., & Tarim, M. (2005). Critical factors of total quality management and its effect on performance in health care industry: A Turkish experience. *Problems and Perspectives in Management*, *4*, 220-234.

Djerdjour, M., & Patel, R. (2000). Implementation of quality programmes in developing countries: A Fiji Islands case study. *Total Quality Management*, *11*(1), 25-44.

Donabedian, A. (1966). Evaluating the quality of medical care. *The Milbank Memorial Fund Quarterly*, *44*(3), 166-206.

Donabedian, A. (1980). *Explorations in quality assessment and monitoring: The definition of quality and approaches to its assessment*. Ache Management.

Dong, J., & Zhang, H. Y. (2002). 医院质量管理发展现状与趋势 [Status quo and trend of quality management in hospital]. *Hospital Administration Journal of Chinese People's Liberation Army,* (12A), 26-30.

Dow, D., Samson, D., & Ford, S. (1999). Exploding the myth: Do all quality management practices contribute to superior quality performance? *Production and Operations Management*, *8*(1), 1-27.

Duggirala, M., Rajendran, C., & Anantharaman, R. N. (2008a). Patient-perceived dimensions of total quality service in healthcare. *Benchmarking: An International Journal*, *15*(5), 560-583.

Duggirala, M., Rajendran, C., & Anantharaman, R. N. (2008b). Provider-perceived dimensions of total quality service in healthcare. *Benchmarking: An International Journal*, *15*(6), 693-722.

Ehigie, B. O., & McAndrew, E. B. (2005). Innovation, diffusion and adoption of total quality management (TQM). *Management Decision*, *43*(6), 925-940.

El-Tohamy, A. E. M. A., & Al Raoush, A. T. (2015). The impact of applying total quality management principles on the overall hospital effectiveness: An empirical study on the HCAC accredited governmental hospitals in Jordan. *European Scientific Journal*, *11*(10), 63-76.

Evans, J. R., & Dean, J. W. (2003). *Total quality: Management, organization and strategy (3rd ed)*. Thompson South-Western.

Evans, J. R., & Lindsay, W. M. (2013). *Managing for quality and performance excellence*. Cengage Learning.

Fan, G. R. (2014). *Hospital quality management: Systems and procedures*. World Publishing Corporation.

Feigenbaum, A. V. (1961). *Total quality control: Engineering and management: The technical and managerial field for improving product quality, including its reliability, and for reducing operating costs and losses*. McGraw-Hill.

Feigenbaum, A. V. (1991). *Total quality control*. McGraw-Hill.

Feng, S. Q., Su, B., Zhou, Y. N., & Zhou, J. J. (2021). 湖北 11 所中医医院医疗质量管理体系调查研究 [Investigation on health care quality management system of 11 traditional Chinese medicine hospitals in Hubei Province]. *Chinese Hospitals*, *25*(10), 15-17.

Fitriani, F. (2019). Persiapan total quality management (TQM). *Adaara: Jurnal Manajemen Pendidikan Islam*, *9*(2), 908-919.

Flynn, B. B., Schroeder, R. G., & Sakakibara, S. (1994). A framework for quality management research and an associated measurement instrument. *Journal of Operations Management*, *11*(4), 339-366.

Flynn, B. B., Schroeder, R. G., & Sakakibara, S. (1995). The impact of quality management practices on performance and competitive advantage. *Decision Sciences*, *26*(5), 659-691.

Froschauer, U., & Lueger, M. (2020). *Das qualitative Interview: Zur Praxis interpretativer analyse sozialer systeme*. UTB GmbH.

Furrow, B. R. (1993). Quality control in health care: Developments in the law of medical malpractice. *Journal of Law, Medicine & Ethics*, *21*(2), 173-192.

Graham, N. K., Arthur, Y. D., & Mensah, D. P. (2014). Managerial role in ensuring successful total quality management programme in Ghanaian printing firms. *The TQM Journal*, *26*(5), 398-410.

Greenberg, J., & Baron, R. A. (2003). *Behavior in organizations: Understanding and managing the human side of work*. Pearson College Division.

Groene, O., Botje, D., Suñol, R., Lopez, M. A., & Wagner, C. (2013). A systematic review of instruments that assess the implementation of hospital quality management systems. *International Iournal for Quality in Health Care*, *25*(5), 525-541.

Gunasekaran, A. (1999). Enablers of total quality management implementation in manufacturing: a case study. *Total Quality Management*, *10*(7), 987-996.

Hansson, J. (2001). Implementation of total quality management in small organizations: A case study in Sweden. *Total Quality Management*, *12*(7-8), 988-994.

Harolds, J. (2015). Quality and safety in health care, part I: Five pioneers in quality. *Clinical Nuclear Medicine*, *40*(8), 660-662.

Hellsten, U., & Klefsjö, B. (2000). TQM as a management system consisting of values, techniques and tools. *The TQM Magazine*, *12*(4), 238-244.

Hietschold, N., Reinhardt, R., & Gurtner, S. (2014). Measuring critical success factors of TQM implementation successfully: A systematic literature review. *International Journal of Production Research*, *52*(21), 6254-6272.

Hoang, D. T., Igel, B., & Laosirihongthong, T. (2006). The impact of total quality management on innovation: Findings from a developing country. *International Journal of Quality & Reliability Management*, *23*(9), 1092-1117.

Hu, G. Z. (2007). 以开展 "医院管理年" 为契机提高医院整体管理水平 [Take unfolding "Hospital Management Year" as a turning point to elevate the level of hospital's integrating management]. *Modern Hospital*, *7*(11), 87-89.

Hu, J., Jia, L., & Yuan, J. H. (2018). 现代化医院医疗质量管理的体系建设与实践 [System construction and practice of medical quality control for modern hospital]. *Soft Science of Health*, *32*(10), 39-41.

Huang, T. (2020). *Research on the operation of medical quality management in small and medium-sized public hospitals: Taking Q Hospital in N City of Guangxi as an example* [Master's thesis]. Guangxi Minzu University.

Ibn El Haj, H., Lamrini, M., & Rais, N. (2013). Quality of care between Donabedian model and ISO9001V2008. *International Journal for Quality Research*, *7*(1), 17-30.

Imhof, M. (2012). *Malpractice in surgery: Safety culture and quality management in the hospital* (Vol. 6). Walter de Gruyter.

Institute of Medicine. (1990). *Medicare: A strategy for quality assurance*. National Academies Press.

Irfan, S. M., Ijaz, A., Kee, D. M. H., & Awan, M. (2012). Improving operational performance of public hospital in Pakistan: A TQM based approach. *World Applied Sciences Journal*, *19*(6), 904-913.

Jafari, S. M., & Setak, M. (2010). *Total quality management tools and techniques: The quest for an implementation roadmap*. Proceedings of the AGBA 7th World Congress,

Jian, X. W., & Yuan, X. S. (2003). 管理理念对医疗质量管理品质的影响 [Impact of managerial ideas on the quality of medical quality control]. *Chinese Journal of Hospital Administration*, *19*(5), 271-273.

Jiang, P., Su, Q., Dang, J. X., & Liu, Q. (2009). 不同类型的质量管理实践与企业绩效影响机制的实证研究 [An empirical research on the relationship among different kinds of quality management practices and firm performance]. *China Soft Science,* (7), 134-143.

Jones, K. J., Skinner, A. M., High, R., & Reiter-Palmon, R. (2013). A theory-driven, longitudinal evaluation of the impact of team training on safety culture in 24 hospitals. *BMJ Quality & Safety*, *22*(5), 394-404.

Juran, J. M. (1986). The quality trilogy. *Quality Progress*, *19*(8), 19-24.

Juran, J. M. (1989). *Juran on leadership for quality: An executive handbook*. McGraw-Hill.

Kanji, G. K., & Wallace, W. (2000). Business excellence through customer satisfaction. *Total Quality Management*, *11*(7), 979-998.

Kantardjieva, M. (2015). The relationship between total quality management (TQM) and strategic management. *Journal of Economics, Business and Management*, *3*(5), 537-541.

Karuppusami, G., & Gandhinathan, R. (2006). Pareto analysis of critical success factors of total

quality management: A literature review and analysis. *The TQM Magazine*, *18*(4), 372-385.
Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, *21*(4), 405-435.
Kazmierczak, S. C. (2003). Laboratory quality control: Using patient data to assess analytical performance. *Clinical Chemistry and Laboratory Medicine*, *41*(5), 617-627.
Kelley, E., & Hurst, J. (2006). *Health care quality indicators project: Conceptual framework paper.* OECD Health Working Papers, Paris.
Kennedy, M. R., Boyce, N. W., & Logan, M. E. (1999). Quality management in Australian emergency medicine: Translation of theory into practice. *International Journal for Quality in Health Care*, *11*(4), 329-336.
Khan, M., Khalid, P., Al-Said, Y., Cupler, E., Almorsy, L., & Khalifa, M. (2016). Improving reports turnaround time: An essential healthcare quality dimension. *Studies in Health Technology and Informatics*, *226*, 205-208.
Kim, C. S., Spahlinger, D. A., Kin, J. M., & Billi, J. E. (2006). Lean health care: What can hospitals learn from a world-class automaker? *Journal of Hospital Medicine*, *1*(3), 191-199.
Kim, G. S. (2016). Effect of total quality management on customer satisfaction. *International Journal of Engineering Sciences & Research Technology*, *5*(6), 507-514.
Kiruthiga, K. (2016). Major factors affecting the execution of total quality management in the construction industry in India. *Journal of Chemical and Pharmaceutical Sciences*, *9*(2), E135-E140.
Klein, D., Motwani, J., & Cole, B. (1998). Quality improvement efforts at St Mary's Hospital: A case study. *Managing Service Quality: An International Journal*, *8*(4), 235-240.
Kumar, A. S. S., & Shanmuganathan, J. (2019). A structural relationship between TOM practices and organizational performance with reference to selected auto component manufacturing companies. *International Journal of Management*, *10*(5), 99-108.
Kumar, R., Somrongthong, R., & Ahmed, J. (2016). Impact of waste management training intervention on knowledge, attitude and practices of teaching hospital workers in Pakistan. *Pakistan Journal of Medical Sciences*, *32*(3), 705.
Kunkel, S., Rosenqvist, U., & Westerling, R. (2009). Implementation strategies influence the structure, process and outcome of quality systems: An empirical study of hospital departments in Sweden. *BMJ Quality & Safety*, *18*(1), 49-54.
Kunst, P., & Lemmink, J. (2000). Quality management and business performance in hospitals: A search for success parameters. *Total Quality Management*, *11*(8), 1123-1133.
Kuo, C. (2016). Effects of total quality management implementation and supply chain management capability on customer capital. *The Joumal of Global Business Management*, *12*(2), 47-60.
Kvale, S. (2008). Qualitative inquiry between scientistic evidentialism, ethical subjectivism and the free market. *International Review of Qualitative Research*, *1*(1), 5-18.
Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. (2012). *Qualitative research: An introduction to methods and designs*. Jossey-Bass/Wiley.
Lee, D. H. (2012). Implementation of quality programs in health care organizations. *Service Business*, *6*(3), 387-404.
Lee, H. H., & Lee, C. Y. (2014). The effects of total quality management and organisational learning on business performance: evidence from Taiwanese insurance industries. *Total Quality Management & Business Excellence*, *25*(9-10), 1072-1087.
Lee, S. M., Lee, D., & Olson, D. L. (2013). Health-care quality management using the MBHCP excellence model. *Total Quality Management & Business Excellence*, *24*(1-2), 119-137.
Leigh, J. A., Douglas, C. H., Lee, K., & Douglas, M. R. (2005). A case study of a preceptorship programme in an acute NHS Trust: Using the European Foundation for Quality Management tool to support clinical practice development. *Journal of Nursing*

Management, *13*(6), 508-518.
Levtzion-Korach, O., & Israeli, A. (2005). The British Star rating system--review and its implication for the Israeli health system. *Harefuah*, *144*(12), 865-869, 909.
Li, J. F., Long, Y., & Yang, X. T. (2009). 质量管理的核心活动与基础活动——重庆制造业的实证研究 [Infrastructure practices and core practices in quality management:evidence from Chongqing]. *Nankai Business Review,* (6), 150-157.
Li, L. (2015). *Research on status of medical quality of a hospital management* [Master's thesis]. Suzhou University.
Li, S., & Jiang, C. Y. (2017). 破解医患关系难题的建构主义进路 [A constructivist approach to solving the conundrum of the doctor-patient relationship]. *Studies in Ethics,* (5), 128-132.
Li, W. J. (2008). *The research of hospital medical quality evaluation system* [Doctoral dissertation]. Huazhong University of Science and Technology.
Lin, B. (1995). Total quality management in health care: A survey of current practices. *Total Quality Management*, *6*(1), 69-78.
Liu, X. W., & Zhao, J. (2017). 医疗质量管理相关概念和工具 [Concepts and tools in health care quality management]. *Perioperative Safety and Quality Assurance*, *1*(3), 148-151.
Longtin, Y., Sax, H., Leape, L. L., Sheridan, S. E., Donaldson, L., & Pittet, D. (2010). Patient participation: Current knowledge and applicability to patient safety. *Mayo Clinic Proceedings*, *85*(1), 53-62.
Luo, Y. (2004). 医疗质量管理新思维 [New thinking od health care quality management]. *Modern Hospital Management*, *2*(4), 1-3.
Ma, X. M. (2022). 《医疗质量管理办法》 中医疗质量概念及相关问题探讨 [Discussing the definition of medical care quality and related problems on measures for management of medical care quality]. *Chinese Hospital Management*, *42*(3), 56-58.
Macinati, M. S. (2008). The relationship between quality management systems and organizational performance in the Italian National Health Service. *Health Policy*, *85*(2), 228-241.
McClellan, M., & Rivlin, A. (2014). Improving health while reducing cost growth: What is possible. *Engelberg Center for Health Care Reform at Brookings*.
McLaughlin, C. P., & Kaluzny, A. D. (1997). Total quality management issues in managed care. *Journal of Health Care Finance*, *24*(1), 10-16.
Mei, L., Wang, G. R., Zhao, L. B., Tian, D., Chen, Y. Y., & Huang, J. Y. (2017). 重庆市区县级妇幼保健院医疗质量管理体系评价 [Evaluation of medical quality management system in district (county) level maternal and child health care hospitals in Chongqing]. *Maternal and Child Health Care of China,* (24), 6071-6074.
Meng, Q. M., & Chang, J. H. (Eds.). (1995). *Experimental psychology*. Beijing Normal University Press.
Meyer, S. M., & Collier, D. A. (2001). An empirical test of the causal relationships in the Baldrige Health Care Pilot Criteria. *Journal of Operations Management*, *19*(4), 403-426.
Miller, W. J., Sumner, A. T., & Deane, R. H. (2009). Assessment of quality management practices within the healthcare industry. *American Journal of Economics and Business Administration*, *1*(2), 105-113.
Mitreva, E., Cvetkovik, D., Filiposki, O., Taskov, N., & Gjorshevski, H. (2016). The effects of total quality management practices on performance within a company for frozen food in the Republic of Macedonia. *Tem Journal*, *5*(3), 339-346.
Molina-Azorín, J. F., Tarí, J. J., Claver-Cortés, E., & López-Gamero, M. D. (2009). Quality management, environmental management and firm performance: A review of empirical studies and issues of integration. *International Journal of Management Reviews*, *11*(2),

197-222.
Mosadeghrad, A. M. (2003). Principles of health care administration. Dibagran Tehran, Tehran. *International Journal of Nursing Studies*, *4*(3), 69-86.
Mosadeghrad, A. M. (2013). Healthcare service quality: Towards a broad definition. *International Journal of Health Care Quality Assurance*, *26*(3), 203-219.
Mosadeghrad, A. M. (2015). Developing and validating a total quality management model for healthcare organisations. *The TQM Journal*, *27*(5), 544-564.
Mrayyan, M. T., & Al-Faouri, I. (2008). Predictors of career commitment and job performance of Jordanian nurses. *Journal of Nursing Management*, *16*(3), 246-256.
Nguyen, T. L. H., & Nagase, K. (2019). The influence of total quality management on customer satisfaction. *International Journal of Healthcare Management*, *12*(4), 277-285.
Nicolaou, N., & Kentas, G. (2017). Total quality management implementation failure reasons in healthcare sector. *Journal of Health Science*, *5*(110-113).
Nugroho, T. W., & Nurcahyo, R. (2018). *Analysis of total quality management (TQM) implementation in small medium industries.* Proceedings of the International Conference on Industrial Engineering and Operations Management, Paris, France.
Oakland, J. S. (1993). *TQM, the route to improving performance*. Butterworth-Heinemann.
Oakland, J. S. (2003). *Total quality management: Text with cases*. Butterworth-Heinemann.
Pan, W. Y., & Li, N. (2013). 全面质量管理在医院感染管理中的运用 [Total quality management applied to hospital infection management]. *Today Nurse,* (8), 169-171.
Pan, Y. H., Wu, Q. H., Hao, Y. H., Fan, H., Shan, L. H., Liang, L. B., Kang, Z., Wang, L., Hao, J. L., & Liang, Z. (2017). 基于因子分析法的医患信任危机成因研究 [Study on the causes of the crisis of trust between doctors and patients based on factor analysis]. *Chinese Hospital Management*, *37*(1), 62-65.
Park, H., Min, W. K., Lee, W. C., Park, H. S., Park, C. J., Chi, H. S., & Chun, S. (2008). Evaluating the short message service alerting system for critical value notification via PDA telephones. *Annals of Clinical & Laboratory Science*, *38*(2), 149-156.
Penzer, E. (1991). Big ideas come in small packages. *Incentive*, *165*(6), 34-39.
Permana, A., Purba, H. H., & Rizkiyah, N. D. (2021). A systematic literature review of Total Quality Management (TQM) implementation in the organization. *International Journal of Production Management and Engineering*, *9*(1), 25-36.
Prajogo, D. I., & Sohal, A. S. (2004). Transitioning from total quality management to total innovation management: an Australian case. *International Journal of Quality & Reliability Management*, *21*(8), 861-875.
Pun, K. F. (2002). Development of an integrated total quality management and performance measurement system for self-assessment: A method. *Total Quality Management*, *13*(6), 759-777.
Qin, Y. (2011). *Study on medical quality management system of Jilin Oilfield General Hospital* [Master's thesis]. Jilin University.
Rad, A. M. M. (2005). A survey of total quality management in Iran: Barriers to successful implementation in health care organizations. *Leadership in Health Services*, *18*(3), 12-34.
Raju, P. S., & Lonial, S. C. (2002). The impact of service quality and marketing on financial performance in the hospital industry: an empirical examination. *Journal of Retailing and Consumer Services*, *9*(6), 335-348.
Rakhmawati, T., Sumaedi, S., Bakti, I. G. M. Y., Astrini, N. J., Widianti, M. Y. T., Sekar, D. C., & Vebriyanti, D. I. (2013). Developing a service quality measurement model of public health center in Indonesia. *Management Science and Engineering*, *7*(2), 1-15.
Ramlawati, R. (2018). Total quality management as the key of the company to gain the comrtitiveness, performance achievement and consumer satisfaction. *International Review of Management and Marketing*, *8*(4), 60-69.

Ramseook-Munhurrun, P., Munhurrun, V., & Panchoo, A. (2011). Total quality management adoption in a public hospital: Evidence from Mauritius. *Global Journal of Business Research*, *5*(3), 67-77.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*. Sage.

Rodkey, G. V., & Itani, K. M. F. (2009). Evaluation of healthcare quality: A tale of three giants. *The American Journal of Surgery*, *198*(5), S3-S8.

Ross, J. (1993). *Total quality management: Text, cases and readings*. St Lucie Press.

Ryan, S. M. J. (2004). The spirit of leadership and a commitment to quality transform SSM Health Care System. *Journal of Organizational Excellence*, *23*(3), 15-21.

Sabella, A., Kashou, R., & Omran, O. (2014). Quality management practices and their relationship to organizational performance. *International Journal of Operations & Production Management*, *34*(12), 1487-1505.

Sainis, G., Haritos, G., Kriemadis, T., & Fowler, M. (2017). The quality journey for Greek SMEs and their financial performance. *Production & Manufacturing Research*, *5*(1), 306-327.

Salaheldin, S. I., & Mukhalalati, B. A. (2009). The implementation of TQM in the Qatari healthcare sector. *Journal of Accounting, Business & Management*, *16*(2), 1-14.

Saraph, J. V., Benson, P. G., & Schroeder, R. G. (1989). An instrument for measuring the critical factors of quality management. *Decision Sciences*, *20*(4), 810-829.

Sari, R. P., & Firdaus, A. (2018). The impact of Total Quality Management implementation on small and medium manufacturing companies. *Esensi: Jurnal Bisnis dan Manajemen*, *8*(1), 67-78.

Selladurai, R. (2002). An organizational profitability, productivity, performance (PPP) model: Going beyond TQM and BPR. *Total Quality Management*, *13*(5), 613-619.

Senthil, V., Devadasan, S. R., Selladurai, V., & Baladhandayutham, R. (2001). Integration of BPR and TQM: past, present and future trends. *Production Planning & Control*, *12*(7), 680-688.

Shea, J., & Gobeli, D. (1995). TQM: the experiences of ten small businesses. *Business Horizons*, *38*(1), 71-78.

Sheingold, B. H., & Hahn, J. A. (2014). The history of healthcare quality: The first 100 years 1860–1960. *International Journal of Africa Nursing Sciences*, *1*, 18-22.

Shewhart, W. A. (1939). *Statistical method from the viewpoint of quality control*. Department of Agriculture.

Shi, H. M. (2021). *Study on the interaction mechanism of mutual influence between doctor-patient trust and medical service quality based on patient's perspective* [Doctoral dissertation]. Jiangsu University.

Short, P. J. (1995). Total quality management in hospitals. *Total Quality Management*, *6*(3), 255-264.

Siddiqui, F., Haleem, A., & Wadhwa, S. (2009). Role of supply chain management in context of total quality management in flexible systems: A state-of the-art literature review. *Global Journal of Flexible Systems Management*, *10*(3), 1-14.

Sila, I., & Ebrahimpour, M. (2002). An investigation of the total quality management survey based research published between 1989 and 2000: A literature review. *International Journal of Quality & Reliability Management*, *19*(7), 902-970.

Sila, I., & Walczak, S. (2017). Universal versus contextual effects on TQM: A triangulation study using neural networks. *Production Planning & Control*, *28*(5), 367-386.

Sitkin, S. B., Sutcliffe, K. M., & Schroeder, R. G. (1994). Distinguishing control from learning in total quality management: A contingency perspective. *Academy of Management Review*, *19*(3), 537-564.

Song, L. L., Li, N., Xing, X. L., & Ma, X. L. (2016). 强化防范医疗纠纷意识 改进病案质量管理 [New measures of avoiding medical disputes and improving the quality of medical records management]. *Modern Hospital*, *16*(4), 558-561.

Song, Q., Cai, R., & Zhao, J. (2020). 紧密型医联体提升基层医疗服务能力的实践与探索 [Practice and exploration of the tight medical institution alliance to improve the ability of primary medical service]. *Chinese Health Quality Management*, *27*(6), 151-153, 157.

Sousa, R., & Voss, C. A. (2002). Quality management re-visited: a reflective review and agenda for future research. *Journal of Operations Management*, *20*(1), 91-109.

Srdoc, A., Sluga, A., & Bratko, I. (2005). A quality management model based on the "deep quality concept". *International Journal of Quality & Reliability Management*, *22*(3), 278-302.

Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 443–466). Sage Publications Ltd.

Su, Y. Q. (2013). 新时期委员会管理在公立医院中的应用 [The application of committee management in public hospitals in the new era]. *Hainan Medical Journal*, *24*(19), 2939-2941.

Sun, J. L., & Ma, X. D. (2021). 我国医疗质量管理与控制体系的建立与发展 [Establishment and progress of medical quality management and control in China]. *Chinese Hospital Management*, *41*(12), 47-49.

Sun, K., Li, X. M., Yu, J. X., & Zhu, H. (2017). 浙江大学及其附属医院构建医联体的实践与思考 [The practice and thinking of Zhejiang University and its affiliated hospitals to build a medical union]. *Chinese Journal of Hospital Management*, *33*(2), 113-116.

Sun, Q. Y., & Dong, C. S. (2015). 医患信任危机的 "责任意识" 分析——以吉林大学第一医院为例 [An analysis of the "sense of responsibility" in the doctor-patient trust crisis: the case of the First Hospital of Jilin University]. *Changbai Journal,* (4), 115-119.

Sun, X. E. (2011). 扎根理论在深度访谈研究中的实例探析 [Grounded theory: Theory-development in in-depth interview research]. *Journal of Xi'an Jiaotong University (Social Sciences),* (6), 87-92.

Sweis, R., Obeidat, B., & Kanaan, R. K. (2019). Reviewing the literature on total quality management and organizational performance. *Journal of Business & Management (COES&RJ-JBM)*, *7*(3), 192-215.

Sweis, R. J., Al-Mansour, A., Tarawneh, M., & Al-Dweik, G. (2013). The impact of total quality management practices on employee empowerment in the healthcare sector in Saudi Arabia: a study of King Khalid Hospital. *International Journal of Productivity and Quality Management*, *12*(3), 271-286.

T., M. X., Xu, L. Z., Luo, H. W., & Gai, R. Y. (2015). 医务人员感知医患关系, 工作满意度与离职意向的关系研究 [Medical professional perceived doctor-patient relationship, job satisfaction and turnover intention]. *Chinese Journal of Clinical Psychology*, *23*(1), 141-146.

Talib, F., & Rahman, Z. (2010). Critical success factors of TQM in service organizations: A proposed model. *Services Marketing Quarterly*, *31*(3), 363-380.

Talib, F., & Rahman, Z. (2015). Identification and prioritization of barriers to total quality management implementation in service industry: An analytic hierarchy process approach. *The TQM Journal*, *27*(5), 591-615.

Talib, F., Rahman, Z., & Qureshi, M. N. (2010). The relationship between total quality management and quality performance in the service industry: A theoretical model. *International Journal of Business, Management and Social Sciences (IJBMSS)*, *1*(1), 113-128.

Talib, F., Rahman, Z., & Qureshi, M. N. (2011). Analysis of interaction among the barriers to

total quality management implementation using interpretive structural modeling approach. *Benchmarking: An International Journal*, *18*(4), 563-587.

Taner, M. T., Sezen, B., & Antony, J. (2007). An overview of six sigma applications in healthcare industry. *International Journal of Health Care Quality Assurance*, *20*(4), 329-340.

Tari, J. J., Molina, J. F., & Castejon, J. L. (2007). The relationship between quality management practices and their effects on quality outcomes. *European Journal of Operational Research*, *183*(2), 483-501.

Terziovski, M. (2006). Quality management practices and their relationship with customer satisfaction and productivity improvement. *Management Research News*, *29*(7), 414-424.

Thomas, D. (1987). *The case-study method in psychology and related disciplines*. Taylor & Francis.

Thornber, M. (1992). A model of continuous quality improvement for health service organisations. *Australian Health Review*, *15*(1), 56-69.

Tobin, L. M. (1990). The new quality landscape: Total quality management. *Journal of Systems Management*, *41*(11), 10.

Ullah, J. H., Ahmed, R., Malik, J. I., & Khan, M. A. (2011). Outcome of 7-S, TQM technique for healthcare waste management. *Journal of College of Physicians and Surgeons Pakistan*, *21*(12), 731-734.

Veillard, J., Champagne, F., Klazinga, N., Kazandjian, V., Arah, O. A., & Guisset, A. L. (2005). A performance assessment framework for hospitals: The WHO regional office for Europe PATH project. *International Journal for Quality in Health Care*, *17*(6), 487-496.

Waldman, D. A., Lituchy, T., Gopalakrishnan, M., Laframboise, K., Galperin, B., & Kaltsounakis, Z. (1998). A qualitative analysis of leadership and quality improvement. *The Leadership Quarterly*, *9*(2), 177-201.

Wang, J. S. (2007). 中国医院质量管理新趋势 [Tendency of hospital quality management]. *Chinese Hospitals*, *11*(1), 10-12.

Wang, L. B. (2005). *Study of medical quality control* [Master's thesis]. Jilin University.

Wang, X. L., & Chen, R. (2021). Total quality management in county medical community: A case study of Lujiang County People's Hospital Medical Group. *Chinese Health Quality Management,* (11), 99-102.

Wardhani, V., Utarini, A., van Dijk, J. P., Post, D., & Groothoff, J. W. (2009). Determinants of quality management systems implementation in hospitals. *Health Policy*, *89*(3), 239-251.

Wei, Y., & Sun, X. J. (2012). 澳大利亚医疗质量管理对中国的启示 [The implications of Australian health care quality management for China]. *Medical Innovation of China*, *9*(19), 84-85.

Weiner, B. J., Shortell, S. M., & Alexander, J. (1997). Promoting clinical involvement in hospital quality improvement efforts: The effects of top management, board, and physician leadership. *Health Services Research*, *32*(4), 491.

Wen, A. Q., Chen, Y. H., Xia, W. J., Wang, Y. L., & Guo, Y. J. (2021). 中英血液安全输注管理与实践的比较 (六)——英国 NICE 输血指南和质量标准主要内容介绍 [The comparison of the managements and practices of safe administration of blood components between United Kingdom and China]. *Chinese Journal of Blood Transfusion,* (10), 1169-1174.

Westcott, R. (2005). *The certified manager of quality/organizational excellence handbook*. Pearson Education India.

WHO. (2000). *The world health report 2000: Health systems: Improving performance*. World Health Organization.

WHO. (2006). *Quality of care: A process for making strategic choices in health systems*. World Health Organization.

Wilson, D. D., & Collier, D. A. (2000). An empirical investigation of the Malcolm Baldrige National Quality Award causal model. *Decision Sciences*, *31*(2), 361-383.

Wright Jr, J. R. (2017). The American College of Surgeons, minimum standards for hospitals, and the provision of high-quality laboratory services. *Archives of Pathology & Laboratory Medicine*, *141*(5), 704-717.

Wu, J. H., & Hou, X. R. (2006). 改进服务质量的一个有效途径: 过程能力指数法 [An effective way to improve service quality: Process capability index method]. *Science and Technology Management Research*, *26*(6), 207-208.

Wu, Y. L. (2013). *On the quality management of medical treatment a case study in shenzhen guanlan people's hospital* [Master's thesis]. Northwest A&F University.

Xia, J. F. (2004). 德国 Bethlehem 医院产科的人性化护理服务 [Personalized care in obstetrics at Bethlehem Hospital, Germany]. *Modern Practical Medicine*, *16*(4), 234-235.

Xia, X. Z. (2004). 新形势下护理质量管理模式与方法进展概述 [Overview of the progress of nursing quality management models and methods under the new situation]. *Chinese Nursing Management*, *4*(2), 39-40.

Xin, Y. Q., Nie, G. M., Pn, X. L., Zhang, G. L., & Wang, Q. (2011). 我国综合医院医疗质量评价体系中的弊端 [Disadvantages of medical quality evaluation system in comprehensive hospitals in China]. *Chinese Hospital Management*, *31*(10), 21-22.

Xing, L. A., & Shang, F. (2006). 持续的医疗质量管理在提升医院品质中的作用 [Effect of continual medical quality management in promoting hospital quality]. *Chinese Nursing Research*, *20*(12), 3348-3350.

Xiong, J. J. (2015). *The relationship between quality management practices and hospital performance: Evidence from Level III hospitals in Zhejiang Province* [Doctoral dissertation]. Tianjin University.

Xiong, W., & Feng, X. B. (2011). 基于企业特征变量的质量管理实践与绩效关系的实证研究 [An empirical investigation into the relationship between QMP and performance with firm characteristics as a variant]. *Journal of Zhejiang University (Humanities and Social Sciences)*, *42*(1), 188-200.

Yan, H. Z. (2008). 医院质量管理尚处于幼年时期——构思从 QC 走向 TQM 的路线图 [Hospital quality management is still in its infancy: Conceive a roadmap from QC to TQM]. *Chinese Health Quality Management,* (01), 7-9.

Yan, Y. R., Wan, X. L., & Chen, X. J. (2017). 沟通实践与当代医患关系重构——一个哈贝马斯的视角 [Rebuilding the contemporary doctor-patient relationship from the perspective of habermas's theory of communication]. *Journal of Tsinghua University (Philosophy and Social Sciences),* , *1*(3), 171-177, 202.

Yang, C. C. (2003). The establishment of a TQM system for the health care industry. *The TQM Magazine*, *15*(2), 93-98.

Yang, D. S., Pan, H. N., Yin, X. H., Shen, Z. S., & Cheng, M. (2006). 重视医疗服务的可及性和连续性 [Pay attention to accessibility and continuity of medical serrice]. *Chinese Health Quality Management*, *13*(6), 47-49.

Yang, Q. S., Zeng, W. Y., & Lu, J. P. (2019). Application effect of PDCA in hospital medical quality management. *China Health Standard Management,* (14), 23-25.

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.

Yousuf, N. (2011). Total quality management: Do health profession educators need to be educated? *Education in Medicine Journal*, *3*(2), e65-e69.

Yu, C. L. (2015). 医疗安全不良事件发生原因分析及对策 [Causes analysis and countermeasures of medical safety adverse events]. *Chinese Journal of Clinical Rational Drug Use*, *8*(35), 166-167.

Yu, Z., & Zhang, L. (2006a). 全面质量管理及其在医院管理中的应用 [Total quality management and its application in hospital administration]. *Chinese Journal of Hospital Administration*, *22*(7), 467-470.

Yu, Z., & Zhang, L. (2006b). 全面质量管理及其在医院管理中的应用 [Total quality management and its application in hospital management]. *Chinese Journal of Hospital Administration,* (07), 467-470.

Zaim, S., Bayyurt, N., Turkyilmaz, A., Solakoglu, N., & Zaim, H. (2008). Measuring and evaluating efficiency of hospitals through total quality management: A multi-criteria data envelopment analysis model. *Journal of Transnational Management*, *12*(4), 77-97.

Zeng, X. J. (2015). *Total quality management system optimization scheme for public weiyang district county hospital of Xi'an* [Master's thesis]. Northwest University.

Zhang, G. X., & Sun, J. (2003). *New quality management studies*. Higher Education Press.

Zhang, X. L. (2014). *Cross-cultural trust interaction research between superiors and subordinates: Taking the trust interaction between German expatriate managers and Chinese employees as an example* [Doctoral dissertation]. Beijing Foreign Studies University.

Zhou, Z. J. (2003). *Hospital management*. Peking University Medical Press.

Zhu, S. H. (2014). 对市场经济背景下医患信任危机的思考 [Doctor-patient trust crisis in the market economy]. *Negative*, *5*(2), 60-62.

Zhu, S. J. (2003). 医疗质量管理发展现状及展望 [Current situation and future of medical quality control]. *Hospital Administration Journal of Chinese People's Liberation Army*, *10*(3), 204-206.

Zhu, S. J. (2008). 我国医院质量管理发展现状及展望 [The status quo and prospect of the development of hospital quality management in China]. *Hospital Directors' Forum,* (3), 4-11.

Zhu, Y. (2018). *Research on female doctor's role conflicts: Taking Y City F Hospital as an example* [Doctoral dissertation]. Jilin University.

Zhuang, Y. Z., & Huang, C. Z. (2000). *Finance, research, quality and facilities management in health care organization*. Farseeing Publishing Group.

[This page is deliberately left blank.]

Webliography

Agency for Healthcare Research and Quality. (2012, September 12). *Understanding quality measurement*. Rockville. Retrieved May 3, 2022, from https://www.ahrq.gov/patient-safety/quality-resources/tools/chtoolbx/understand/index.html

Agency for Healthcare Research and Quality. (2014, September 17). *Webinar transcript: National quality strategy webinar: Using measurement for quality improvement*. Retrieved May 3, 2022, from https://www.ahrq.gov/workingforquality/events/webinar-using-measurement-for-quality-improvement.html

American College of Helathcare Executives. (2021). *Top Issues Confronting Hospitals*. Retrieved April 30, 2022, from https://www.ache.org/learning-center/research/about-the-field/top-issues-confronting-hospitals

American Nurses Association. (2022). *Historical review*. Retrieved May 4, 2022, from https://www.nursingworld.org/~48de64/globalassets/docs/ana/historical-review2016.pdf

China's CPC Central Committee and State Council. (2009, March 17). *Opinions of the CPC Central Committee and the State Council on Deepening the Health Care System Reform*. Retrieved April 30, 2022 from http://www.ziyang.gov.cn/_ziyang/detail.aspx?id=36140

China's CPC Central Committee and State Council. (2017, September 5). *Guiding opinions on the implementation of quality improvement actions*. Retrieved May 3, 2022, from http://www.gov.cn/zhengce/2017-09/12/content_5224580.htm

China's Ministry of Health. (1989, November 29). *Notice on implementing the "Hierarchical Management Standards for General Hospitals (Trial Draft)"*. Retrieved April 30, 2022, from http://www.reformdata.org/1989/1129/5243.shtml

China's Ministry of Health. (2005, September 22). *Evaluation guidelines of the hospital management (for trial implementation)*. Retrieved May 3, 2022, from https://www.lawtime.cn/info/yiliao/guojiafg/2011092752435.html

China's National Health and Family Planning Commission. (2016, October 14). *Medical quality management measures*. Retrieved April 30, 2022 from http://www.nhc.gov.cn/fzs/s3576/201610/ae125f28eef24ca7aac57c8ec530c6d2.shtml

China's National Health Commission. (2020, October 21). *Accreditation standards for tertiary hospitals (2020 edition)*. Retrieved May 3, 2022, from http://www.nhc.gov.cn/yzygj/s7657/202012/c46f97f475da4d60be21641559417aaf/files/c0356a56ef41400ebe5ce9fd9e10f184.pdf

China's National Health Commission. (2020, October 27). *Rules for the implementation of the Accreditation Standards for Tertiary Hospitals (2020 Edition)*. Retrieved May 3, 2022, from https://wenku.suwen.cn/p-581414.html

China's State Council. (1979, July 31). *Regulations of the People's Republic of China on standardized management*. Retrieved April 30, 2022, from https://aero.nuaa.edu.cn/_upload/article/files/12/57/46a8d9c342bc8c97719f1d5725b4/78399347-82e7-4470-9a13-235fe8693385.pdf

China's State Council. (1994, February 26). *Regulation on the Administration of Medical Institution*. Retrieved April 30, 2022, from http://lawinfochina.com/Display.aspx?lib=law&Cgid=8921

China's State Council. (2016, October 25). *Outline of the program for "Healthy China 2030"*. Retrieved June 21, 2022, from http://www.gov.cn/zhengce/2016-10/25/content_5124174.htm

China's State Council. (2017, September 12). *Guiding Opinions on Quality Improvement Actions*. Retrieved April 30, 2022 from http://www.gov.cn/zhengce/2017-09/12/content_5224580.htm

Department of Medical Service Supervision of China's Ministry of Health. (2011, April 22). *Accreditation standards for tertiary general hospitals (2011 edition)*. Retrieved April 30, 2022 from http://www.nhc.gov.cn/wjw/gfxwj/201304/b98329ec713a4e8d812b23a56d13f94f.shtml

Gooch, K. (2019, March 14). *The top financial pressures facing healthcare organizations: 5 leaders discuss*. Retrieved May 1, 2022, from https://www.beckershospitalreview.com/finance/the-top-financial-pressures-facing-healthcare-organizations-4-leaders-discuss.html

Gzipwtf.com. (2021, January 7). *What are the six domains of quality?* Retrieved May 3, 2022, from https://gzipwtf.com/what-are-the-six-domains-of-quality/

Jlassi, J., El Mhamedi, A., & Chabchoub, H. (2014, November 27). *Utilité du diagramme en arbre pour la satisfaction des patients: Application dans un service d'urgence*. Retrieved June 21, 2022, from https://www.researchgate.net/publication/272999294_Contribution_a_la_conception_d%27un_systeme_d%27aide_a_la_decision_pour_la_gestion_de_situations_de_tension_au_sein_des_systemes_hospitaliers_Application_a_un_service_d%27urgence

Lalonde, M. (1974, April 29). *A new perspective on the health of Canadians*. Retrieved May 8, 2022, from https://nccdh.ca/resources/entry/new-perspective-on-the-health-of-canadians

Maher, A., Ayoubian, A., Rafiei, S., Tehrani, D. S., Mostofian, F., & Mazyar, P. (2018, September 29). *Developing strategies for patient safety implementation: A national study in Iran*. Retrieved March 28, 2022, from https://www.researchgate.net/profile/Ali-Maher/publication/327859813_Developing_Strategies_for_Patient_Safety_Implementation_A_National_Study_in_Ministry_of_Health_and_Medical_Education/links/607297cf299bf1c911c20751/Developing-Strategies-for-Patient-Safety-Implementation-A-National-Study-in-Ministry-of-Health-and-Medical-Education.pdf

Mande. (2014, August 25). *[ISO 9001] helps organization to enhance the customer satisfaction*. Retrieved May 27, 2022, from https://ngsuyasa.wordpress.com/2014/08/25/iso-9001-helps-organization-to-enhance-the-customer-satisfaction/

National Health Commission Leading Group for Performance Appraisal of Tertiary Public Hospitals. (2020, June 9). *Operation manual for performance appraisal of national secondary public hospitals (2020 edition)*. Retrieved May 3, 2022, from http://www.nhc.gov.cn/yzygj/s7659/202006/7912483be2784e2ca08a9ea4628369b8/files/2f3230f648b5454584fa7a2864ddfef0.pdf

National Health Commission of the People's Republic of China. (2016, October 14). Measures for the administration of medical quality. Retrieved June 22, 2022, from http://www.nhc.gov.cn/fzs/s3576/201610/ae125f28eef24ca7aac57c8ec530c6d2.shtml

WHO. (2007). *Performance assessment tool for quality improvement in hospitals (PATH)*. WHO Regional Office for Europe. Retrieved May 3, 2022, from https://www.cmj.org.pl/who/path_brochure.pdf

WHO. (2021, August 3). *Global patient safety action plan 2021–2030: Towards eliminating avoidable harm in health care*. Retrieved May 3, 2022, from https://www.who.int/publications/i/item/9789240032705

WHO. (2022, June 21). *Quality of care*. Retrieved May 3, 2022, from https://www.who.int/health-topics/quality-of-care#tab=tab_1

Annex A: Interview Outline

Dear friend,

thank you for participating in this interview! The purpose of this interview is to learn about the health care quality management in your hospital. I will ask you some questions, and please respond according to your real thoughts. This interview will last approximately half an hour. There is no right or wrong in the answers, and the whole process will be conducted anonymously. All the information will be kept strictly confidential. Please rest assured and answer the questions with patience. Thanks very much for your support and help!

Part 1: Basic information

1. What are your age, gender and education level?

2. Which department do you work in and what position do you hold at the hospital?
Why were you hospitalized and how long have you stayed in this hospital? (For patients)

3. How long have you been working at this hospital? (not applicable to patients)

Part 2: Basic information on health care quality management in the case hospital

4. What is your understanding of health care quality?

5. Do the hospital leaders support health care quality management activities and provide appropriate assistance and guarantee? How would you comment on the role played by the hospital leadership in the quality management process and are there any limitations and areas for improvement?

6. Has the hospital established an independent quality management department to implement, monitor and manage quality activities? If yes, is the staffing of the quality management department reasonable? Does the quality management department play its role? If so, in what ways? If not or not well, what do you think are the reasons? Are there any limitations and areas for improvement?

Is there an independent department in the hospital dedicated to dealing with health care quality disputes between patients and doctors? Are such disputes resolved in a timely manner? (for patients)

7. Is the hospital able to identify problems in the health care quality management process in a timely manner and make timely improvements? How do you comment on the continuous management in the hospital? Are there any limitations and areas for improvement?

8. How do you describe the doctor-patient relationships in the hospital? Does the hospital listen to patients' feedback and improve its quality management in a timely manner? Are there any limitations and areas for improvement?

9. Does the hospital provide quality trainings for staff? If yes, what do you think of the frequency, depth and effectiveness of such trainings? Are there any limitations and areas for improvement?
How does the hospital ensure that patients are treated in a timely and effective manner? What are the specific initiatives? (for patients)

10. Is there a coordination and teamwork mechanism between departments and staff in the hospital? Is teamwork smooth? Are there any limitations and areas for improvement?
Are you satisfied with the health care quality during this visit? Will you refer your family and friends to this hospital next time? (for patients)

11. How does the hospital protect patients' right to information and privacy? What are the specific initiatives? (for patients only)

Part 3: Opinions on and suggestions for health care quality management

11. What do you think are the factors or practices limiting or hindering health care quality management in the hospital?

12. Do you think the hospital has taken appropriate measures to improve the health care quality management process? If yes, are the measures effective? If not effective, what are the reasons?

13. What do you think should be done to improve or enhance the health care quality

management in the hospital?

Final question:

14. What else do you think should have been asked here and what is your opinion about it?