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3M Encoder Usability Study

NUR 660: The Human-Technology Interface



Objectives

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Introduction

What is it?

The 3M Encoder is a sophisticated software tool designed to assist healthcare providers in the accurate coding of medical diagnoses and procedures. This system is part of the larger suite of Health Information Systems offered by 3M. Its primary function is to facilitate the coding process, ensuring compliance with coding standards such as ICD-10 (International Classification of Diseases) and CPT (Current Procedural Terminology).



**Automated
coding
assistance**



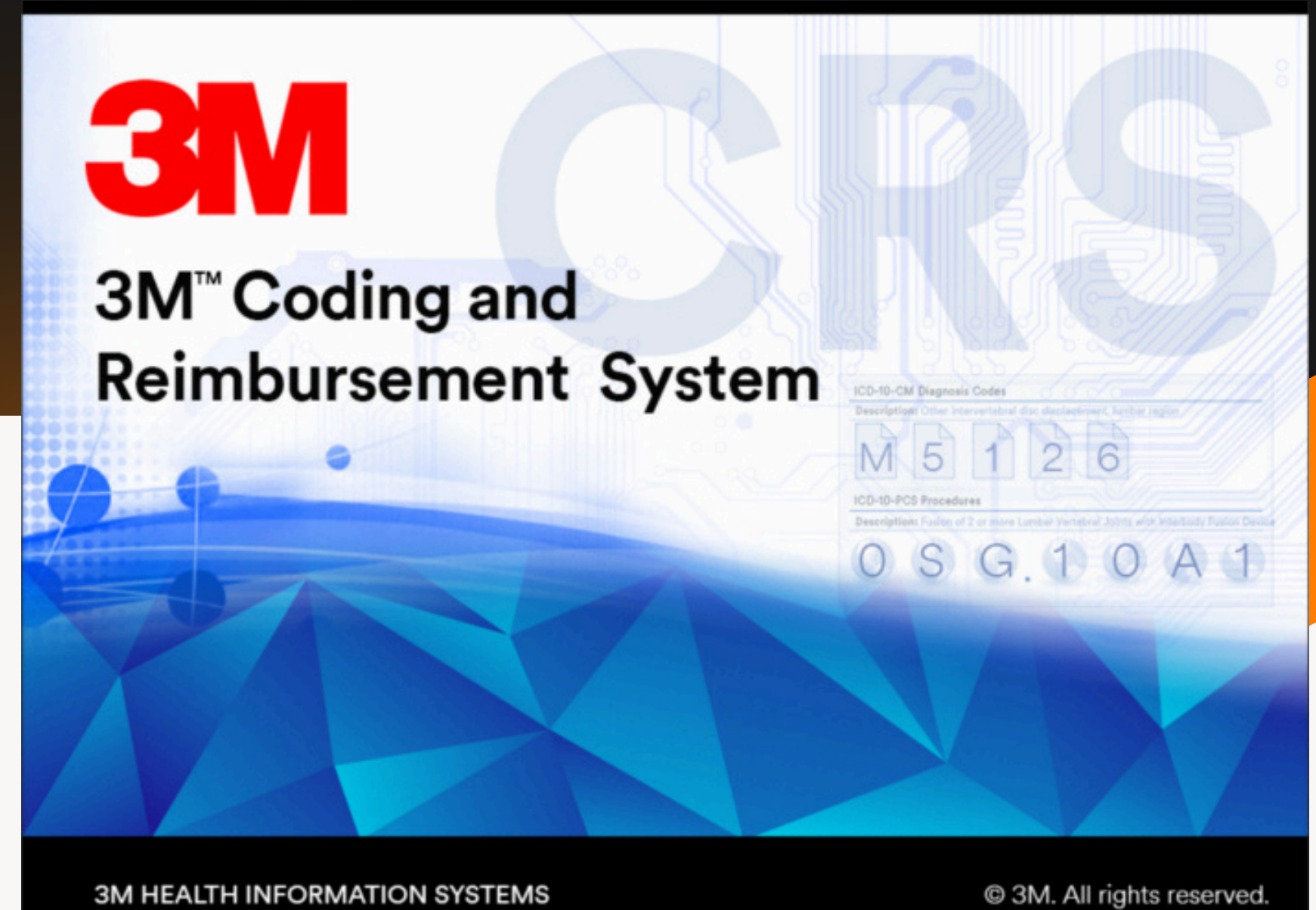
**Accuracy and
compliance**



**Integration
with EHR
systems**



**Decision
support tools**

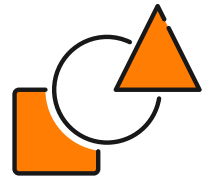


Purpose



The purpose of this usability study is to systematically evaluate the effectiveness, efficiency, and user satisfaction of the 3M Encoder system. Specifically, the study aims to identify critical usability issues and recommend improvements to enhance user experience. Addressing these concerns will contribute to better patient documentation practices.

Constraints



Participation

- ✓ Reluctance
- ✓ Additional workload
- ✓ Concerns with repercussions



Resources

- ✓ Limited number of devices
- ✓ Limited tools
- ✓ Hesitancy



Time

- ✓ Busy schedules
- ✓ Comprehensive study
- ✓ Different priorities

Human-computer interaction framework



When using the framework to evaluate the 3M's usability, the stakeholders who should be involved in the study can be identified. In this case, CDI personnel can be nurses, nurse practitioners or doctors. Coders can be also be any of those professionals who have obtained a PC certification.



Users

CDIs and coders



Task

Translation of medical care into billable codes and data entry



Technology

3M Encoder interface with Epic



Environment

Inpatient hospitalizations

Varibales and controls



User satisfaction

The primary goal of the study is to measure user satisfaction and task efficiency



Experience level

Clinicians with varying levels of experience with the 3M encoder system

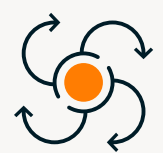


Task complexity

Simple and complex tasks to ensure diverse user scenarios

Methods

A mixed methods approach was used, combining both qualitative and quantitative methods.



Task based testing

Participants would perform predefined tasks



Survey

Collect feedback on user experience



Think-aloud protocol

Participants verbalize their thought process while completing tasks

Overview



Step 1

Task completion time

Time to complete predefined tasks is measured



Step 2

Error rate

Count the number of errors made during task performance



Step 3

User satisfaction

Use the survey to measure



Step 4

Qualitative feedback

Gather comments from users



Step 5

Usability Testing

Relate results to study purpose and identify issues



Step 6

Propose areas of improvement

Based on comprehensive assessment

Relation to purpose, constraints and framework



Purpose

The methods chosen aimed to address usability concerns by evaluating efficiency and satisfaction.

Constraints & framework

The mixed methods approach allowed for flexibility in participant data collection within the time and resource limitations. The study design incorporated user, task, environment, and technology aspects, ensuring a holistic evaluation.

Outcomes determination

The usability study of the 3M Encoder system provided valuable insights into its performance from the end-user perspective. By addressing identified issues, the study aimed to recommend targeted improvements that enhance system efficiency, reduce documentation errors, and increase user satisfaction. Implementing these recommendations will contribute to better clinical workflows and improved documentation coding and billing.



Task completion time

Calculated individually and as a group to determine system efficiency

Error rate

Also used to determine system efficiency

Survey results

Used to gauge overall user experience

Qualitative feedback

Categorized to identify common issues and specific areas of improvement

Conclusion

Usability studies are probably one the most valuable tool an Informaticist can deploy to assess and improve user satisfaction with EHR systems and their interfaces. When developed in a comprehensive manner, involving stakeholders, the study can identify root causes for substandard satisfaction and suggest improvements, preventing burn out and system inefficiencies.



Thank you!



References

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