



Table of Contents

Preface		xī
Prologue		xv
Acknowledgments		xvii
About the Author		xix
Contributors		xxi
Section I	Understanding Health Information Systems and Technology	1
Chapter 1	Alignment: Health Information Systems and Current Challenges in Health Care	3
	Learning Objectives	3
	Introduction	3
	Healthcare Cost and Quality Issues	4
	Motivation	5
	HIS and the U.S. Government's Role and Goals in Health Care	6
	The Quality Crisis Furthers U.S. Government Involvement in HIS	7
	Consumer Expectations and Engagement	9
	Uses of HIS in Other Countries	9
	Protecting the Public's Health	10
	Summary	10
	Key Terms	10
	Discussion Questions	11
	References	12

Chapter 2	HIS Scope, Definition, and Conceptual Model	13
	Learning Objectives	13
	Introduction	13
	HIS Uses in Organizational and Community Settings	16
	Summary	22
	Key Terms	23
	Discussion Questions	24
	References	25
Section II	Systems and Management	27
Chapter 3	HIS Strategic Planning	29
	Learning Objectives	29
	Introduction	29
	HIS Strategy: Organizational Strategy as Its Roadmap	29
	HIS Strategy: Where Do We Begin?	34
	Why HIS Strategy Matters	40
	HIS and Technology Strategy: Advancing Public Health	45
	HIS and Technology Strategy: Architecture Builds a Strong House	46
	HIS and Technology Support of Organizational Goals	50
	HIS and Technology Strategy and Plans: Follow-up with Tactical Details	51
	Issues of Change and the Need for Governance	52
	Summary	54
	Key Terms	54
	Discussion Questions	55
	References	56
Chapter 4	HIS Application Systems and Technology	57
	Learning Objectives	57
	Introduction	57
	HIS Applications	58
	Technology	62
	Summary	81
	Key Terms	81
	Discussion Questions	83
	References	84
Chapter 5	Managing HIS and Technology Services: Delivering the Goods	85
	Learning Objectives	85
	Introduction	85
	Managing Process	86
	Managing People	102
	Summary	106

	Key Terms	107
	Discussion Questions	108
	References	109
Chapter 6	Implementation	111
	Learning Objectives	111
	Introduction	111
	Stages in Implementation	114
	Reasons for HIS and Technology Project Successes and Failures	126
	Summary	133
	Key Terms	134
	Discussion Questions	135
	References	136
Chapter 7	Leadership and Adoption of HIS and Technology	137
	Learning Objectives	137
	Introduction	137
	HIS Leadership from an Organizational Perspective	139
	Realizing the Value from HIS and Technology Investments	144
	Presidential/Political/National Leadership Perspective in HIS and Technology	146
	Leadership from Public Health Researchers and Scientists	147
	Leadership of Professional Organizations in HIS and Technology	147
	Adoption of HIS and Technology	149
	Summary	157
	Key Terms	158
	Discussion Questions	159
	References	160
Section III	Health Informatics	161
Chapter 8	Health Informatics	163
	Learning Objectives	163
	Introduction	163
	Health Informatics Definition and Purpose	163
	Additional Motivation to Pursue Health Informatics	167
	Relationship of Health Informatics to Donabedian's Healthcare Quality Framework	172
	Informatics Capabilities and Disciplines	176
	Unintended Consequences of Current Uses of HIS and Technology	178
	Summary	178
	Key Terms	179
	Discussion Questions	180
	References	181

Section IV	Data, Analytics, and Business Intelligence/Clinical Intelligence (BI/CI)	183
Chapter 9	Data	185
	Learning Objectives	185
	Introduction	185
	Data Sources	186
	Velocity, Volume, and Variety (Three V's) and Big Data	190
	Data Challenges	192
	Data Security and Protection	194
	Summary	195
	Key Terms	195
	Discussion Questions	196
	References	197
Chapter 10	Business and Clinical Intelligence	199
	Learning Objectives	199
	Introduction	199
	Healthcare Business and Clinical Intelligence	200
	History of BI and CI	202
	Current Challenges for Analytics	203
	Models for Data Architecture and Strategy	204
	Examples of BI/CI at Work	207
	The Future of BI/CI	208
	Summary	208
	Key Terms	209
	Discussion Questions	210
	References	211
Section V	Research, Policy, and Public Health	213
Chapter 11	HIS and Research, Policy, and Public Health	215
	Learning Objectives	215
	Introduction	215
	HIS Model: Research, Policy, and Public Health Relationships to HIS	217
	Types of Research and Sources of Data from HIS	222
	Areas Deserving Special Attention That Rely on HIS Management	230
	Summary	232
	Key Terms	233
	Discussion Questions	234
	References	235

Section VI	New Directions for HIS and Technology	237
Chapter 12	What Lies Beyond the Current State of HIS and Technology?	239
	Learning Objectives	239
	Understanding the Future of HIS and Technology	239
	eHealth, mHealth, Social Media, and Telemedicine	242
	Emerging HIS Technologies and the Human–Machine Relationship	248
	Future Directions in Informatics, Data, and Analytics	249
	The Effect of New Technologies on Public Health	250
	Alignment Between HIS and Technology and the Future	
	Challenges in Health Care and Public Health	250
	Issues and Ethics to Consider as the Future of HIS and	
	Technology Unfolds	251
	Future Impact of HIS and Technology on Research, Policy,	
	and Public Health	253
	Summary	254
	Key Terms	255
	Discussion Questions	256
	References	257
Glossary		259
Index		271