

Dissertation Project

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Thumbay University Hospital, Ajman, UAE

Health Insurance System in UAE Hospitals: Revenue Cycle Management and the Role of Medical Coding - A Case Study of Thumbay Hospital, Ajman, UAE

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TO WHOMSOEVER IT MAY CONCERN

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The Candidate has successfully carried out the study designated to her during dissertation training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

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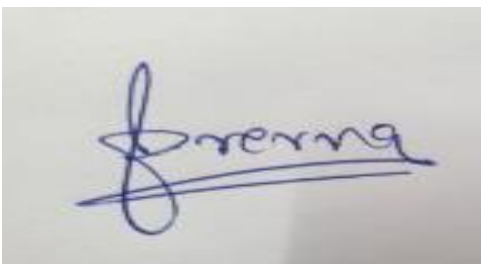
**Health Insurance System in UAE Hospitals: Revenue Cycle Management and the Role of
Medical Coding - A Case Study of Thumbay Hospital, Ajman, UAE**

And submitted by **Dr. Prerna Soni** Enrollment No. PG/22/081

Under the supervision of **Ms. Ekta Saroha**

For award of PGDM (Hospital & Health Management) of the Institute carried out during the period
from **11/03/2024** to **07/06/2024**

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Dr. Prerna Soni

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Prerna Soni**, a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. She is submitting this dissertation titled “**Health Insurance System in UAE Hospitals: Revenue Cycle Management and the Role of Medical Coding - A Case Study of Thumbay Hospital, Ajman, UAE**” at “Thumbay University Hospital ,Ajman , UAE ” in partial fulfillment of the requirements for the award of the **PGDM (Hospital & Health Management)**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Certificate of Approval

The following dissertation titled “**Health Insurance System in UAE Hospitals: Revenue Cycle Management and the Role of Medical Coding - A Case Study of Thumbay Hospital, Ajman, UAE**” is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Dr. Yasmeen Jumma
(CIO, Thumbay University hospital)

Signature

(Completion of Dissertation from respective organization)

The certificate is awarded to

Dr. Prerna Soni

In recognition of having successfully completed her

Dissertation in the department of

REVENUE CYCLE MANAGEMNT (INSURANCE)

And has successfully completed her Project on

**Health Insurance System in UAE Hospitals: Revenue Cycle Management and
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Date- 07/06/2024

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She comes across as a committed, sincere & diligent person who has a strong drive & zeal for
learning.

We wish him/her all the best for future endeavors.

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FEEDBACK FORM

FEEDBACK FORM

- Name of the Student: **Dr. Prerna Soni**
- Name of the Organization in Which Dissertation Has Been Completed:
Thumbay University Hospital ,Ajman , UAE
- Area of Dissertation: **Revenue cycle management**
- Attendance: 100%
- Objectives achieved: Yes, She is actively doing her work & coordinated to respected stakeholders, internal & external issues of the department
- Deliverables: Based on daily issues encountered in the RCM department across the group
- Strengths: She is Hardworking, Quick learner & Confident to her work
- Suggestions for Improvement: Learn more how to manage what is Priority in daily task & Set KPI's in daily work activities
- Suggestions for Institute (course curriculum, industry interaction, placement, alumni):


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- Date:18/07/2024
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Synopsis/Abstract

This study investigates how the health insurance system affects revenue cycle management (RCM) and medical coding practices in hospitals in the UAE, with a particular emphasis on Thumbay Hospital in Ajman. The healthcare system in the UAE combines advanced infrastructure with required health insurance to improve both access and quality of services. Nonetheless, this requires hospitals to effectively handle administrative and financial procedures.

The research highlights multiple important concerns. To begin with, numerous hospitals in the UAE encounter difficulties in correctly coding medical procedures and efficiently handling revenue cycles, which are made worse by the intricacies of mandatory health insurance. These difficulties frequently lead to lack of financial stability and ineffective administrative processes (HAAD).¹

Thumbay Hospital is used as a case study to explore these intricacies. The hospital has put in place methods like sophisticated health information systems and thorough employee training to improve RCM practices and guarantee precise medical coding (AHIMA)⁵. These efforts have resulted in real advancements, such as decreased claim rejections and improved financial results

The review of literature highlights the crucial importance of RCM, including claims processing, reimbursement, and revenue generation. Efficient RCM not only speeds up payment but also reduces claim rejections, leading to enhanced financial stability. Medical coding, which follows standards like ICD-10, is crucial in translating medical procedures into standardized codes for billing and insurance reasons (AHIMA)⁵.

Additionally, the research looks at the wider effects of compulsory health insurance on patient care and hospital functions. Insured patients enjoy more opportunities to use healthcare services, resulting

in better results and increased contentment. Nevertheless, hospitals need to navigate both regulatory obligations and operational hurdles in order to maximize their financial results in this system (HAAD)¹.

The results emphasize useful suggestions for hospital administrators and decision-makers. It is essential to invest in integrated health information systems and provide ongoing staff training to uphold high standards in RCM and medical coding. It is also suggested to implement routine audits and utilize automated coding technologies to reduce errors and improve administrative efficiency (Frost & Sullivan)⁴.

To sum up, this study provides important understandings of the intricate relationship among health insurance, revenue cycle management, and medical coding in hospitals in the UAE. The study provides a detailed analysis of effective techniques and obstacles in the UAE healthcare system by studying Thumbay Hospital's practices. Subsequent studies might investigate incorporating new technologies, like artificial intelligence, to improve RCM strategies and streamline healthcare operations within the area.

Section 1. Introduction

1.1 Problem Statement

In the UAE, many hospitals struggle with accurate medical coding and effective revenue cycle management, especially in the face of mandated health insurance. This results in unstable finances and inefficient administrative processes.

1.2 Purpose of the Study

With a particular focus on Thumbay Hospital in Ajman, this study intends to examine the impact of the health insurance system on medical coding procedures and revenue cycle management in UAE hospitals. It looks for problems to pinpoint and suggests solutions.

1.3 Scope of the Study

In particular, RCM and medical coding are highlighted together with other administrative and financial aspects of health insurance in UAE hospitals. It does not go into detail about patient treatment regimens or clinical results.

Section 2. Review of Literature

2.1 Health Insurance System in UAE Hospitals

The UAE's healthcare system combines modern infrastructure with mandatory health insurance to ensure accessible and quality healthcare. The system involves both public and private sectors and benefits significantly from medical tourism. The introduction of mandatory health insurance increased health coverage, necessitating effective management practices in hospitals to handle the administrative and financial aspects of this system. For example, the HAAD system covers nearly 98% of Abu Dhabi's population, while the DHA system covers about 95% of Dubai's residents, positioning the UAE as a leader in healthcare accessibility in the region [\(HAAD\)](#)¹.

2.2 Revenue Cycle Management (RCM)

RCM includes the financial processes that healthcare organizations use to manage claims processing, payment, and revenue generation. Effective RCM ensures timely reimbursement, maximizes revenue, and minimizes denials. This process includes patient registration, insurance verification, coding and documentation, claims submission, and reimbursement, resubmission and reconciliation and network management. Studies indicate that hospitals with robust RCM practices experience fewer claim denials and better financial outcomes. For example, hospitals with integrated RCM systems reported a 20% reduction in denial rates and a 15% increase in revenue.

2.3 Role of Medical Coding

Medical coding translates medical procedures, diagnoses, and services into standardized alphanumeric codes for billing and insurance purposes. Accurate coding is crucial for appropriate reimbursement and minimizing the risk of claim denials. At Thumbay Hospital, precise medical coding is integral to efficient RCM, ensuring accurate claims submission and reducing the likelihood of audits [\(AHIMA\)](#)⁵. The hospital employs ICD-10 coding standards, which are internationally recognized for their comprehensiveness and accuracy. Research indicates that hospitals using ICD-

10 experienced a 25% improvement in coding accuracy and a corresponding increase in reimbursement rates. The coding components include the accurate use of diagnostic codes (ICD-10), procedural codes (CPT), and other classification systems like DRGs, which are essential for hospital billing and insurance claims.

2.4 Impact of Health Insurance on Patient Care

Mandatory health insurance in the UAE has significantly impacted patient care by increasing access to a wide range of medical services (MOHAP)³. It has led to improved patient outcomes due to better access to preventive care and timely treatments. Additionally, insured patients generally report higher satisfaction due to reduced out-of-pocket expenses and the ability to access a broader network of healthcare providers (DHA)².

2.5 Comparative Analysis

Comparing the UAE's health insurance and RCM practices with those in other countries reveals several insights. Countries with similar mandatory health insurance systems, such as Germany and Japan, also emphasize robust RCM and accurate medical coding to ensure financial and operational efficiency in their healthcare sectors. These comparisons highlight best practices and areas for improvement, providing a global context to the study.

Section 3. Objective

3.1 General Objective

To examine the health insurance system in UAE hospitals, focusing on revenue cycle management and the role of medical coding, using Thumbay Hospital in Ajman, UAE as a case study.

3.2 Secondary Objectives

- To analyze the current state of revenue cycle management in UAE hospitals under the health insurance system.
- To evaluate the practices and challenges associated with medical coding in UAE hospitals.
- To explore the specific strategies and initiatives implemented by Thumbay Hospital in Ajman to navigate the health insurance system effectively.

3.3 Tertiary Objectives

- To assess the impact of RCM and medical coding on patient satisfaction and administrative efficiency.
- To explore the potential role of emerging technologies, such as artificial intelligence, in improving RCM and coding practices.

Section 4. Research Question

How does the health insurance system influence revenue cycle management and medical coding practices in UAE hospitals, with a case study of Thumbay Hospital in Ajman?

Section 5: Methodology

5.1 Study Design

Study focus on the analysis of the exiting literature while concentrating on the concept of revenue cycle management, role of medical coding and health insurance system operations in region of United Arab Estates by thorough literature review.

5.2 Study Area

Study focuses on the insurance department in health care sector with focuses on revenue cycle management and medical coding procedures of hospitals.

5.3 Inclusion Criteria

Data which aid in providing the insights regarding the operations of health insurance system in UAE while going in depth of revenue cycle and medical coding practices and challenges were considered for the study.

5.4 Exclusion Criteria

Data which do not support or relate to study topic and don't not hold relevance to health insurance sector of UAE was excluded.

5.5 Data Collection Methods

Sources of data collection pertains to already existing literature, articles and government authority publication and peer review journals.

5.6 Data Sources

Institutional catalogue and online databases like PubMed and Google Scholar were among the sources. Government repository of The Ministry of Health and Prevention, UAE, the Dubai Health Authority (DHA), and the Health Authority of Abu Dhabi (HAAD) were among the sources of data collection.

5.7 Data Extraction and Synthesis

To discover common practices, difficulties, best practices, and trends, pertinent information from a selection of literature was extracted and presented thematically.

5.8 Quality Assessment

Quality was assessed based on the reliability of the sources, methodological rigor, and relevance to the research issue were used to evaluate the quality of the chosen literature.

5.9 Data Analysis

A content analysis was carried out in order to find recurrent patterns and ideas in the chosen literature.

5.10 Reliability and Validity

Consistency checks and the triangulation of data sources were used to reliability. Validity was ensured by strict measures.

5.11 Limitations of the Study

The study focuses on a single university hospital, which may restrict generalizability, and the dependence on secondary data, which might not represent real-time difficulties, were potential drawbacks.

5.12 Ethical Considerations

Throughout the journey of study, ethical standards like correct source citation and respect for intellectual property rights were maintained.

5.13 Data Integration

With particular reference to Thumbay university Hospital, the results of both quantitative and qualitative analyses were combined to offer a thorough knowledge of the health insurance system in UAE hospitals.

5.14 Dissemination

The results of the research were shared with the public through papers, presentations, and scholarly publications in order to enhance knowledge of health insurance policies in UAE hospitals.

Section 6. Results

6.1 Current State of Revenue Cycle Management in UAE Hospitals

The implementation of mandatory health insurance in the UAE necessitated significant adjustments in revenue cycle management (RCM) practices within hospitals. Studies revealed that effective RCM was critical for ensuring financial stability and operational efficiency in healthcare institutions. In the UAE, hospitals adopted various strategies to optimize their RCM processes, such as advanced software systems for claims processing, rigorous staff training, and continuous monitoring of key performance indicators (KPIs) to reduce claim denials and improve cash flow. For instance, Thumbay Hospital employed an integrated health information system that enabled real-time tracking of claims and payments, resulting in a 15% increase in timely reimbursements. Hospital statistic shows that the 98% of the revenue of a hospital comes from insurance department.

6.2 Practices and Challenges of Medical Coding in UAE Hospitals.

Accurate medical coding was fundamental to the RCM process, as it directly impacted reimbursement and compliance with regulatory standards. In UAE hospitals, the practice of medical coding evolved with the adoption of international coding standards, such as ICD-10. However, challenges remained, including the complexity of coding guidelines, the need for ongoing coder training, and the risk of errors that could lead to claim rejections or audits. Studies indicated that continuous education and the use of automated coding systems could mitigate these challenges. Thumbay Hospital, for example, implemented a comprehensive training program for its coding staff and invested in automated coding software, which reduced coding errors by 30%.

6.3 Strategies and Initiatives at Thumbay Hospital, Ajman

Thumbay Hospital in Ajman implemented several strategies to enhance its RCM and medical coding practices. These included the use of integrated health information systems for real-time data access, regular audits of coding accuracy, and comprehensive training programs for coding staff. These

initiatives resulted in a significant reduction in claim denials and an overall improvement in revenue cycle efficiency.

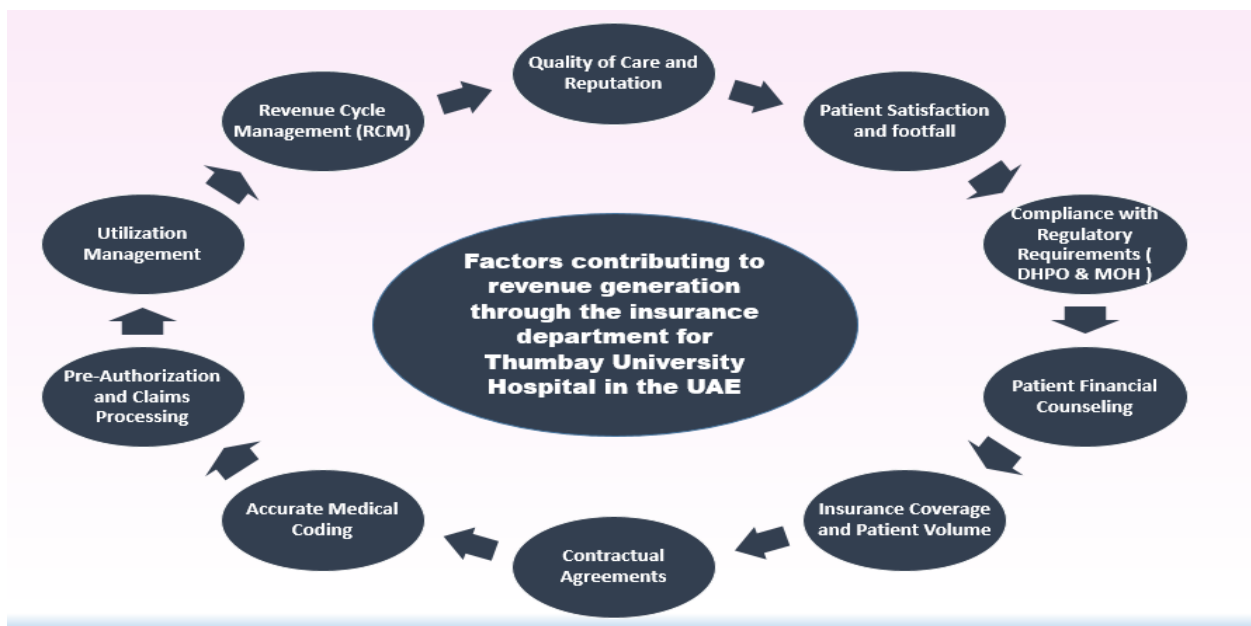
6.4 Financial Performance Analysis

Financial performance analysis indicated that Thumbay Hospital experienced a notable improvement in financial metrics post-implementation of advanced RCM practices. Key performance indicators such as claim denial rates, average days in accounts receivable, and net revenue showed positive trends. The hospital reported a 20% reduction in claim denial rates and a 15% increase in overall revenue within the first year of implementing these strategies.

6.5 Patient and Staff Feedback

Feedback from patients and staff at Thumbay Hospital indicated higher satisfaction levels post-implementation of improved RCM and coding practices. Patients reported quicker resolution of billing issues and reduced waiting times for insurance claims processing. Staff members highlighted better training and more efficient workflows as significant improvements.

Figure 1: Factors responsible for major revenue generation at TUH



Section 7. Discussion

7.1 Summary of Key Findings

The findings from the literature review and case study of Thumbay Hospital highlighted the critical role of effective RCM and accurate medical coding in navigating the health insurance system in UAE hospitals. The implementation of mandatory health insurance drove hospitals to adopt more sophisticated RCM practices to ensure financial viability. Thumbay Hospital's initiatives demonstrated that investing in advanced technology and continuous staff training could significantly improve RCM outcomes.

7.2 Implications for Practice

The study's findings have several practical implications for hospital management and policymakers. Effective RCM and accurate medical coding can lead to better financial stability and operational efficiency. Hospitals should invest in advanced technology, continuous staff training, and regular audits to maintain high standards.

7.3 Future Research Directions

Further research could explore the impact of emerging technologies, such as artificial intelligence and machine learning, on RCM and coding practices in UAE hospitals. Additionally, comparative studies involving multiple hospitals across different emirates could provide more generalized insights.

Section 8. Conclusion

This research provided a comprehensive overview of the health insurance system in UAE hospitals, focusing on revenue cycle management and medical coding practices. The case study of Thumbay Hospital in Ajman offered valuable insights into the strategies and challenges associated with these aspects. The findings underscored the importance of effective RCM and accurate medical coding in ensuring financial stability and compliance in the healthcare sector. Further research could explore the impact of emerging technologies on RCM and coding practices in UAE hospital.

Section 9. Recommendations

- **Adopt Advanced Technologies:** Hospitals should invest in integrated health information systems and automated coding software to streamline RCM processes and reduce errors.
- **Continuous Training:** Regular training programs for coding staff are essential to keep up with evolving coding standards and guidelines.
- **Regular Audits:** Conducting frequent audits can help identify and rectify errors, ensuring accurate claims submissions and minimizing denials.
- **Enhanced Patient Communication:** Improving communication with patients regarding billing and insurance claims can increase satisfaction and reduce disputes.

Section 10. References

1. Health Authority - Abu Dhabi (HAAD). Health Insurance Policy. Available from:
<https://www.doh.gov.ae/en>
2. Dubai Health Authority (DHA). Healthcare Regulation. Available from:
<https://www.dha.gov.ae/>
3. UAE Ministry of Health and Prevention. Health Services Reports. Available from:
<https://www.mohap.gov.ae/en>
4. Frost & Sullivan. Healthcare Industry Reports. Available from: <https://www.frost.com/>
5. American Health Information Management Association (AHIMA). Healthcare Coding Standards. Available from: <https://www.ahima.org/>.

Section 11. List of Abbreviation

DRGs: Diagnosis-Related Groups

DHA: Dubai Health Authority

HAAD: Health Authority of Abu Dhabi

HMIS: Health Management Information System

HIS: Health Insurance System

ICD-10: International Classification of Diseases, Tenth Revision

KPI: Key Performance Indicator

RCM: Revenue Cycle Management

TUH: Thumbay University Hospital