EVIDENCE-BASED MEDICINE AS A WEB-BASED INFORMATION-SEEKING MODEL FOR HEALTH CARE PRACTITIONERS

by

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DECLARATION

I hereby declare that the thesis submitted for the D.Litt.et Phil. Degree to the RAU, apart from the help recognised, is my own work and has not been formerly submitted to another university for a degree.

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SUMMARY

The practice of medicine changes constantly and rapidly. Consequently, it is difficult for clinicians to learn about innovations, given the vast quantity of information available. Evidence-based medicine (EBM) is the process by which practitioners turn clinical problems into questions, and then systematically integrate personal clinical expertise with the best available external evidence as the basis for clinical decisions. To practice EBM, the practitioner is required to search the literature for relevant material, and then to synthesise knowledge and apply findings to each patient. Clinicians require fast and specific access to multiple data sources, but the availability of electronic full text documents has substantially exacerbated the lack of time to read the clinical literature owing to the demands of clinical practice, and is further compounded by the fact that the Web contains much health-related misinformation. Clinicians therefore require a means of searching the literature that will enhance the retrieval of accurate and evaluated clinical data from ranked resources, whereby the most relevant information is retrieved first from the most likely source. Strong correlations exist between four primary steps in EBM, and the formula commonly used in search strategy design in the field of information seeking. The similarities inherent in these steps suggest that an evidence-based approach to information seeking might enable end-users in the health professions to enhance their searching skills and to translate the clinical question into an appropriate information-seeking strategy.

A main problem and two sub-problems were investigated, namely whether:

- a Web-based EBM information-seeking model could be designed to enhance the information-seeking skills of healthcare practitioners
- it was possible to design an information-seeking model more closely aligned with the clinical decision-making model familiar to healthcare practitioners
- it was possible to design such a model in a manner that could further enhance the translation of the clinical question into an appropriate information-seeking strategy.

Various models in medicine and the domain of information seeking were investigated. It was found that the model of the clinical decision-making process accorded with all six phases of the information-seeking process (ISP), whereas other information-seeking models only addressed the ISP from the formulation of the problem onwards, thus ignoring prior stages of initiation, selection and exploration in the ISP. A Web-based EBM information-seeking model (Model C) was devised and tested for compatibility against a general Web-based

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information-seeking model, and was found to be valid. Model C was further empirically assessed against a Web site design methodology, and was again found to be compatible.

A unique approach to EBM information seeking is thus offered by Model C, which incorporates all aspects of the clinical-decision-making metaphor, as well as the “PICO” EBM filters (**P**atient/**P**roblem, **I**ntervention, **C**omparative Intervention and **O**utcome), into a facet analysis template for the design of a clinical search strategy. Prior to selection of the EBM information resource, Model C further allows for the ranking of each resource and for the design of individual browsing and/or analytical search strategies, as appropriate, so as to enhance EBM information seeking amongst healthcare practitioners.

KEYWORDS

Evidence-Based Medicine
Information-Seeking Model
Healthcare Practitioners
Web-Based Model

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TABLE OF CONTENTS

	SUMMARY	iii
1.	**INTRODUCTION**	1
1.1	BACKGROUND	1
1.1.1	Evidence-Based Medicine	1
1.1.2	Evidence-Based Learning	3
1.2	IDENTIFICATION OF THE PROBLEM	4
1.3	STATEMENT OF THE PROBLEM	7
1.3.1	Main Problem	7
1.3.2	Sub-Problems	7
1.4	RELEVANCE OF RESEARCH TO THE OVERALL FIELD OF REFERENCE	7
1.5	JUSTIFICATION OF THE RESEARCH PROJECT	10
1.6	DELIMITATION OF THE FIELD OF STUDY	12
1.7	GLOSSARY AND DEFINITIONS	12
1.8	OUTLINE OF FOLLOWING CHAPTERS	13
2.	**REVIEW OF THE LITERATURE OF EVIDENCE-BASED MEDICINE AND INFORMATION-SEEKING BEHAVIOUR**	16
2.1	INTRODUCTION	16
2.1.1	Definitions	16
2.2	THE LITERATURE OF EVIDENCE-BASED MEDICINE	17
2.2.1	The Cochrane Library of Evidence-Based Medicine	26
2.2.2	Evidence-Based Medicine in the Field of Information Practice	27
2.3	THE LITERATURE OF INFORMATION-SEEKING BEHAVIOUR	31
2.3.1	Analytical Search Strategy Design	32
2.3.2	Browsing Strategies	34
2.3.3	Information Seeking and End-User Searching in the Healthcare Professions	36
2.3.4	Information Seeking and End-User Searching in the Healthcare Professions in South Africa	42
2.3.5	Information Seeking and Evidence-Based Medicine	44
2.4	SUMMARY	45

3. EXISTING MODELS IN EVIDENCE-BASED MEDICINE AND INFORMATION SEEKING 46
3.1 INTRODUCTION 46
3.2 GENERAL MODELS IN MEDICINE 46
3.2.1 The Clinical Decision-Making Model 49
3.3 MODELS OF INFORMATION-SEEKING BEHAVIOUR 51
3.3.1 Models of Search Strategy Design 58
3.3.2 Models in Evidence-Based Medicine Information Seeking 60
3.3.3 Web-Based Models of Information Seeking 67
3.3.3.1 Browsing Tools 75
3.4 WEB-BASED MODELS IN EVIDENCE-BASED MEDICINE 76
3.4.1 Web-Based EBM Databases 77
3.4.1.1 The Cochrane Library 77
3.4.1.2 PubMed 79
3.4.1.3 EMBASE 81
3.4.2 Web-Based EBM Information-Seeking Systems 82
3.4.2.1 SUMSearch 83
3.4.2.2 TRIP 84
3.4.2.3 InfoPOEMS 86
3.4.3 EBM Web Sites 87
3.4.3.1 Netting the Evidence 87
3.4.3.2 HealthWeb 88
3.4.3.3 Clinical Information Access Program (CIAP) 88
3.4.3.4 SAHealth*Info* 88
3.4.3.5 ScHARR Library Focused Clinical Information Request Form 90
3.4.4 Web-Based EBM Compilations 91
3.4.4.1 Full Text EBM Journal Compilations 92
3.4.4.2 EBM Database/Journal Compilations 93
3.5 SUMMARY 94

4. COMPARISON OF SELECTED EVIDENCE-BASED MEDICINE AND INFORMATION-SEEKING MODELS 95
4.1 INTRODUCTION 95
4.2 INFORMATION SEEKING FOR CLINICAL PROBLEM SOLVING 96
4.2.1 Clinical Problem Solving 97
4.2.2 Clinical Decision Support Systems 102

UNIVERSITY OF JOHANNESBURG

4.3	COMPARISON OF INFORMATION-SEEKING MODELS WITH THE GRUPPEN CLINICAL DECISION-MAKING MODEL	103
4.4	DESIGN OF AN EVIDENCE-BASED MEDICINE INFORMATION-SEEKING MODEL	112
4.5	SUMMARY	120
5.	**DESIGN AND VALIDATION OF A WEB-BASED INFORMATION-SEEKING SYSTEM FOR EVIDENCE-BASED MEDICINE**	123
5.1	INTRODUCTION	123
5.2	DESIGN OF A WEB-BASED EBM INFORMATION-SEEKING MODEL	124
5.3	COMPARISON OF THE WEB-BASED EBM MODEL OF INFORMATION SEEKING (MODEL C) WITH OTHER MODELS OF INFORMATION SEEKING	134
5.3.1	Validation of the Web-Based EBM Information-Seeking Model (Model C) against the Kuhlthau Model of the Information-Seeking Process	134
5.3.2	Validation of Model C against the Gruppen Model of Clinical Decision Making	136
5.3.3	Validation of Model C against the Choo, Detlor & Turnbull Model of Web-Based Information Seeking	136
5.4	FINDINGS	142
5.5	SUMMARY	143
6.	**ASSESSMENT OF THE WEB-BASED EBM INFORMATION-SEEKING MODEL IN TERMS OF WEB SITE DESIGN**	144
6.1	INTRODUCTION	144
6.2	METHODOLOGY FOR THE DESIGN OF A WEB SITE TO FACILITATE EBM INFORMATION SEEKING	144
6.3	ASSESSMENT OF THE WEB-BASED EBM INFORMATION-SEEKING MODEL (MODEL C)	146
6.3.1	The Problem Statement	146
6.3.2	Constraining Requirements	147
6.3.3	The Conceptual Model	148
6.3.4	Derived Requirements	151
6.4	SUMMARISED FINDINGS	152

UNIVERSITY OF JOHANNESBURG

7. CONCLUSIONS 155
7.1 BACKGROUND 155
7.2 STATEMENT OF THE PROBLEM AND SUB-PROBLEMS 156
7.3 FINDINGS 156
7.3.1 Sub-Problem 1: Design of an Information-Seeking Model Aligned with the Clinical Decision-Making Model 156
7.3.2 Sub-Problem 2: Incorporation of the Clinical Question into an Information-Seeking Strategy 159
7.3.3 Main Problem: Design of an Evidence-Based Information-Seeking Model for Web-Based Use 161
7.4 RECOMMENDATIONS FOR FURTHER STUDY 163

8. REFERENCES 165

LIST OF FIGURES x

LIST OF TABLES xi

UNIVERSITY OF JOHANNESBURG

LIST OF FIGURES

3.1	Model-Measure-Manage Cycle in Medicine	47
3.2	Three-Loop Model Cycle in Medicine	48
3.3	The Gruppen Model of Clinical Decision-Making	50
3.4	Search Strategy Design Flowchart	60
3.5	Factors Entering into Clinical Decisions (Mulrow, Cook & Davidoff)	62
3.6	Flowchart Adaptation of the Faraino Model of Evidence-Based Searching	65
3.7	EBM Information-Seeking Model (Sackett *et al*)	66
4.1	Model A: Convergent (Directed) Information Gathering as Part of the Clinical Decision-Making Model	116
4.2	Model B: Divergent (Less Directed) Information Gathering as Part of the Clinical Decision-Making Model	118
5.1	Model C: Web-Based EBM Information-Seeking Model	125
5.2	Model C. Web-Based EBM Information-Seeking Model: Interpolation of 1st Browsing Opportunity for Background Information	126
5.3	Model C. Web-Based EBM Information-Seeking Model: Interpolation of 2nd Browsing Opportunity to Follow Earlier Leads	127
5.4	PICO Template for Facet Analysis of Clinical Questions	129
5.5	Model C. Web-Based Information-Seeking Model: Alternative Searching or Browsing Modes	130
5.6	Model C. Web-Based Information-Seeking Model: Separation of Question Formulation and Search Strategy Design	131
5.7	Model C. Web-Based Information-Seeking Model: Ranked Resources and Specific Search Strategy Design	133
6.1	The Artz Seven-Stage Methodology for Development of Subject-Specific Web Sites	145
6.2	Adaptation of the Artz Methodology for Web Site Design	146
6.3	Web Site Storyboard for the Web-Based EBM Information-Seeking Model	149
6.4	Comparison of the Clinical Decision-Making Model with the Clinical Decision-Making Metaphor in the Web Site Design	150
6.5	Four-Phase Model of EBM Information-Seeking Web Site	153

UNIVERSITY OF JOHANNESBURG

LIST OF TABLES

3.1	The Kuhlthau Model of the Cognitive and Affective Aspects of Information Seeking	56
3.2	The Choo, Detlor & Turnbull Model of Web-Based Information Seeking	73
4.1	The Kuhlthau Model of Cognitive and Affective Aspects of Information Seeking Correlated with the ACS Model of Search Strategy Design	107
4.2	Parallels between Clinical Management and Literature Searching (O'Rourke, Booth & Ford)	108
4.3	Stages in the ISP Correlated with ACS Search Strategy Design and the O'Rourke, Booth & Ford Model of Clinical Management of the Patient	110
4.4	Stages in the ISP Correlated with Search Strategy Design, Clinical Management of the Patient, and the Faraino Model of Evidence-Based Information Seeking	111
4.5	Stages in the ISP Compared with Stages in Clinical Decision Making	113
4.6	Stages in the ISP Compared with the Clinical Decision-Making Model (Gruppen) and the Divergent EBM Information-Gathering Model (B)	121
5.1	Comparison of Stages in the ISP (Kuhlthau) with the Web-Based EBM Information-Seeking Model (C)	135
5.2	Stages in the ISP Compared with the Gruppen Clinical Decision-Making Model and the Web-Based EBM Information-Seeking Model (C)	137
5.3	Stages in the ISP Compared with the Web-Based EBM Information-Seeking Model (C) and the Web-Based Information-Seeking Models of Ellis, Aguilar and Choo, Detlor and Turnbull	139