August 2026

CURRICULUM VITAE

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PERSONAL STATEMENT

I am a Professor (Adjunct) in the Department of Biomedical Informatics, Columbia University, and in the Population Health Sciences, Health Informatics, at Weill Cornell College of Medicine, in New York. I am a former Senior Research Scientist, and Director of Center for *Cognitive Studies in Medicine and Public Health* at the New York Academy of Medicine. I hold a BSc in Biochemistry and Microbiology from Otago University in New Zealand and a MA and Ph.D. in Educational and Cognitive Psychology (Medical Cognition) from McGill University in Montreal. As Professor of Medicine and the director of *Cognitive Science Center* at McGill, my early research focused on scientific foundations for medical and health education, particularly in cognitive foundations of medical decision-making. Subsequently, I expanded these research activities with an informatics focus at Columbia and Arizona State Universities, and the University of Texas-Houston. Adjunct appointments as a professor in NY psychiatric Institute (Columbia), Computer Science (ASU), and Behavioral Health Science (UTH) allowed me to explore the relationship between Cognitive, behavioral, and information sciences in the biomedical domain.

An elected fellow of the Royal Society of Canada (Academy of Social Sciences), the American College of Medical Informatics, and the New York Academy of Medicine, I received the annual Swedish "Woman of Science" award. I received an Honorary Doctor of Science degree from the University of Victoria to recognize my contributions through cognitive studies in health informatics. I was recently awarded the 2021AMIA William W. Stead Award for *Thought Leadership in Informatics* for bringing cognitive science to biomedical informatics (cognitive informatics). I am on the editorial board of *Intelligence-Based Medicine.* I am a Springer series editor of books on *Cognitive Informatics in Healthcare and Biomedicine,* and a past associate editor of the *Journal of Biomedical Informatics* and an assistant editor of AI *in Medicine*. I have served on the editorial boards o*f Medical Decision Making, Methods of Information and Medicine*, *the Journal of Experimental Psychology, Topics in Cognitive Science, Advances in Health Science Education and Computers in Biology and Medicine.*

In my 37-year career dedicated to academic and clinical research and education, I spent the first 18 on research related to cognitive mechanisms underlying human performance in health care and medical decision-making. The last two decades have been spent working on human cognition in health care, addressing cognitive issues in biomedical informatics (human-computer interaction, cognitive design, decision support, distributed cognition, and team decision making, especially in critical care settings). After moving to the US in 2000, I became the principal investigator on two R01 awards. Both focused

on cognitive decision-making and errors, one in a critical care setting (NLM) and another on young adults' sexual risk-taking behaviors (NIMH). With awards from *Science Foundation Arizona* and the *Office of National Coordinators (ONC*) in Washington, I forged a closer tie between cognitive psychological principles and health information technology. I completed a successful 5-year James S. McDonnell Foundation research project on Complexity and Error in Health Care and am a recipient of another R01 from AHRQ related to Impact of Meaningful Use on Clinical Workflow in Emergency Departments. The next phase of my research focuses on cognition and mental health with an initial R18 award from NIMH. Over my 36-year career, I have mentored 42 master's students, 25 doctoral students, and 20 post-doctoral and research fellows. I have over 350 scholarly publications spanning biomedical Informatics, Artificial Intelligence, clinical, and cognitive science journals, and an editor of seven books.

EDUCATION

Ph.D., Department of Educational Psychology, McGill University, Montreal, Canada, (1980-81), Graduated, October,1981
Area of Concentration: **Medical Cognition** with a focus on reasoning and with development of expertise in medicine
M.A., Department of Educational Psychology, McGill University, Montreal, Canada, (1978-80), Graduated May,1980
Area of Concentration: **Medical Evaluation** with a focus on the relationship between basic and clinical sciences
Post Graduate Diploma in Biochemistry, Faculty of Science, Otago University, New Zealand. (1968-69) Graduated 1977
Area of Concentration: **Metabolic Biochemistry**: Impact of ATPase on Endonuclease I in E Coli
B.Sc., Biochemistry & Microbiology, Faculty of Science, Otago University, New Zealand, (1966-68) Graduated late1976

RESEARCH INTERESTS

Medical cognition
Cognitive Informatics
Medical decision-making and reasoning
Human-centered AI
Patient safety and medical errors
Augmented intelligence
Cognitive assessment of learning and instruction

HONORS AND AWARDS

1994	Elected "Woman of Science" for the year (Sweden)
1996	Fellow, The Royal Society of Canada (elected by the Academy of Social Sciences)
1996	Elected Fellow, American College of Medical Informatics
1997	Elected Member, Board of Governors, Cognitive Science Society.
1998	D.Sc. (honorary), University of Victoria, BC, Canada
2002	Outstanding Manuscript Award in Educational Methodology, Journal of *Dental Education.*
2003-2006	Vice President (Member services), IMIA Board
2004	Elected Fellow, The New York Academy of Medicine
2007	Selected for *Marquis Who's Who in the World*
2008	Service Faculty of the Year Award, School of Computing and Informatics, Arizona State University
2009	Vice Chair, AMIA 2009 Scientific Program Committee
2009	STAR Award (with Edward Shortliffe), University of Texas System, University of Texas in Houston
2013	Hind Rattan Award Recipient, NRI Welfare Society of India, New Delhi, India
2013	AMIA Leadership Award Recipient, American Medical Informatics Association, Washington DC, USA
2016	Five Year Service Award from the New York Academy of Medicine, NY
2017	Elected Member, International Academy of Health Sciences Informatics [IAHSI]
2021	2021AMIA William W. Stead Award for Thought Leadership in Informatics
2021	Ten Year Service Award from the New York Academy of Medicine, NY
2023	Social Sciences and Humanities in United States Leader Award, Research.com
2025	ACMI Distinguished Fellow for exemplary leadership and discipline-shaping interdisciplinary research
2025	Lifetime Career Award, for contributions to cognitive science, medical reasoning, and patient-centered informatics, from the International Society for Medical Artificial Intelligence (ISMAI)

NOTABLE NATIONAL COMMITTEES

1994	Advisor to The World Bank on *"Marshaling Technology for Development"* through the National Research Council of the National Academies of Sciences. Washington, DC and Irvine, CA

1996	Chair, Scientific Review Committee, National Centers of Excellence, Canada
1997	Member, Roundtable on Work, Learning and Assessment, National Research Council, USA
1999	Chair, Editorial Committee, Medinfo2001, International Medical Informatics Association, London, UK
1999	Member, Selection Committee, Canadian Chairs of Scientific Excellence, Medical Research Council
1999-2007	Member, Bioengineering Training and Education Program, National Science Foundation, USA
2001-2007	Member, Board of Directors, the Center for Decision Sciences ISERP, and Columbia University, NY
2006	Member, Committee on Opportunities in Basic Research in the Behavioral and the Social Sciences for the Military, National Research Council, U.S.A.
2007-2009	Member, Clinical Research Review Committee, the National Center for Research Resources (NCRR)
2008	Member, International Adjudication Committee, International Research Chairs Initiative (IRCI), Canada
2011	Member, the Institute of Medicine Committee (IOM) on Patient Safety and Health Information Technology
2011-13	Chair*,* AMIA Student Paper Competition Advisory Committee (SPAC)
2015	Member, PCAST, "Engagement & Connectivity" working group on Technology and Aging
2016	Member, DoD, Joint Research Program committee on Medical Decision Aids and Simulations
2017	Chairperson, Scientific Review Group, NIH-National Center for Advancing Translational Sciences (NCATS), March 2017
2019	Member: Technical Expert Panel (TEP)on "Quantitate the Burden of EHRs" (QBEHR) for *Mathematica,* Assistant Secretary for Planning and Evaluation (ASPE), Washington DC
2020	Member, Committee on NLM-G13 Scholarly Works
2021	Member, NIH CSR Scientific Review Panel on Mobile Health Technologies
2019-	Editor, Special Elsevier book series on Cognitive Informatics in Biomedicine and Healthcare
2020-	Editorial Board, Journal of Intelligence-based Medicine
2021-22	Member, committee on Accelerating Behavioral Science through Ontology Development and Use, National Academy of Science, Medicine and Engineering
2025-26	Member, ACMI Fellowship Nomination Committee
2026	Member, ACMI Distinguished Fellowship Selection Committee
2026-	Member, Board of Directors, International Society for Medical AI [ISMAI]

PAST APPOINTMENTS

1982-1983	*Research Associate*, Centre for Medical Education, Faculty of Medicine, McGill University *Lecturer*, Department of Medicine, Faculty of Medicine, McGill University *Faculty Lecturer*, Department of Educational Psychology & Counseling, Faculty of Education, McGill University
1983-1986	*Assistant Professor***,** Department of Medicine, Faculty of Medicine, McGill University
1983-1996	*Associate Member***,** Department of Educational Psychology, Faculty of Education, McGill University
1984	*Medical Scientist*, Department of Medicine, Royal Victoria Hospital, McGill University Hospital Centre
1987-1990	*Associate Professor***,** Department of Medicine, Faculty of Medicine, McGill University **(with tenure)**
1987-1993	*Associate Director***,** Centre for Medical Education, Faculty of Medicine, McGill University
1987-1993	*Member,* Cognitive Science Centre, Faculty of Graduate Studies and Research, McGill University
1989	*Visiting Scholar*, Department of Computational Linguistics, Carnegie Mellon University, Pittsburgh, PA *Professor***,** Department of Medicine, Faculty of Medicine, McGill -University *Associate Member***,** Department of Psychology, Faculty of Science, McGill University
1993-1997	*Director***,** McGill Cognitive Science Centre, Faculty of Graduate Studies and Research, McGill University
1994-2001	*Director***,** Centre for Medical Education, Faculty of Medicine, McGill University *Visiting Scholar***,** Psychological Studies in Education, School of Education, Stanford University, Palo Alto, CA
1999	*Visiting Professor*, Department of Health Informatics, School of Allied Health Sciences, University of Texas at Houston, Houston, Texas.
2000	*Visiting Professor*, Stanford Medical Informatics, Stanford University, Palo Alto, California
2006	*Adjunct Member*, Graduate Faculty, Department of Management, Rutgers University, Newark
2000-2007	*Professor of Medical Psychology*, Department of Psychiatry, Columbia University, New York, NY
2000-2007	*Professor*, Department of Biomedical Informatics, Columbia University, New York, NY
2000-2007	*Adjunct Professor of Psychology and Education,* Department of Human Development, Teacher's College, Columbia University, New York
2003-2007	*Adjunct Professor of Medicine,* Faculty of Medicine, McGill University, Montreal, Que., Canada
2007-2008	*Professor and Interim chair*, Department of Biomedical Informatics, Ira A. Fulton School of Engineering, Arizona State University, Phoenix

2008-2009	*Professor and Vice-Chair*, Department of Biomedical Informatics, Ira A. Fulton School of Engineering, Arizona State University, Phoenix
2007-2009	*Professor of Basic Medical Sciences*, College of Medicine, University of Arizona, Phoenix
2007-2009	*Director*, Medical Education Research, College of Medicine, University of Arizona, Phoenix
2009-2011	*Professor,* School of Biomedical Informatics, University of Texas, Houston, TX
2009-2011	*Co-Director*, Center for Cognitive Informatics and Decision Making, School of Biomedical Informatics, UT-Houston, TX
2019-2020	Research Professor, College of Medicine, Nursing and Health Sciences, Fiji National University, Fiji
2019-2020	Senior Executive Consultant, Watson Health, IBM
2011-2025	Senior Research Scientist, and Director, Center for Cognitive Studies in Medicine and Public Health, The New York Academy of Medicine

PROFESSIONAL ACTIVITIES

Membership in Learned Societies

American Medical Informatics Association; Cognitive Science Society; The Psychonomics Society; Association for Computing Machinery (CHI-Conference on Human Computer Interactions); International Medical Informatics Association (IMIA)

Editorial Boards

Current: *Intelligence-Based Medicine (Editorial Board),*
Springer Books on *Cognitive Informatics and Healthcare and Biomedicine (Series Editor)*

Past: Journal of Biomedical Informatics (Associate Editor), Advances in Health Science and Education, BMC Medical Informatics and Decision Making. (Editorial Adviser), Topics in Cognitive Science, Artificial Intelligence in Medicine (Assistant Editor); International Journal of Medical Informatics; Journal of Experimental Psychology (Learning, Memory & Cognition); Journal of Medical Decision Making; Monograph series on 'Cognitive Science and Technology,' Ablex Publishing Corporation, Elsevier, Netherlands (Co-Editor with Alan Lesgold); Methods of Information and Medicine

Committees

1986

Organizer and Chair: Conference on "Cognitive Science in Medicine" at McGill University Sponsored by Josiah Macy Jr. Foundation, September 1986.

1988

Committee Member: Conference on Computers in Medical Education at McGill University. Sponsored by IBM, June 1988.

Co-organizer: Cognitive Science in Medicine Fund. Organizer with D. Evans for special funds for student scholarship, November 1988.

Organizer and Chair: The Tenth Annual Conference of The Cognitive Science Society at McGill University Montreal, August 1988. (Co-organizer - Guy Groen).

1990

Member: IBM-McGill Co-operative Cognitive Science Lecture Series, 1990 -1991.

Program Member: McGill-University - West Indies Joint Continuing Medicine Distance Project. 1990-1992.

1991

Senate Representative: Advisory Committee for New Dean of Education: January-March 1991.

Director: McGill Cognitive Science Centre Colloquium Series on Explorations in Cognitive and Neuro Sciences, 1991-1992.

Member: Curriculum Review Committee. Faculty of Medicine, McGill University. 1991-93.

Member: Study Section, Cognition, Emotion and Personality Research Review Committee, National Institute of Mental Health. Chevy Chase, MD, June 6-8, 1991

Organizer and Chair: NATO Advanced Scientific Research Workshop on *Advanced Models of Cognition for Medical Training and Practice*. Tuscany, Italy, June 19-22, 1991.

1992

Member: Cyclical Review Committee of the Department of Psychology, McGill University, 1992.

Member: Senate Committee on Continuing Education, McGill University, 1992-1994.

Member: Faculty Council, Faculty of Education, 1992-1994.

Member: Comité d'évaluation du programme Soutien aux équipes de recherche pour l'exercice, Fonds pur la Formation de Chercheurs et l'Aide à la Recherche (FCAR), 1992-1994.

1993

Member: Liaison Committee on Medical Education/Committee on the Accreditation of Canadian Medical Schools Survey team visiting McMaster University School of Medicine, March 29-April 1, 1993.

Organizer: Cognitive Science Lectures 'In Memory of Guy Groen'. 1993.

Member: Adhoc Curriculum Committee, Implementation Working Group, Faculty of Medicine, McGill University, 1993.

Member: APPS Sub-Committee for the Review of Existing Programs, McGill University, 1993-1994.

Organizer and Chair: Faculty Development Program. Medical Informatics for Clinical Application: Current Advancements and Future Directions. Montreal, Canada. May 1993.

Chair: Session on Medical Education. 2nd Gauss Symposium, International Conference on Medical Mathematics and Physics. Munich, Germany. August 1993.

Member: Planning for Capstone ARW Workshop in Advanced Educational Technology (AET). Grenoble, France, September 1993

Committee Member: Statutory Selection Committee for Promotion to Full Professor, McGill University, 1993-1999.

1994

Program Committee: International Medical Informatics Association, Working Group 6. Geneva, Switzerland, 1994; Jacksonville, Florida, 1997, Arizona, 1999.

Program Member: Conference on Medical Physics and Biomedical Engineering. Cyprus, May 1994.

Committee Member: Postdoctoral Committee, Faculty of Graduate Studies and Research, McGill University, 1994.

Committee Member: Social Sciences Research Grants Subcommittee, Faculty of Graduate Studies and Research, McGill University, 1994-1997.
Representative: MRC/ACMC Committee on Research in Medical Education. Medical Research Council of Canada, 1994-1997.
Committee Member: McGill MRC Representative for the ACMC Research in Medical Education Committee. September 1994-95.

1995

Program Committee: 4th Golden West Conference on Intelligent Systems. San Francisco, CA. June 12-14, 1995.
Program Committee: International Conference on Computer in Education. Singapore, December 1995.
External Examiner: Doctoral Dissertation Defense. Department of Educational Research & Development, University of Limburg, Maastricht, The Netherlands. June 1995.
Co-Chair: (with J.R. Moehr). Workshop: Advanced Patient Records and Medical Concept Representation. *International Medical Informatics Association 8th World Congress on Medical Informatics.* Vancouver, BC. July 1995.
Chair, Scientific Programs: Second International Symposium on Cognition and Education: A Multidisciplinary Perspective. Varanasi, India. December 1995

1996

Chair: Collaborative Scientific Review Committee for HEALNet. National Centres of Excellence Award, 1996-1998.

1997

Member: Panel on Work, Learning & Assessment, Commission on Behavioral Science: Education, National Research Council, Washington, DC, 1997.

1998

Program Committee: Symposium on Computer Applications in Medical Care, 1996; Washington, D.C., 1998.
Program Committee: International Medical Informatics Association 9h World Congress on Medical Informatics. Korea 1998.
Member: Interdisciplinary Graduate Education and Research Training Program, National Science Foundation, Virginia, MD, USA, 1998.
Member: Advisory Panel to the National Science Technology Board (Medical Informatics), Singapore, 1998.
Member, Evaluation of Medical Informatics Program: National University of Singapore, National Board of Science and Technology, Singapore 1998

1999

Member, National Science Foundation, Site Visit Team, Centers of Bioengineering Education, Berkeley, University of California, 1999.
Committee Member: Workgroup on Health-Related Programs Merger, McGill University, 1999.
Committee Member: Curriculum Committee, Faculty of Medicine, McGill University, 1999.
Member: Scientific Program Committee, IMIA working group 6. Arizona, December 1999.

2000

Member, Steering Committee. Fifth International Conference on Intelligent Tutoring Systems, Montreal, PQ, June 2000.
Member: Scientific Program Committee, IMIA working group 4. Victoria, B.C., July 2000.

2001

Chair: Editorial Committee, MedInfo2001, London, U.K. May 2001.
Committee Member: Workshop on Agents in Health Care, in Autonomous Agents 2001. Montreal, May 28, 2001.
Member: NSF Site Visit Team Centers of Bioengineering Education, Vanderbilt University, Tennessee, USA, 2001-2007.
Member: Strategic Planning Committee for Education at Columbia Health Sciences, Columbia University, 2001-2002

2002

Member: Columbia University Provost's Advisory Committee on Libraries and ActSChair, 2002

2003

Chair and Member: NIMH extramural program contract review committee (SBIR), Bethesda, Maryland, 2003
Consultation, Partners Healthcare System, Inc. Needham, MA. 2003-2005
Member, AMIA Student Paper Competition Selection Committee, Washington D.C, 2003-present.

2004

Consultation, Medical Decision Logic, Inc. Towson, MD, 2004-2005
Consultation r, Office of Policy Development, The New York Academy of Medicine, 2004
Member, Significant Events Committee, Columbia University Medical Center, New York, 2004
Consultation, Operations Evaluation Department, World Bank, Washington, DC 2004
Member, Significant Events Committee, Columbia University Medical Center, New York, 2004
Member, NLM Loan Repayment Review, Bethesda, MD, 2004-2006

2007

Member, Clinical Research Review Committee, the National Center for Research Resources (NCRR), Bethesda, MD, 2007-2009
Chair, Search Committee for Faculty Recruitment, Department of Biomedical Informatics, Arizona State University, Phoenix, AZ, 2007-present
Co-Chair, Curriculum Committee, Department of Biomedical Informatics, Arizona State University, Phoenix, AZ, 2007-present

Member, International Adjudication Committee, International Research Chairs Initiative (IRCI), Canada, 2007
Member, AMIA Student Paper Advisory Committee (SPAC), 2007-2010
2008
Member, Clinical and Translation Science Award (CTSA) Peer Review Panel, NCRR, NIH, 2008-2011
2009
Vice Chair, AMIA Program Committee. Washington D.C, 2009
2010
Member, International Program Committee (IPC), International Conference on Health Informatics (Africa HI 2010), which took place in Gaborone, Botswana from September 06, 2010 to September 08,2010
Member, Medinfo2010 Student Paper Committee
Member, AMIA Awards Committee, 2010-2011
Member, the Institute of Medicine Committee (IOM) on Patient Safety and Health Information Technology, 2010-2011
Member, Executive Committee, Gulf Coast Consortia/Keck Center for Quantitative Biomedical Sciences, Rice University,
Member, Research Misconduct Investigation Committee (Provost's Office) UT Health, Houston, 2010-2011
2011
Chair, AMIA Student Paper Advisory Committee (SPAC), 2011-2014
Member, Review Committee, Gulf Coast Consortia for Quantitative Biomedical Science (GCRC), 2011
Member, Institute of Medicine committee on Patient Safety and Health Information Technology, 2011
Member, AMIA Awards Committee, 2010-2011
2012
Chair, AMIA Student Paper Advisory Committee (SPAC), 2011-2013
Co- Chair, PhD Dissertation Committee, Mithra Vankipuram, Arizona State University
2013
Member, MedInfo2013 Student Paper Competition Committee, Copenhagen, Denmark
Member, NIH-SBIR Proposal review committee, Bethesda, DC
Member, Center for Healthcare Informatics and Policy (CHiP), Weill Cornell Medical College
Member, WISH 2013 Steering Committee for the Workshop on Interactive Systems in Healthcare 2012: Bridging Communities
2014
Co-Chair, PhD Dissertation Committee, Prabal Khanal, Arizona State University
Co-Chair, PhD Dissertation Committee, Aaron Ashby, Arizona State University
Chair, APAMI 2014 Student Paper Competition Committee, New Delhi, India
2015
Member, PCAST Committee's "Engagement & Connectivity" working group on Technology and Aging
Chair, Thesis Defense Committee, Harsh Damania, Arizona State University
2016
Member, DoD, Joint Research Program committee on Medical Decision Aids and Simulations
Member, Human System Integration (HSI) in Cancer Care Meeting on HSI for cancer care and prevention
2017
Chairperson, Scientific Review Group, NIH-National Center for Advancing Translational Sciences (NCATS), March 2017
2018
Member: NLM Meeting of G13 applications of Scholarly works, Bethesda MD
2025-26
Member: ACMI Fellowship Nomination Committee
2026
Member: ACMI Distinguished Fellow Committee

PROFESSIONAL INVITATIONS
1983
Cognitive Processes in Comprehension and Problem Solving by Medical Students and Physicians: Department of Medical Education, Jefferson Medical College, Thomas Jefferson University, Philadelphia, Pennsylvania. February 1983
Cognitive Processes in Comprehension and Knowledge Acquisition by Medical Students and Physicians: University of Limburg, Maastricht, The Netherlands. Spring 1983
Medical Problem Solving: State of the Art: Medical Grand Rounds, Royal Victoria Hospital, McGill University, Montreal, Quebec. December 1983.
1984
Discourse Analysis: Its Role in the Study of Clinical Reasoning: School of Medicine, Southern Illinois University, Springfield, Illinois. January 1984
Propositional Representation of Medical Problem-Solving Protocols: Cognitive Science Society, Invitational Symposium on "Knowledge-Based Medical Problem Solving." Boulder, Colorado. June 1984.

1985

Role of Knowledge in Community-Based Education: Office of International Research Development, Cairo, Egypt. September 1985.

Role of Biomedical Knowledge in Clinical Reasoning: Josiah Macy Jr., Foundation, New York City, New York. Organized day of "Scientists Meet the Journalists." May 1985.

1986

Cognitive Studies on Health Care Delivery in the Third World Countries: Bureau of Educational Research, Kenyatta University, Nairobi, Kenya. January 1986.

Role of Situation Models in Clinical Reasoning: American Educational Research Association, Division C Symposium on "Cognitive Science in Medicine: The Nature of Acquisition and Application." San Francisco, CA. April 1986.

Basic Science & Clinical Knowledge: Department of Epidemiology & Biostatistics, McMaster University, Hamilton, Ontario. September 1986.

Assessment of Teaching & Learning in Medicine: Department of Obstetrics & Gynecology, University of Western Ontario, London, Ontario. November 1986.

Models of Medical Problem Solving: Evidence from Cognitive Psychological Studies: Carnegie Mellon University, Pittsburgh, Pennsylvania. November 1986.

1987

Cognitive Science and Technological Interventions: Rockefeller Foundation, New York City, New York. February 1987.

Relationship of Comprehension to Problem Solving in Clinical Medicine: Cognitive Science Center, McGill University, Montreal, Quebec. February 1987.

1988

Role of Basic Science in Medical Curriculum: University of Newcastle, New South Wales, Australia. September 1988.

Cognitive Science in Medicine: Department of Psychology and Cognitive Science Program, Syracuse University, Syracuse, New York. December 1988.

1989

Analyse de protocole en contexte médical: Laboratoire de psychologie, Université de Paris VIII, Paris, France. February 1989.

Hypothesis Evaluation from Bayesian and Psychological Perspectives: Department of Clinical Epidemiology, Royal Victoria Hospital, Montreal, Quebec. May 1989.

The Study of Expertise: Prospects and Limits: Max Planck Institute for Human Development and Education, Berlin, Germany. June 1989.

1990

Cognition and Technology Innovation in Health and Agriculture: (with T.O. Eisemon) McGill International, Montreal, Quebec. February 1990.

Connaissance en prior dans la comprehension du text: Laboratoire de psychologie, Université de Paris VIII, Paris, France. Fall 1990.

Two Modes of Thought: A Comparison of Effects of Conventional and Problem-Based Medical Curricula: Plenary Session, Second International Symposium on Problem-Based Learning, Yogyakarta, Indonesia. October 1990.

Inducing Backward Reasoning in Medical Problem Solving: Medical Rounds, Faculty of Medicine, Queen's University, Kingston, Ontario. November 1990.

Inducing Backward Reasoning in Medical Problem Solving: Department of Medical Informatics, Università de Pavia, Pavia, Italy. December 1990.

1991

Real versus Artificial Expertise: The Development of Cognitive Models of Clinical Reasoning: Invited Keynote Speaker: Third European Conference on AI in Medicine. Maastricht, The Netherlands. June 1991.

Role of Tutor in PBL Methodology: Problem Based Learning Workshop, Guyana, South America. August 1991.

1992

The Problem Based Learning Curriculum as Compared with the Traditional Curriculum: Medical Education Workshop, The University of the West Indies, Mt. Irvine Bay Hotel, Tobago, West Indies. February 1992.

Cognitive Models of Clinical Reasoning: Evidence from Studies of the Development of Expertise: Division of Information Science, Stanford University, Stanford, California. April 1992.

Real versus Artificial Expertise: The Development of Cognitive Models of Clinical Reasoning: Département d'informatique et de récherche opérationnelle (I.R.O.) Université de Montréal, Montreal, Quebec. April 1992.

The Representation of Medical Information in Novices, Intermediates, and Experts: Plenary Session Speaker: World Congress on Medical Informatics, Geneva, Switzerland. September 1992.

Reconciling Cognitive Research with Health Education Assessment and Intervention: Workshop on Cognition and Educational Achievement for the Partnership for Child Development. Kingston and Ocho Rios, Jamaica. November 1992.

1993

Effects of Conventional and Problem-Based Medical Curricula on Problem Solving: Medical Grand Rounds, Faculty of Medicine, Medical Education, The University of Manitoba. Winnipeg, Manitoba. February 1993, January 1994.

Transfer of Technology to the Developing Countries: McGill Student Pugwash, McGill University, Montreal, Quebec. February 1993.

Medical Education in Transition: An Argument for Science-Based Curriculum: Medical Grand Rounds. Royal Victoria Hospital. Montreal, Quebec. February 1993.

Cognition and Medical Education: Roll Conference on Medical Education. The University of Michigan Medical Center. Captiva Island, Florida. February - March 1993.

Cognitive Models of Expertise in Medicine: Plenary session presented at The Third International Workshop on Human & Machine Cognition, Special Topic 1993: Expertise in Context. Seaside, Florida. May 1993.

Medical Information and The Documents: Day of the Document. "De Reehorst" in Ede, The Netherlands. May 1993.

User Interfaces: (Co-group Leader) International Medical Informatics Association. Working Conference on Workstations-Assignment 1. Washington, DC. June 1993.

Cognitive Science and Medical Education: State-of-the-Art: Plenary Session - 2nd Gauss Symposium, International Conference on Medical Mathematics and Physics. Munich, Germany. August 1993.

Cognitive Assessment and Health Education in Relation to Child Health Status: Partnership for Child Development. Ocho Rios, Jamaica. September 1993.

The Role of Biomedical Knowledge in Medical Education: A Cognitive Science Perspective: 2nd Gauss Symposium, International Conference on Medical Mathematics and Physics. Munich, Germany. August 1993.

Cognition, Education and Child Health: Community, Developmental & Epidemiologic Research, McGill University-Montreal Children's Hospital Research Institute. Montreal, Quebec. November 1993.

Panel on the Health Professional Workstation: Report of an International Conference: Panelist - Patient-Centered Computing: Symposium on Computer Applications in Medical Care, A Conference of the American Medical Informatics Association. Washington, DC. November 1993.

1994

Cognitive Models of Reasoning in Medicine: Distinguished Lecture Series, Institute of Interdisciplinary Studies, Carleton University. Ottawa, Ontario. January 1994.

Cognition and Knowledge Representation in Health Informatics: Scientific and Academic Research Special Interest Group of the Canadian Organization for the Advancement of Computers in Health (SARIG of COACH), Vancouver, British Columbia. March 1994.

Medical Decision Making: Norwalk Hospital, Yale University, Norwalk, Connecticut. April 1994.

Cognitive Models for Characterizing Biomedical Knowledge and Expertise: Keynote address. Conference on Medical Physics and Biomedical Engineering. Nicosia, Cyprus. May 1994.

Cognitive Models of Clinical Reasoning Conceptual Representation: Keynote address. Conference on Natural Language and Medical Concept Representation. Lake Geneva, Switzerland. May-June 1994.

The Nature of Medical Expertise: Applications of Cognitive Science Principles: School of Behavioral Sciences, Macquarie University. Sydney, Australia. August 1994.

Symposium on Marshaling Technology for Development: Reaction to Keynote Address on Education: The World Bank and the National Research Council of the National Academies of Sciences, Medicine, and Engineering. Irvine, CA. November 1994.

1995

The Nature of Medical Expertise and Its Relationship to Medical Informatics: Columbia University. New York City, New York. January 1995.

Cognition and Technology in Health Education Research: Diffusion and Dissemination of Health Education. Health Promotions Canada & NCI. Vancouver, British Columbia. March 1995.

The Acquisition of Medical Expertise in Complex Dynamic Environments: The acquisition of expert performance. Wakulla Springs, FL. April 1995.

A Healthy Body and a Healthy Mind?: The Relationship between cognitive and physical illness: Discussant. Conference sponsored by the Partnership for Child Development, Oxford, University, The Welcome Trust, and the James S. McDonnell Foundation. Worcestershire, UK. June 1995.

Interdisciplinary in the Construction of the New Medical Education: World Conference of Medical Education. Bogotá, Colombia. October 1995.

Strategies for Changing Physician Behavior: Coronary Heart Disease Management - University Program. Conference sponsored by Merck & Co., Inc. Escorial, Spain, October 1995.

1996

Strategies for Changing Physicians' Beliefs and Behavior: Conference sponsored by SmithKline Beecham Pharmaceuticals AB. Barcelona, Spain. February 1996.

Cognitive Issues: COACH 21. Review Panel - Scientific Program Committee. Toronto, Ontario. April 1996.

Understanding Cognitive Processes in Decision Making. New Information Technology and National Heart Alert Program, Bethesda, MD. April 1996.

Decision Making in Health Care: How studies of practice inform theory. Naturalistic Decision Making, Virginia, USA, April 1996.

Human Resources in Health and Medical Education: Conference on Human Resources in Health and Medical Education. Buenos Aries, Argentina. September 1996.

1997

Scientific Collaboration in Health Informatics: Health Informatics, HEALNet, Victoria, BC, April 1997.

The Role of Communication and Co-ordination between Academia, Community and Health Services: Colombian Association of Medical Schools, Santafe de Bogota DC, Colombia. September 1997.

Medical Expertise and Aging: Conference on Information Processing & Cognition; Destin, Florida, 1997.

Role of Problem Based Learning in Dental Education, International Congress of Dentistry Orlando, Florida, 1997.

1998

Building Co-laboratories in Medicine and Health: Exploring Human-Machine Interaction. Department of Epidemiology and Biostatistics, McMaster University, Hamilton, Ontario, February 1998.

Cognitive Aspects of Interface Design for Biomedical Environments: Semi-plenary session at FALL AMIA in Orlando, Florida, Nov. 1998.

1999

Laboratories Without Walls: Collaboration in Health Care. HEALNet 4th Annual General Meeting, Calgary, Alberta, March 1999.

Issues in User Interface Design: Role of Cognitive Science. Faculty of Engineering, Carleton University, Ottawa, Ontario, April 1999.

Science of Cognition and User Interface Design. Houston Health Science Centre, University of Texas at Houston, Houston, TX, March 1999.

The Networked Health Care Environment of the Future: Requirements for New Human Abilities. MedNet 1999, 4th World Congress of Internet in Medicine, Heidelberg, Germany, September 1999.

2000

Active Knowledge and Cognitive Performance in Professional Education. "Advances in Teaching and Learning" Day. Houston Health Science Centre. University of Texas at Houston., Houston, TX, February 1, 2000.

Development of Medical Decision-Making Processes, Presentation as a part of the Panel on the "Roles of Psychological Theory and Research in Improving Medical Decisions", February 22, 2000, Washington, D.C.

Role of Cognitive and Social Sciences and Humanities for Medical Education and Training in the Information Age: Victoria, British Columbia, Workshop, February 2000.

Are Health Report Cards Measuring Up? HEALlNet 5th Annual Conference 2000, Toronto, Ontario, March 2000.

Impact of a Computer-Based Patient Record System on Data Collection, Knowledge Organization, and Reasoning, Stanford Medical Informatics Colloquium, Stanford University, Palo Alto, CA April 2000.

Heuristics and Medical Errors in Emergency Conditions. Johnson Space Center, NASA Houston. May 2000.

Cognitive Models in Training Health Professionals to Protect Patients' Confidential Information. International Medical Informatics Association Working Group 4 (Security and Confidentiality for Electronic Health Record) University of Victoria, B.C. July 2000.

Heuristics and Medical Errors in Emergency Conditions. NASA Smart Systems Presentation, NASA Houston. September 8-10, 2000.

Training Physicians to Meet the Technological Changes of the New Century. National Academy of Medicine, Hong Kong. October 2000.

What is Wrong with EMR? Canada E-Health 2000 Conference, Ottawa, Canada, October 2000.

The impact of the Clinical Systems on Human Cognition: Computer-Based Patient Records as an Example. Seminar, Department of Psychiatry, Columbia University, NY, December 2000.

Cognitive Science Research at the Interface between Psychiatry and Medical Informatics, Psychiatry Grand Rounds. Department of Psychiatry, Columbia University, NY, December 2000.

2001

Applying the Science of Learning to the University and Beyond: Cognitive, Motivational, and Social Factors. Spencer Foundation/APS sponsored workshop, Kellogg Center, Pomona, CA, March 1-4, 2001.

Cognitive Science and its Role in Medical Informatics Research and Practice. NLM sponsored initiative at Sao Paulo, Brazil, May30-June3, 2001.

International Summer School on Design- for- Safety-2001. The European Institute of Cognitive Sciences and Engineering (EURISCO), Saint-Lary, Prénées, France, August 2001.

Electronic Health Record. Japanese Medical Informatics Association, Tokyo, Japan, December 2001.

Medical Informatics and the science of Cognition, Centre for Health Informatics University of New South Wales, Sydney, Australia*,* September 2001.

2002

The challenges in bringing formal evidence in to Practice, Grand Rounds, Children's Hospital Informatics Program, Harvard Medical School, Cambridge, MA. March 2002.

The future of paperless hospital. IMIA Annual meeting. Taipei, Taiwan, October 2002.

Medical Decision Making, Workshop on training and performance assessment, Brazil, December 2002.

2003

Impact of EMR on Health Care, Social Work in Psychiatry, Psychiatric Institute New York, NY, February 2003.

Walter Kintsch: A Psychology Beyond Words: Triple Festschrift in honor of Lyle Bourne, Walter Kintsch, and Thomas Landauer. University of Boulder, Boulder, Colorado.

The Intermed collaboration, the Science of Collaboratories workshop*,* Ann Arbor MI, June 2003.
Patient Safety issues in Nursing Informatics. International Nursing Informatics post Conference workshop, Rio De Janeiro, Brazil June, 2003.
Problem-based learning, Invitational key-note address at the European Dental Education Meeting, Dresden, Germany, September 2003.
Pasture's Quadrants a dynamic construct for educational research, American Education Research Association/ Postdoctoral Research Fellows summer retreat, Chauncey Conference Center, Princeton, NJ, August 2003
Cognitive Science and Medical Informatics: Implications for Doctor-Patient Communication, Johns Hopkins University, November 2003.
Decision making under uncertainty, Basic and Applied Decision Making in Cancer Control Meeting, NCI, Bethesda, Maryland 12-13 February 2003.

2004

Beyond Cognition: Perceptions and Feelings in Young Adults' Risk-Taking Behavior. Saint Vincent's Hospital-Manhattan HIV Rounds, March 9th, 2004.
How Guidelines Influence Decisions of Physicians and Laypeople Regarding Medical and Health Problems. Faculty Research Seminar, Department of Biomedical Informatics, Columbia University March 11, 2004.
Cognitive Issues in the Prevention of Medical Errors. Invitational keynote Paper Presented at the eHealth Asia 2004 (MHIA) Conference, Kuala Lumpur, Malaysia, April 6, 2004.
Distributed Cognition and Medical Errors in Psychiatric Emergency Care, NIMH workshop on "Cognitive Perspectives on Mental Health Practice," May 4-5, 2004, National Institute of mental Health, Bethesda, MD.
Cognitive Science Foundation for Health Education and Policy: Examples from HIV-related Studies, The Human Development – Education division, The World Bank, May 5, 2004.

2005

The Role of Cognition in Changing Behavior: Understanding Safe Sex Practices and HIV concepts, An Advanced International Colloquium on Building the Scientific Mind (BtSM2005), The Hague, Netherlands, 17-20 May 2005.
How information influences behavioral change: James McDonnell Foundation workshop March 3-5, 2005 Grand Colonial Hotel, La Jolla, CA.
Models of Decision Making about Condom Use by Young Urban Adults, Workshop on Cognition and HIV-AIDS Education, sponsored by James S. McDonnell Foundation, Tarrytown House, NY January 8, 2005.
Health education and HIV: Role of informatics. Presented at National Technological University, Singapore, February 18th, 2005.
Why study cognition for HIV risks: Implications for Asia. Presented at Nicholas Piramal Research Centre, Mumbai, India, February 23rd, 2005.
Patterns of reasoning and condom use in young adults. HIV Grand Rounds, New York State Psychiatric Institute, March 31st, 2005.

2006

Cognition and Medical Decision-Making: More is not Better. Paper presented as a part of the Symposium organized by James S McDonnell Foundation, 'Does the Quantity of Information Enhance the Quality of Knowledge?' at AAAS February 19, 2006.
Cognitive Issues in the Development of Guidelines: Achieving Designer-User Compatibility. Invitational Symposium on Diffusion, Adoption and Maintenance of Psychiatric Treatment Algorithms International Psychopharmacology Algorithm Project (IPAP) and University at Buffalo School of Informatics, Buffalo, New York, May 5, 2006.
Cognitive Science and Biomedical Informatics. Presentation at the Workshop on Biomedical Informatics, University of Haifa, Haifa, Israel, May 15, 2006
To err is not entirely human, or is it? Keynote address at the Annual Meeting, Israeli Association for Medical Informatics, Tel Aviv, Israel, May 17, 2006.
Cognitive Science and Biomedical Informatics Workshop on Biomedical Informatics, Ben Gurion University Negev, Israel May 17, 2006.
Cognitive Complexity in Healthcare Applications: Issues of Patient Safety. Keynote at the Human Factors and Medical Informatics IMIA and EFMI Workshop, Lille, France, May 24, 2006.
Cognition and Nursing: Knowing Thinking and Doing. Keynote address at the International Nursing Informatics Conference 2006, Seoul, Korea, June 13, 2006.
Emerging Paradigms of Cognition in Medical Decision-Making. Keynote address at the Workshop on Medical Thinking: What We Know University College, London June 22-23, 2006.
Cognition and Informatics: Knowing, Thinking, and Doing. Keynote address at the Asia Pacific Association for Medical Informatics (APAMI) 2006, Taipei, Taiwan, October 28, 2006.

2007

Cognition and Patient Safety in Critical care. Paper presented at the 30th Annual Conference on Shock in Baltimore, Maryland June 10, 2007.
Managing Medical Errors: The Role of Cognition and Informatics. Keynote address at the International Patient Safety Congress in Anatalya, Turkey, March 28-31, 2007.
Interpreting Procedures from Descriptive Guidelines. Presentation at the Center for Excellence in Critical Care

Minnesota, Minneapolis, September 7, 2007.

Biomedical Informatics and the Science of Cognition. Keynote address to be presented at the Biennial Conference of the Indian Association for Medical Informatics in Kochi, India, November 17, 2007.

2008

Evidence Supporting the Role of Basic Medical Science in Clinical Practice. Inaugural presentation at the Biweekly Basic Medical Sciences Departmental Seminar Series, University of Arizona College of Medicine-Phoenix, January 16, 2008.

Errors in Medical Practice: Are Misadventures Inevitable? First presentation of the Mini- Medical School Spring 2008 Lecture Series, University of Arizona College of Medicine-Phoenix, March 5, 2008.

Cognition in the Generation and Management of Medical Errors. Internal Medicine Grand Rounds, Mayo Clinic, Scottsdale, Arizona, April 4, 2008.

User Interface Design and Usability Testing of EHRs and CPOEs. University of Michigan Medical School's Health Informatics Grand Rounds Lecture Series, May 16, 2008.

Cognitive Barriers to Optimal Data Quality and Use. University of Maryland School of Nursing, 18th Annual Summer Institute in Nursing Informatics, July 17, 2008.

Risky behavior and HIV. Opening panel keynote address at Second Annual Thought Leadership Symposium, Southwest Center for HIV/AIDS, Phoenix, Arizona. Hosted by the Flinn Foundation, September 12, 2008.

Invited member, AMIA – AAHC Design Session for BMI Competency, Nashville, Tennessee, October 2008.

Invited Member, The National Academies Keck Futures Initiative (NAKFI), Irvine, California, November 13-15, 2008.

2009

Cognitive Science Approach to Understanding Human-Computer Interaction in Medicine. Keynote address at the International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC), Porto, Portugal, January 14-18, 2009.

What's New in Critical-Care Errors? A Cognitive Perspective. Keynote address at the meeting on Situational Awareness and Distributed Cognition in the ICU, Whistler, Canada, February 25-27, 2009.

NLM-Sponsored Lectures in Biomedical Informatics. San Paolo, Brazil, March 4-8, 2009.

Translational Cognition: Cognitive and Social Science Foundation for Biomedical Informatics. Presentation at the Center for Biomedical Informatics, Mount Sinai Medical Center, New York, March 24, 2009.

New Human Abilities in the Connected Health Care Environment. Presentation at Meet the Experts: The Future of EHR, Kowloon, Hongkong, May 2, 2009.

Discerning Patterns of HIV Risk in Healthy Young Adults: Implications for Technological Interventions. Basic Medical Sciences Departmental Seminar Series, University of Arizona College of Medicine-Phoenix, May 7, 2009.

Debugging Myths: Curricula and Instruction in Biomedical Informatics. Keynote address at AMIA Academic Forum Third Annual Conference, Portland, Oregon, June 24, 2009.

Medical Professionals and HCI Professionals together–A view towards better systems. HCI 2009 Workshop 14, HCI4MED meeting in Cambridge, UK, September 5, 2009.

Innovation in Information Technology and Healthcare Workshop. Parc 55 Hotel, San Francisco, California, October 29-30, 2009.

Human Factors Engineering in Health Informatics: Future Challenges. Human Factors Engineering in Health Informatics' Symposium, Sonoma, California, November 12-13, 2009.

Facilitating Patients' Safe Access to Electronic Mental Health Records: A Proposed Cognitive Framework. IMIA-APAMI Working group 4 Conference, Hiroshima, Japan, November 24-27, 2009.

2010

The Mind's Eye in the Era of PHRs: Will it Need Glasses? Keynote address to the HICSS Healthcare Track, cosponsored by Cyber-Infrastructure for Public Health and Health Services' mini-track and the Kay Center, Kauai, Hawaii, January 6, 2010.

AMIA perspective on informatics and behavioral change. 31st Annual Meeting and Scientific Session, Behavioral Medicine: Building for the Future, Society of Behavioral Medicine, Seattle Washington, Apr 7, 2010.

How do Doctors Make Decisions? Healthcare Systems Management Research Seminar Series on Clinical Decision Making, Ottawa, Canada, April 23, 2010.

Creating a National Center for Cognitive Informatics in Biomedicine. Keynote address at the Taipei Medical University for the 50th Anniversary of TMU, Taipei, Taiwan, May 18-20, 2010.

Human-Centered Design and Assessment of Health Information Technology. Invitational seminar to graduate students and faculty, Taipei Medical University, Taipei, Taiwan, May 2010

Technology in Health Professions: Role in Teaching and Learning. UT Health Dental Faculty Retreat, South Shore Harbor, June 18, 2010.

Science and Craft in Educating Health Professionals: The Role of Clinical Reasoning. Keynote address to the American Association of Colleges of Pharmacy Annual Meeting, Seattle, Washington, July 10-14, 2010.

Medical Error and Failure. Scientia, an Institute for the History of Science and Culture, Rice University, Houston, Texas, October 5, 2010.

2011

Cognitive and Socio-Cultural Mediators for Team Communication in Critical Care Medicine. Workshop on Cultural Studies of Science, Rice University, Houston, Texas, January 21, 2011.

Discerning Patterns of HIV Risk in Healthy Young Adults, Cancer Prevention Research Institute of Texas (CPRIT) Fellowship Seminar, UT Health, School of Public Health, February 22, 2011.

Information Science and Technology for the Health: Role of Human Factors Engineering. The Sciences at UNAM: Building the future of Mexico, Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas, the Autonomous University of Mexico, Mexico City, Mexico, March 1-2, 2011.

Socio-Technical as well as Cognitive issues in implementation of HER. Beijing, China, June 8-9, 2011.

Scientific symposium celebrating the 50th anniversary of *Methods of Information in Medicine.* Heidelberg, Germany, June 9-11, 2011.

The Evolution of Medical Education: Back to the Future. Education Rounds to Celebrate 10-year anniversary of Centre for Medical Education, McGill University, Montreal, November 17, 2011.

Cognitive approaches to clinical data management for decision support: Is it old wine in new bottle? Keynote address to the Institute for Medical Informatics, Statistics and Documentation 7th USAB Conference: Information Quality of e-Health, Graz, Austria, November 25-26, 2011.

2012

The Need for Informatics Education and Training in Dentistry. 2012 Annual Meeting of Dental Education Association (ADEA), Orlando, Florida, March 21, 2012.

Health IT and Patient Safety: Current Status and Future Directions. Telfer School of Management, University of Ottawa, Canada, March 23, 2012.

Cognition, Informatics and Safe Care of Patients. School of Nursing, Columbia University, April 11th, 2012.

Clinical Errors and Patient Safety: The Role of Decision Support Systems. A panel presentation at the Nursing Informatics Conference (NI2012), Montreal, Canada, July 2012.

Clinical Bioinformatics: new challenges for human-centered decision-support systems. Panel presentation at Medical Informatics Europe (MIE 2012), Pisa, Italy, August 26th, 2012.

Model-based Approaches to Assessment of Cognitive Functions. In panel presentation on "Anticipating the Special Needs of the 21st Century Silver/Ageing Economy: From Smart Technologies to Services Innovation," OECD-WASEDA, University Joint Conference, Tokyo, Japan, September 12-13, 2012.

2013

The Overall Value of Evidence-Based Healthcare. In Panel Presentation at EmblemHealth Value Initiative Roundtable, Fordham University Global Healthcare Innovation Center, New York, NY, May 2, 2013.

Human-Computer Interaction: It's Not All About Technology. Invited Keynote Speaker at the 4th National Science Foundation-sponsored US-Turkey Advanced Study Institute on Global Healthcare Challenges-Plenary, Antalya, Turkey, June 16-22, 2013.

How to Detect and Exploit Non-Adherence to Guidelines? Panel presentation at MEDINFO 2013, the 14th World Congress on Medical and Health Informatics, Copenhagen, Denmark, August 20-23, 2013.

Development of Cognitive Expertise in Biomedical Informatics: It's More than the Coursework. AMIA Annual Symposium Proceedings, Washington, D.C., November 16-20, 2013.

Clinical Decision Making: Challenges for Decision Support. Invited Keynote Speaker at the 9th International Telemedicine Conference of Telemedicine Society of India (TELEMEDICON 2013), Jaipur, India, November 29-December 1, 2013.

2014

Cognitive Complexity and Decision Making in Health Care. Invited Keynote Speaker at International Conference on Recent Advances in Cognition and Health, Banaras Hindu University, Varanasi, India, January 23-25, 2014.

Cognitive Informatics and its Role in Patient Safety. Invited Speaker at International Symposium on Clinical & Translational Research Informatics, Melbourne, Australia, March 27-28, 2014.

It's not just what you'd think: Cognitive errors in the ICU. Invited Speaker at Critical Care Research Summit of the Society of Critical Care Medicine (SCCM), Atlanta, Georgia, April 9-11, 2014.

Nature of the "Beast" Characterizing Complexity in Intensive Care Unit. Invited Keynote Speaker at Frontiers in Intelligent Medicine Symposium, Kuala Lumpur, Malaysia, September 26-27, 2014.

New Approaches to Designing for HIT Usability. Invited Keynote Speaker at 2014 Conference of the Asia Pacific Association of Medical Informatics (APAMI), New Delhi, India, November 1-2, 2014.

Invited Speaker at CBIS 2014 Conference of the Brazilian Congress of Informatics in Health, Santos, Brazil, December 7-10, 2014.

2015

Cognitive Informatics: Studying and Advancing the Interplay Between Human and Computer Reasoning, Invited Keynote Speaker at International Conference on Cognitive Computing and Information Processing, Delhi, India, March 3-4, 2015.

Heath Information Technologies and Patient Safety: What is Current Evidence? Invited Speaker at McGill University Health Center Retreat, Montreal, Quebec Canada, May 21, 2015.

Cognitive Challenges for Safe Human Computer Interaction. Invited Speaker at World Congress on Medical Physics and Biomedical Engineering, Toronto, Ontario, Canada, June 7-12, 2015.

2016

Sensor-based Monitoring of Clinical Workflows in Emergency Rooms: Opportunities and Challenges, Invited Speaker for Center for Behavioral Cardiovascular Health series presented by Columbia University Medical Center, September 26, 2016.

Cognitive Disruptions and Noise Levels in Emergency Rooms: Implications for Environmental and System Design, Invited Speaker at Biomedical Informatics Seminar, Arizona State University, Scottsdale, AZ, February 19, 2016.

Team Communication and Errors in Complex Clinical Environments. Invited Speaker at Grand Rounds—Banner and Cardon Children's Medical Center, Mesa, AZ, March 3, 2016.

Panel discussion on *Terminologies: Reference terminologies, interface terminologies - roles and how they complement each other*, Chair and Discussant: Toward a Diagnosis Driven Profession 2016, Los Angeles, CA, March 19, 2016.

Cognition in Generating and Mitigating Clinical Errors, Invited Speaker for Crawford W. Long Lecture and Celebration of Science Seminar, Emory University School of Medicine, Atlanta, GA, March 21, 2016.

Usability in Healthcare—Current Understandings and Measurement, Invited Speaker for AMIA Webinar series presented by CIS-WG and the Implementation listserv Steering Committee, June 2, 2016.

Sensor-based Monitoring of Clinical Workflows in Emergency Rooms: Opportunities and Challenges, Invited Speaker for Informatics Intervention Research Collaboration series presented by Columbia University's Department of Biomedical Informatics, June 21, 2016.

Sensor-based Monitoring of Clinical Workflows in Emergency Rooms: Opportunities and Challenges, Invited Speaker for Center for Behavioral Cardiovascular Health series presented by Columbia University Medical Center, September 26, 2016.

Debunking Myths: Health Cognition and Medical Errors, Key Note Address, 5th International Conference on Recent Advances in Cognition and Health, Varanasi, India, December 19-21, 2016.

Invited Member, Innovation in Healthcare Summit 2016, Bangalore, India, December 23-25, 2016.

2017

Cognitive Informatics in Health and Biomedicine, Invited Speaker for Author's Night: "Marriage of Behavioral Medicine with Technology: Strange Bedfellows or Future Promise?", New York Academy of Medicine, New York, NY, November 13, 2017.

Cognitive Informatics for Biomedicine: Invited Speaker, Department of Health Informatics, Hofstra University, Hempstead, New York, November 15, 2017.

The Design of Clinical Information Systems: "It's the mind, stupid!", Presented at the Institute for Biomedical Informatics, University of Pennsylvania, Philadelphia, PA, December 17, 2017

2018

Innovative Methods based on R01 award supported by AHRQ. A Webinar presented to the Division of Health IT Team, AHRQ, March 21, 2018

2019

Patel, V.L. (2019). The Eighth International Conference on Global Health Challenges, GLOBAL HEALTH, 2019, September 22-26, Porto, Portugal.

International Conference on AI in Healthcare (ICAIH): Invited Speaker and Panel Member, July 19 – 21st, Alhambra, Los Angeles, California, USA.

International Autumn School on 'Cognitive Interfaces' Autumn School: Invited Keynote Speaker and Track Leader, Leibniz-Instituts fuer Wissensmedien (IWM), Tuebingen [Black Forest], Germany, October 8-11, 2019.

The Role of Cognitive Science in Developing Safe and Acceptable Clinical Technologies, Plenary lecture, International Conference on AIMed, 11-14 December,2019, The Ritz-Carlton, Laguna Niguel, CA, USA

2020

Human Cognition: A Guide to the Evolution of AI, International Conference on Artificial Intelligence in Medicine (AIME 2020): Invited Keynote Speaker (virtual), University of Minnesota August 25-27

Medical Expertise: Why and when is explanation needed?, Health Informatics Research Seminar, Weill Cornell School of Medicine, November 19, 2020

Mental-Health Task Shifting to Community Nurses via Smart Phones in Pacific Island Countries, Biomedical Informatics, College of Health Solutions, Arizona State University, Phoenix, AZ, February, 2020

2021

Understanding AI Systems for Clinical Practice: When Computation Meets Mind and Brain, AIMed [Artificial Intelligence in Medicine-US) Clinical Series , Surgery, ICU and Neurosciences, March 30-31st, 2021, Invited Keynote Speaker

Cognitive Informatics: Cognitive Science Meets Biomedical Informatics, Biomedical Informatics 208 Seminar, Stanford Medicine, April 14, 2021

*Improving Consideration of Social and Cognitive Behaviors in Advancing Informatics Technologies for Health Care*IEEE EMBS Biomedical Informatics, Virtual Conference, July 28-30, 2021, Invited Keynote Speaker

Understanding and Supporting Human Decisions in the Context of Medicine: From Individuals to Teams, Climate School Conversation "From Climate to Health: Multidisciplinary Approaches to Bridging Decisions across Scales, Columbia University, May 4, 2021

Augmenting Cognitive Capabilities and Intelligent Systems Support in Healthcare, a featured speaker in the annual seminar series at the University of Melbourne, Centre for Digital Transformation of Health. Dec 9, 2021

2022

Cognitive Informatics in Healthcare: Promises and Challenges at the *NextGen* Affordable Connected Healthcare and Challenge*s*, as part of IEEE Nethealth workshop, COMSNET 2022, Bangalore, India, January 4, 2022. Keynote talk

Cognitive Informatics in Healthcare: Promises and Challenges . Keynote speaker at the *NextGen Affordable Connected Healthcare and Challenges, as part of* IEEE Nethealth workshop, COMSNET 2022, *Bangalore*, India, January 4, 2022

Biomedical Informatics and the Science of Cognition: Featured speaker in 2022-23 interdisciplinary seminar series in *Cognitive and Computer Science*, University of Quebec in Montreal. March10, 2022

Cognition and AI: Featured speaker at the Author's Night as an editor of *Intelligent Systems in Medicine and Healthcare: Role of AI,* The New York Academy of Medicine, New York, NY, October 19th, 2022

Understanding and Supporting Human Decisions in the Context of Medicine: From Individuals to Teams, Climate School Conversation "From Climate to Health: Multidisciplinary Approaches to Bridging Decisions across Scales, Columbia University, May 4, 2021

Cognitive Informatics in Healthcare: Promises and Challenges at the *NextGen Affordable Connected Healthcare and Challenges*, as part of IEEE Nethealth workshop, COMSNET 2022, Bangalore, India, January 4, 2022

2023

Cognition and Neuroscience, an invited speaker for at the 31st Annual Suddath Symposium on "Biomedical Informatics and AI for Biodiscovery and Healthcare", Institute for Bioengineering and Bioscience (IBB), Georgia Institute of Technology, on March 15-16, 2023

Intelligent Systems in Medicine and Healthcare: Role of AI, BMI Seminar Series, ASU Health Futures Center, Phoenix, AZ. February 3, 2023

Cognitive Challenges in the Use of EHRs, invited talk, HL7 International Working Group on Reducing Clinical Burden, Virtual meeting, April 24, 2023

2024

Reducing cognitive load in clinical decision support systems. Invited talk, HL7 International group on EHRs and clinical burden, Virtual meeting. January 2024.

Understanding Clinical Cognition's Critical Role in the Future of Sustainable AI in Medicine. Invited talk, Clinical Translational Research Center, University of Buffalo, July 2024

2025

Opening Keynote address on Human Intelligence in Medicine in the Era of AI, at the International Society for Medical November 2025, Dubai

Reducing cognitive load in clinical practice. Invited talk, HL7 International group on EHRs and clinical burden, Virtual meeting. March 2025.

2026

Keynote address on Human intelligence, clinical judgement and medical decision-making at the International Symposium on Medical AI on The Renaissance of Clinical Intelligence, December 3-4 Florence, Italy

PUBLICATIONS

Journal Articles

1981

Dauphinee, W.D., Patel, V.L. & Scott, H.M. (1981) Effets des modifications du programme sur l'acquisition des connaissances en sciences fondamentales et sur les attitudes a l'agard de ces matieres. *L'Union Medicale du Canada, 110 (8),* 1-4.

1983

Patel, V.L. & Cranton, P. (1983) Transfer of student learning in medical education. *Journal of Medical Education, 58(2),* 216-235.

Dauphinee, W.D. & Patel, V.L. (1983) Early career choice: an unsuccessful program. *Journal of Medical Education, 58(9),* 695-702.

1984

Patel, V.L. & Dauphinee, W.D. (1984) Return to basic sciences after clinical experience. *Medical Education, 18(4),* 244-248.

1985

Patel, V.L. & Dauphinee, W.D. (1985) The learning environments in medicine, pediatrics and surgery clerkships. *Medical Education, 19,* 54-60.

Groen, G.J. & Patel, V.L. (1985) Medical problem solving: some questionable assumptions. *Medical Education, 19,* 95-100.

Cruess, R.L., Patel, V.L. & Groen, G.J. (1985) Basic science studies. (Response to the Editorial Comments.) *Journal of Medical Education, 60(3),* 208.

1986

Patel, V.L. & Groen, G.J. (1986) Knowledge-based solution strategies in medical reasoning. *Cognitive Science, 10,* 91-116.
Patel, V.L., Groen, G.J. & Frederiksen, C.H. (1986) Differences between students and physicians in memory for clinical cases. *Medical Education, 20,* 3-9.

1987

Schmidt, H.G., Dauphinee, W.D. & Patel, V.L. (1987) Comparing the effects of problem-based and conventional curricula in an international sample. *Journal of Medical Education, 62,* 306-315.
Coughlin, L.D. & Patel, V.L. (1987) Processing of critical information by physicians and medical students. *Journal of Medical Education, 62,* 818-828.
Eisemon, T.O., Patel, V.L. & Ole Sena, S. (1987) Uses of formal and informal knowledge in the comprehension of instructions for oral rehydration therapy in Kenya. *Social Science & Medicine, 25(11),* 1225-1234.
Hobus, P.O.M., Schmidt, H.G., Boshuizen, H.P.A. & Patel, V.L. (1987) Contextual factors in the activation of first diagnostic hypotheses: Expert-novice differences. *Medical Education, 21,* 471-476.

1988

Eisemon, T.O., Patel, V.L. & Abagi, J. (1988) Read these instructions carefully: Examination reform and improving health education in Kenya. *International Journal of Educational Development, 7,* 1-12.
Eisemon, T.E. & Patel, V.L. (1988) Improving health education in Kenya. *McGill Journal of Education, 23(1),* 17-36.
Patel, V.L., Groen, G.J. & Scott, H.S. (1988) Biomedical knowledge in explanations of clinical problems by medical students. *Medical Education, 22(5),* 398-406.
Patel, V.L., Eisemon, T.O. & Arocha, J.F. (1988) Causal reasoning and treatment of diarrheal disease by mothers in Kenya. *Social Science & Medicine, 27(11),* 1277-1286.

1989

Percival, L.J. & Patel, V.L. (1989) Family planning methods vary in Zimbabwe. *The Canadian Nurse, May* 40.
Patel, V.L., Evans, D.A. & Groen, G.J. (1989) On reconciling basic science and clinical reasoning. *Teaching & Learning in Medicine: An International Journal, 1(3),* 116-121.
Eisemon, T.O. & Patel, V.L. (1989) Understanding instructions for oral rehydration therapy. *World Health Forum, 10,* 365-368.
Schmidt, H.G., de Grave, W.S., de Volder, M.S., Moust, J.H.C. & Patel, V.L. (1989) Explanatory models in the processing of science text: The role of prior knowledge activation through small-group discussion. *Journal of Educational Psychology, 81(4),* 610-619.

1990

Patel, V.L., Eisemon, T.O. & Arocha, J.F. (1990) Comprehending instructions for using pharmaceutical products in rural Kenya. *Instructional Science, 19,* 71-84.
Joseph, G.-M. & Patel, V.L. (1990) Domain knowledge and hypothesis generation in diagnostic reasoning. *Medical Decision Making, 10,* 31-46.
Norman, G.R., Patel, V.L. & Schmidt, H.G. (1990) Clinical inquiry and scientific inquiry. *Medical Education, 24,* 396-399.
Patel, V.L., Evans, D.A. & Kaufman, D.R. (1990) Reasoning strategies and use of biomedical knowledge by students. *Medical Education, 24,* 129-136.
Patel, V.L., Groen, G.J. & Arocha, J.F. (1990) Medical expertise as a function of task difficulty. *Memory & Cognition, 18(4),* 394-406.
Eisemon, T. O., & Patel, V.L. (1990) Strengthening the effects of schooling on health practices in Kenya. *International Journal of Health Education, X (3),* 21-29.

1991

Kaufman, D.R. & Patel, V.L. (1991) Problem solving in the clinical interview: A cognitive analysis of the performance of physicians, residents, and students. *Teaching and Learning in Medicine: An International Journal, 3(1),* 6-14.
Patel, V.L., Kaufman, D.R. & Magder, S. (1991) Causal reasoning about complex physiological concepts by medical students. *International Journal of Science Education, 13(2),* 171-185.
Patel, V.L., Groen, G.J., & Norman, G.R. (1991) Effects of conventional and problem-based medical curricula on problem solving. *Academic Medicine, 66(7),* 380-389.
Patel, V.L., & Groen, G.J. (1991) Developmental accounts of the transition from student to physician: Some problems and suggestions. *Medical Education, 25,* 527-535.

1992

Eisemon, T.O., Ratzlaff, J., & Patel, V.L. (1992) Reading instructions for using commercial medicines: When do literacy and numeracy become functional? In D.A. Wagner and L.D. Puchner (Spec. Eds.), World Literacy in the Year 2000 (pp. 76-90). *The Annals of the American Academy of Political and Social Science.*

1993

Patel, V.L. & Groen, G.J. (1993) (Editorial). Re-analysis: Recalibration versus replication. *Medical Decision Making, 13(1),* 2-3.
Patel, V.L. & Groen, G.J. (1993). Comparing apples and oranges: Some dangers in confusing frameworks with theories. *Cognitive Science, 17,* 135-141.
Patel, V.L., Groen, G.J., & Norman, G.R. (1993) Reasoning and instruction in medical curricula. *Cognition & Instruction, 10(4),* 335-378.

Percival, L.J. & Patel, V.L. (1993) Sexual beliefs and practices by women in urban Zimbabwe: Implications for health education. *McGill Journal of Education, 28(2),* 253-268.

Patel, V.L. (1993) Report: NATO Advanced Scientific Research Workshop, June 1991. Models of cognitive medical training and practice. *Medical Education, 27,* 289-290.

Arocha, J.F., Patel, V.L., & Patel, Y.C. (1993) Hypothesis generation and the coordination of theory and evidence in medical diagnostic reasoning. *Medical Decision Making, 13,* 198-211.

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Patel, V. L & Cohen, T.A, Clinical Cognition and AI: From Emulation to Symbiosis. In : Cohen TA, Patel VL, and Shortliffe EH (Eds)), *Intelligent Systems in Medicine and Health: The Role of AI.* 2022, Springer, London, UK

Patel, V. L & Dev, P, Intelligent Systems in Learning and Education. In: Cohen TA, Patel VL, and Shortliffe EH (Eds)), *Intelligent Systems in Medicine and Health: The Role of AI.* 2022, Springer, London, UK

Shortliffe, E.H, Sepùlveda,M-J, and **Patel, V.L**, Framework for the Evaluation of Clinical AI Systems. In: Cohen TA, Patel VL, and Shortliffe EH (Eds)), *Intelligent Systems in Medicine and Health: The Role of AI.* 2022, Springer Nature, Switzerland AG, 539-551, 2022

2023

VL Patel, J Shellum, T Miksch, EH Shortliffe Human-intensive techniques, R Greenes Eds) Clinical Decision Support and Beyond, Elsevier, 2023

2024

VL Patel, Kaufman, DR &. Kannampallil, T.G., (2024). A Multi-disciplinary Science of Human Computer Interaction in Biomedical Informatics. In A. Kushniruk, DR Kaufman, TG Kannampallil, T.G, &. VL, Patel, (Eds.), *Human Computer Interaction in Healthcare*: *Role of Cognition*, 2nd edition, Cognitive Informatics in Biomedicine and Healthcare, Springer Nature Switzerland,2024

DR Kaufman, Kannampallil, T.G., & **Patel, V.L.** (2015). Cognition and Human Computer Interaction in Health and Biomedicine. In A, Kushniruk, DR, Kaufman, TG, Kannampallil, T.G, & VL, Patel, (Eds.), *Human Computer Interaction in Healthcare*: Role of Cognition, 2nd edition, Cognitive Informatics in Biomedicine and Healthcare, Springer Nature Switzerland, 2024

A Kushniruk, Kaufman, DR, Kannampallil, TG., &. **Patel, VL** Looking Forward: The Role of Human Computer Interaction and Cognition in Healthcare. In A, Kushniruk, DR, Kaufman, TG, Kannampallil, T.G, & VL, **Patel,** (Eds.), *Human Computer Interaction in Healthcare*: Role of Cognition, 2nd edition, Cognitive Informatics in Biomedicine and Healthcare, Springer Nature Switzerland, 2024

A Vankipuram and **Patel, VL** Automated location tracking in clinical environments: A review of systems and impact on workflow analysis in the ER. *In Cognitive Informatics: Reengineering Clinical Workflow for More Efficient and Safer Care.* Eds: Kai Zheng, Johanna Westbrook, & Vimla L. Patel. 2024, Springer Nature, Switzerland, 2024

2025

K Zheng, Westbrook, J & Patel, VL, Clinical Workflow: The Past, Present and Future, *In Cognitive Informatics: Reengineering Clinical Workflow for More Efficient and Safer Care.* K. Zheng et al. (eds.), Springer Nature Switzerland AG, 2025

2026

ZinZin (Katie) Zhu et al, *Leveraging Global data for Real-World insights and Evidence generatio,* Z.Zhu et al. (eds.), Springer Nature Switzerland AG, 2026

K Cresswell et al, *Evaluating AI in Healthcare and Biomedicine: Foundations for Evidence-Based Decision Making in the Digital Age.* K. Cresswell et al. (eds.), Springer Nature Switzerland AG, 2026

PK Dutta et al, *Empowering Communities for Health Justice: Digital Health and Financial Literacy in Participatory Decision-Making*. PK. Dutta et al. (eds.), Springer Nature Switzerland AG, 2026

2027

MA Gutierrez et al, *Data-Driven and AI-Augmented Cardiovascular Decision Making.* MA Gutierrez et al. (eds.), Springer Nature Switzerland AG, 2027

S Khairat et al, AI Implementation and evaluation in Public Health. *S Kharat* et al. (eds.), Springer Nature Switzerland AG, 2027

SN Rai et al*, Cognitive Informatics for Aging and Neurodegenerative Disorder: Behavioral, Computational, and Clinical Perspectives*. SN Rai et al. (Authors.), Springer Nature Switzerland AG, 2027

Books/Special Issues

1988-1998

V.L. Patel and G.J. Groen (Eds.). (1988) *Proceedings of The Tenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Lawrence Erlbaum Associates.

D.A. Evans and V.L. Patel (Eds.). (1989) *Cognitive Science in Medicine: Biomedical Modeling.* Cambridge, MA: MIT Press.

D.A. Evans and V.L. Patel (Eds.). (1992) Advanced Models of Cognition for Medical Training and Practice, NATO ASI Series F: Computer and Systems Sciences, Volume 97. Heidelberg, Germany: Springer-Verlag GmbH & Co. Kg.

V.L. Patel (Ed.) (1998) Distributed and collaborative cognition in health care: Implications for systems development. Special issue of *Artificial Intelligence in Medicine.* Vol.12, No. 2.

J. Moehr, V.L. Patel & G. Browman (Eds.). (1998) HEALNet, a Canadian Health Informatics Collaboration. A special issue of *International Journal of Medical Informatics.* Amsterdam, Netherlands: Elsevier Science, Ireland; Vol. 51, 2-3.

C.G. Chute, R.H. Baud, J.J. Cimino, V.L. Patel, A.L. Rector (Eds.). (1998) Coding and language processing. Special issue of *Methods of Information in Medicine.* Vol. 37, No. 4-5.

2000-2003

V.L. Patel (2000) Cognitive and Social Sciences Foundations for Medical Education and Training in the Information Age. A special issue of *Journal of Clinical and Investigative Medicine*; 23(4) 256-60.

V.L. Patel, R. Rogers & R.Haux (Eds) (2001) Book Series: Informatics and Health Technology for Global Health September, *Proceedings of MEDINFO*, London, UK, Vol. 84.

V.L. Patel & A. Hasman (Eds) (2002) A special issue of *International Journal of Medical Informatics.* Amsterdam, Netherlands: Elsevier Science, Ireland; Vol. 68 (1-3).
V.L Patel & D. Bates (Eds) (2003) A special issue of *Journal of Biomedical Informatics* on "Cognition and Measurement in "Patient Safety Research" Amsterdam, Netherlands: Elsevier Science

2011-2015

V.L. Patel, K. Kahol & T. Buchman (Eds) (2011) A special issue of *Journal of Biomedical Medical Informatics* on "Biomedical Complexity and Error."
V.L. Patel, D. Kaufman & T. Cohen (Eds) (2014) *Cognitive Informatics in Health and Biomedicine: Case Studies on Critical Care, Complexity and Errors* with preface by Vimla L. Patel. Springer (London, UK).
V.L. Patel, T. Kannampallil & D. Kaufman (Eds) (July 2015). *Cognitive Informatics in Health and Biomedicine: Human Computer Interaction*. Springer (London, UK).
Ashish Gupta, R. A. Greenes and VL Patel (Eds, December 2015) *Advances in Healthcare Informatics and Analytics*, Springer (New York, USA)
Patel, V.L. & Kannampallil, T. (2015). Special Virtual Issue on Cognitive Informatics in Biomedicine and Healthcare, *Journal of Biomedical Informatics*

2016-2019

Kannampallil, T and Patel, VL. (2016). Cognitive informatics methods for interactive clinical systems, *Journal of Biomedical Informatics. Special Issue*
Shortliffe, E.H., & Patel, V.L. (2016). Foreword. In de Fatina Marin, H., Massad, E., Sigulem, D., Gutierrez, M.A., & Rodrigues, R.J. (Eds). Global Health Informatics Amsterdam, Netherlands: Elsevier.
Patel. V.L., Arocha, J.F., & Ancker, J. (2017). *Cognitive Informatics in Health and Biomedicine: Understanding and Modeling Health Behaviors.* Springer: London.
Kannampallil, TG & Patel, VL. (2017). Special Issue on Cognitive Informatics Methods for Interactive Clinical Systems, *Journal of Biomedical Informatics*
Zheng K, Westbrook J, Kannampallil T, and Patel V. L, Eds: *Cognitive Informatics: Reengineering Clinical Workflow for More Efficient and Safer Care*. 2019, Springer, London, UK

2022

Cohen TA, Patel VL, and Shortliffe EH (Eds)), *Intelligent Systems in Medicine and Health: The Role of AI.* 2022, Springer, London, UK http://www.shortliffe.net/AIM-textbook.html

2024

A Kushniruk, D. Kaufman, T. Kannampallil & V.L. Patel (Eds). *Human Computer Interaction*: *Role of Cognition,* in *Cognitive Informatics in Health and Biomedicine:* Springer Nature Switzerland AG, 2024

2025

Zheng K, Westbrook J and Patel VL, Eds: *Cognitive Informatics: Reengineering Clinical Workflow* in the Digital and AI Era: Toward Safer and More Efficient Care: Second Edition, Cognitive Informatics in Biomedicine and Healthcare, Springer Nature Switzerland AG, 2025

2026

ZinZin (Katie) Zhu et al, *Leveraging Global data for Real-World insights and Evidence generatio,* Z.Zhu et al. (eds.), Springer Nature Switzerland AG, 2026
K Cresswell et al, *Evaluating AI in Healthcare and Biomedicine: Foundations for Evidence-Based Decision Making in the Digital Age.* K. Cresswell et al. (eds.), Springer Nature Switzerland AG, 2026
PK Dutta et al, *Empowering Communities for Health Justice: Digital Health and Financial Literacy in Participatory Decision-Making*. PK. Dutta et al. (eds.), Springer Nature Switzerland AG, 2026

2027

MA Gutierrez et al, *Data-Driven and AI-Augmented Cardiovascular Decision Making.* MA Gutierrez et al. (eds.), Springer Nature Switzerland AG, 2027
S Khairat et al, AI Implementation and evaluation in Public Health. *S Kharat* et al. (eds.), Springer Nature Switzerland AG, 2027
SN Rai et al*, Cognitive Informatics for Aging and Neurodegenerative Disorder: Behavioral, Computational, and Clinical Perspectives*. SN Rai et al. (Authors.), Springer Nature Switzerland AG, 2027

Miscellaneous Publications

Patel, V.L. (Winter, 1993) Tribute to Guy J. Groen. *McGill Journal of Education,* 28(1), 145-149.
Patel, V.L. (Spring, 1993) Tribute to Lynda J. Percival. *McGill Journal of Education,* 28(2), 343-344.
Patel, V.L., Kaufman, D.R., & Arocha, J.F. (Spring, 1995) From Bedside to Bench: In Search of Science in Medical Education. *A Tribute to Richard L. Cruess*.

Patel, V.L. & Arocha, J.F. Paradigms for Research in Profession Education, Professions Education Research Quarterly. 18(1), 2-5, 1996.
Patel, V.L. Tribute to Thomas O. Eisemon. (1998) *McGill Journal of Education,* 33(2), 221-222.
Patel, V.L. (1999) Review of "The Adolescent Alone: Decision Making in Health Care in the United States" *Cambridge University Press*.
Patel, V. L (2015). Preface of *Cognitive Informatics for Biomedicine: Human Computer Interaction in Healthcare*, xi-xiii. Springer: London
Patel, V.L. (2017). Preface of *Cognitive Informatics for Biomedicine: Understanding and Modeling Health Behaviors*. Springer: London
Patel, V.L. & Arocha, J. F. (2001) Review of 'Decision Making in Health Care: Theory, Psychology and Applications'. *Applied Cognitive Psychology* 15: 1-2.
Patel, V.L (2005). Tribute to Yogesh C. Patel, Proceedings of the *Royal Society of Canada.*
Patel, V. L., Riccardo Bellazzi, Silvana Quaglini (2010). *In Memoriam: 'Professor Mario Stefanelli (1945–2010)' Journal of Biomedical Informatics*, 859–60.
Patel, VL (2023), *Walter Kintsch: Children's Stories to Medical Narratives,* Celebration of Walter Kintsch's life.

Training of Fellows and Graduate Students

Postdoctoral fellows

McGill University
Marco F. Ramoni, Ph.D. (1993-1994),

Malathi Sivaramakrishnan, Ph.D. (1991-1994)

David D. Kaufman, PhD. (1992–1996)

Margje Van De Wiel, PhD. (1996)

Jose Arocha, Ph.D. (1991-96)

Eugene J.F.M. Custers, Ph.D. (1997)

Andre Kushniruk, Ph.D. (1998-2000)

Columbia University
Tate Kubose, Ph.D. (2000-2002)

Mark Graham, Ph.D. (2002-2003)

Alla Kesselman, Ph.D. (2001-2004)

Laura Slaughter, (2002-2004)

Jan Horsky, MA (2005)

Cathryn Galanter (2005-2009) NYS Psychiatric Institute, K-Award

University of Texas, Houston
Guido Schauer (2009-2011)

Min Zhang (2009- 2011)

Joanna Abraham (2009- 2011)

Velma Payne (2010-2010)

Research Fellows

Nicole A. Yoskowitz, BS,MA (2007-2009)

Thomas G. Kannampallil, MS (2009-2011)

Sahiti Myneni, MSE (2009-2011)

Suchita Batwara, MD,MPH (2010-2011)

Joanna Abraham, PhD (2011- 2013)

Doctoral Students

McGill University
José Arocha, Ph.D. (1988 - 1991)
Clinical Case Similarity and Diagnostic Reasoning in Medicine

Judith Leprohon, Ph.D. (1987 – 1991)
Nursing Clinical Decision Making in the context of Telephone Interactions

Malathi Sivaramakrishnan, Ph.D. (1989 – 1991)
Reasoning About Causality and Treatment of Childhood Nutritional Deficiencies in Rural India - Role of Indigenous Knowledge and Practices

David Kaufman, Ph.D. (1989 – 1992)
Conceptual Understanding of Complex Biomedical Concepts: Cardiac Output and Its Regulation

Rakesh Kumar Chaturvedi, M.D., Ph.D. (1990 - 1994)
Reasoning About Therapeutic and Patient Management Plans in Respiratory Medicine

Reza Tavakoli, Ph.D. (1991 - 1993)
Knowledge, Attitudes, and the Understanding of Family Planning: The Urban Male Perspective in Iran

Rebecca Lam, Ph.D.(1991 - 1994)
Acupuncturists' Clinical Problem-Solving Strategies (co-supervisor with T. Eisemon). Co supervised with Thomas Eiseman, Dept. of Educational Psychology, McGill University

Ligia Salazar, Ph.D. (1993 - 1996)
The Management of Health Information by the Community in Colombia

Lambert Farand, M.D., PhD.(1992 - 1996)
Epistemic Articulation of Medical Knowledge and Intelligent Computer Assisted Instruction

Eliana Coelho, Ph.D. (1994 - 1997)
Réutilisation de méthode de résolution de problème dans les systèmes à base de connaissances. Co-supervised with Guy Lapalme, Dept. of Computer Science, Université de Montréal

André Kushniruk, Ph.D. (1992-1998)
Cognitive Models for Decision Support in Intensive Care

Kayla Cytryn, R.N. Ph.D. (1995 - 2000)
Decision Making about Myocardial Infarct by Lay People

Leanna Zozula (1995 - 2001)
Therapeutic Reasoning as a Function of Aging and Medical Expertise

Columbia University
Jan Horsky, M.A. (2001- 2005)
A Framework for Analyzing the Cognitive Complexity of Computer-Assisted Clinical Ordering

Trevor Cohen, MB. ChB. (2003 - 2007)
Augmenting expertise: Computer-enhanced clinical comprehension in psychiatry

Arizona State University

Joanne Olsen, R.N. (2007 to 2010) Arizona State University, College of Nursing

Mithra Vankipuram (2007 to 2009) (Co-Mentor)
Understanding Adaptive Behaviors in Complex Clinical Environments

Gazi Aslam (2009-2011), (Co-Mentor)
Affordable, Web-Based Surgical Skill Training and Evaluation Tool

Rachel Satter (2009-2011),
Avatar-Based Simulation in the Evaluation of Diagnosis and Management of Mental Health Disorders in Primary Care

Prabal Khanal (2011-2014)
Design, Development and Evaluation of Collaborative Team Training Method in Virtual Environment for Time-critical Medical Procedures

Akshay Vankipuram (2015-18)
Utilization of automated location tracking for clinical workflow analytics and visualization

Wasif Bokhari (2017-2021), Computer Science, Arizona State University

Lu Zheng (2018-2021), Biomedical Informatics, Co-Mentor)
A Data-Triangulating Workflow Analysis and Optimization Framework in PreOp Department

Hiral Soni (2017-2020), Co-Mentor)
Informatics Approaches to Understand Data Sensitivity Perspectives of Patients with Behavioral Health Conditions

Master's Students

McGill University

Meeta Goel, M.A. (1982-1984)
Integrative Processes and Acquisition of Clinical Knowledge by Medical Students

Lenny Babins, M.A. (1983-1985)
Group Approaches with the Disoriented Elderly: Reality and Validation Therapies

Vivian Medley-Mark, M.A. (1985-1987)
The Relationship Between Premedical Background and Processing of Medical Information by Novices

Guy-Marie Joseph, M.A. (1985-1987)
The Time Course of Diagnostic Information Processing: Levels of Expertise and Problem Representation

Lynda Percival, M.Ed. (1986-1988)
Traditional and Modern Methods of Contraception Used by Women in Zimbabwe

Aldo Braccio, M.A. (1986-1988)
On-Line Analysis of Novice Problem Solving in Medicine

Stephen Chase, M.A. (1987-1989)
The Effect of Physician-Interaction on Patients' Understanding of Their Illnesses

David Kaufman, M.A. (1987-1989)
Representation and Utilization of Information during the Clinical Interview in Medicine

Dina Josif, M.A. (1990-1992)
Cognitive Assessment of a Certification Examination in Endocrinology.

Michael Leccisi, M.A. (1994-1996)
Decision-Making in the Real World Clinical Environment

Columbia University

Thomas White, MA (1998-2001)

Pallav Sharda, MBBS, MA (2001-2003)
Transition From Paper to Electronic Medical Records: Issues with Transfer of Narrative text

Roman Trakhtenberg, MA (2000-2003)
Computational Modeling of Cognitive Processes in Health

Jackie Hong, DDS, MA (2001-2003)
A Framework to Characterize the Acquisition of Expertise in Orthodontics

Sameer Malhotra, MBBS, MA (2003-2005)
Designing the design phase of critical care devices: a cognitive approach

Archana Laxmisan, MBBS, MA (2003-2005)
Decisions about critical events in device-related scenarios as a function of expertise

Bhanu Bahl, MBBS, MA (2003-2005)
Cognitive Evaluation of User Interface for Phase I Clinical trials

Daniel Karlin, BS, MA (2003-2005)
Socio-cultural and Organizational Aspects of Impatient Child and Adolescent Psychiatry and the Quality of Decision Making

Forogh Hakimzhada, BA (2004-2006)
Infrastructural Problems and Technological Solutions for Dealing with HIV/AIDS in Under-developed Countries: Afghanistan as a Case Study.

Mary Parker Little, RN, MSN (2013-15)
Overreliance and Under-reliance on Health Information Technology

Arizona State University

Deepa Madathil, MS (2007-2009)
Internet as a Resource for Health Information in Young Adults

Pallavi Shetty,MA (2007-2009)
Team Interactions in Critical Care

Sarah Ruth Martin, MS (2007-2009)
Process Redesign for Quality Improvement in the Pre-Operative Center: A Clinical Informatics Intervention

William Wilkinson, RN, DrPH, JD (2008-2010)
Medical Error Detection and Recovery in Nursing

Alexander Dragotoniu, BS (2008-2010)
Cognitive Biases in Decision Making by Clinicians and Lay Persons

Xuan Feng (2007-2009)
Cognitive Task Analysis in evaluation of electronic health record system: Cognitive Distribution as a function of complexity

Craig Cott (2012-15)
A Cognitively-Driven, Knowledge-Based EHR User Interface Design for Outpatient Psychiatry

Wasif Bokhari (2014-15)
Improving resuscitation outcomes during intensive patient care Development and use of an iPad-based resuscitation code blue sheet

Joshua Frisby (2014-15)
Contextual Computing: Tracking Healthcare Providers in the Emergency Department via Bluetooth Beacons

Harsh Damania (2015-2016) (School of Computing and Engineering)
Exploring the Use of Tablets for Emergency Room Documentation

Naveen Kumar Sibbiah (2016-17)
Improving usability and adoption of tablet-based EHR applications

Naomi Gallagher (2018-19)
The Benefits and Challenges of Integrating Health and Wellness apps into an EHR

Kayla Fitzgerald (2019-20)
Guidelines for Identification of At-Risk Eating Disorders Among Fashion Models

Sravya Ponnapalli (2020-21)
Lost in Translation: Errors in interpreting quality into quantity - The case of clinical guidelines on a mental health mobile application

Alisha Thomas (2020-21)
Beyond Listening: Understanding Patient Problem using Mobile Technology Support in Mental Health

Meaghan Wilson (2021-2022)
Telemedicine for the Care of Patients with Neuromuscular Disorders: A Literature Review

Undergraduate
Capstone project advisor/ Internship Mentor Honors Program
Pieria Ortiz (Summer 2006-2008)
Undergraduate bioengineering program, ASU
Sravya Ponnapalli (2021): *Lost in Translation*: *Errors in interpreting quality into quantity - The case of clinical guidelines on a mental health mobile application,* Undergraduate Honors, College of Health Solutions, ASU
Alisa Thomas (2021) : *Beyond Listening: Understanding Patient Problem using Mobile Technology Support in Mental Health,* Undergraduate Honors, College of Health Solutions, ASU

K-12 Outreach
Pooja Rajguru, Corona del Sol High School, Gifted Students Program, Tempe, Arizona
Understanding depression in High School students

Supervision of Undergraduate Honors and Summer Students
Harley Rumelson, Department of Medicine, Use of Intelligent Tutoring Systems Environment to Study Behavior of Expert Physicians. Elective program.
Sébastien Gilbert-R, Department of Medicine, Human and Machine Decision Processing: Towards Better Understanding for Interaction. Elective program
Dao Nguyen, Arron Hexdall & Tim Runge, A Dynamic Model of Community-Oriented Training in Infectious Diseases. Department of Medicine Elective program.
Rosemary Hansen, Department of Educational Psychology, McGill University. Quality Mother-Child Interaction.
Ludrick St.-Bryce, Department of Educational Psychology Trinidad University. Evaluation of Teaching and Learning in Tertiary Education.

Maria Saiz, Department of Educational Psychology, McGill University. Calculating Quantities as Procedures in Medical Education.
Laura Vidalis, Department of Computer Science, Concordia University. Lay Models of Causality and Treatment of Disease by Mothers with Different Ethnic Backgrounds.
Beate Schlenker, Universitaet Regensburg, West Germany. Knowledge Elicitation Texts Pertaining to Medical Diagnosis.
Shirley Nadell-Packer, Department of Educational Psychology and Counseling. Methods of Qualitative Data Analysis.
Wilu Isler, CEGEP Student (Quebec). Understanding of Infectious Processes and Its Relationship to Practice by Youths.
Vanessa Allen, (1997), Department of Psychology, Cognitive Strategies in Doctor-Patient Interaction. Honors thesis.
Marco Vernacchia, (1997), Department of Psychology, Computer-based Patient Record Systems: Knowledge Organization by Physicians. Honors thesis.
Eric Poole, (1994 - 1996) Department of Psychology, Group Decision Making in Medical ICU. Honors thesis.
Leanna Zozula, (1994 - 1995), Department of Psychology, Diagnostic Reasoning as a Function of Aging and Expertise. Honours thesis.
Sarah Kim, (1999), Department of Psychology, Diabetes guideline representation at the point of care in Medicine. Honors thesis.
Jo-Ann Wilkins, (1999), Department of Psychology, Procedural (Diagrammatic) Representations of Clinical Guidelines. Honours thesis.
Maria Myolopulos, (1999), University of Toronto, Department of Psychology. Decision making for children in English setting.
Stephanie Lloyd, (1998-1999), Department of Anthropology, Decision Making in Emergency Medicine for adults.
Daniel Cournoyer, (1999 - 2000), Department of Psychology, HIV transmission: Behavior and education in youths. Honors thesis.
Laurie Barkun, (1999 - 2000) Department of Psychology, Analysis of Patient-Doctor Interaction.
Timothy Branch, (1999 - 2001) Department of Psychology, Decision making by youth in HIV context.
Melissa Diermeier, (1999 - 2001) Department of Psychology, Representation of clinical guidelines.
Steven Simmons, (2005) Department of Biomedical Informatics.
Lily Gutnik, (2003- present) Undergraduate Psychology program, NYU, New York.
Neeti Doshi, (2006) HIV Center for Clinical and Behavior Studies at Columbia University Medical Center.
Elizabeth Nehemiah (Summer, 2006) Undergraduate Psychology program, Holy cross College, Boston, MA.
Pieria Ortiz (Summer 2006 and all year 2009). Undergraduate Engineering program.

Alisha Thomas (2021), Undergraduate Honors, College of Health Solutions, ASU
Sravya Ponnapalli (2021), Undergraduate Honors, College of Health Solutions, ASU

SUMMARY OF GRANTS

CURRENT GRANTS

PENDING GRANTS

R21-R33: **NICHD** (PI: Avishek Choudhury) 07/01/2026 - 08/31/2029
A smart mHealth application to minimize preventable maternal mortality due to severe anemia and preeclampsia in low and middle-income countries.
Role: Co-investigator

COMPLETED (PAST GRANTS up to 2002)

K08HS024598 (PI: Lauren Wasson) 09/01/2016-08/31/2021
Agency for Healthcare Research and Quality (AHRQ)
Using Health Information Technology to Improve Diagnosis of Cardiovascular Disease In The Emergency Department
The specific objective of this proposal is to develop a health information technology (HIT) tool-based intervention to improve diagnosis of ACS in the "paradigmatic complex system"15 of the adult emergency department (ED) at New York-Presbyterian Hospital – Columbia University, using the framework of cognitive hygiene.
Role: Co-mentor; Mentor as needed

R01 HS22670-01A1 (PI: Vimla L. Patel) 09/01/14 - 08/30/18
Agency for Healthcare Research and Quality (AHRQ)
Impact of Meaningful Use on Clinical Workflow in Emergency Departments
We will capture, analyze, and characterize the impact of EHRs over MU criteria Stages 1 and 2 to inform future MU compliant implementation strategies. This research will contribute to the development of patient-safety and quality guidelines

for EHR improvement that may be suitable for incorporation into future MU stages, certification criteria for EHR vendors, and future regulations promoting meaningful use of EHRs.

R21MH114621 (PI: Madurai Iyengar) 07/01/2017- 06/30/2019
National Institute of Mental Health (NIMH)/ Brain Science Section:
Cognitive analysis of MHealth tool use by community health workers for early identification of depression and suicide risk in Pacific Island Countries
Role: Co-PI: Investigator with expertise in cognitive analysis of clinical protocols and decision support with health information technology for public health

JSMF 220020152 (PI: Vimla L. Patel) 11/01/07 - 11/01/14
James S McDonnell Foundation
Cognitive Complexity and Error in Critical Care
This is an interdisciplinary multi-site collaborative research dedicated to the modeling of complexity errors in critical care.

R01 LM009239-01 (PI: David Foran; Co-Investigator: Vimla L. Patel) 09/30/07 - 09/29/16
National Library of Medicine (NLM)
Image Mining for Comparative Analysis of Expression Patterns in Tissue Microarray.
The central objective of the research is to evaluate a content-based image retrieval system for performing quick, reliable comparative analysis of expression patterns in cancer tissue microarrays. The overall goals are to increase utilization of a dental diagnosis terminology, decrease error rates of diagnosis term entry, increase provider satisfaction with the dental diagnosis entry process, and increase the number of dental schools.

R01: NIH (PI: Muhammad Walji, UTH; Investigator: Vimla L. Patel) 03/01/13 - 08/31/15
Developing a Patient Safety System for Dentistry
To determine threats to patient safety, by developing the tools necessary to document dental adverse events (AEs), generating a classification scheme and repository that can help organize and link AEs within five collaborative sites**.**

R01: NIH (PI: Elsbeth Kalenderian; Co-PI: Vimla L. Patel) 07/01/10 - 06/30/14
Harvard School of Dental Medicine
A Cognitive Approach to Refine and Enhance Use of a Dental Diagnostic Terminology

90TR000401 (PI: Jiajie Zhang; Co-PI: Vimla L. Patel) 04/01/10 - 03/14/14
ONC-SHARP
National Center for Cognitive Informatics and Decision Making in Healthcare: The goal is to develop a national resource for providing strategic leadership in patient-centered cognitive support research and application in healthcare (I gave up this award when I left UTH in August 2011).

1R41 CA105217-01A1-STTR (PI: Steven Bova; Co-PI: Vimla L. Patel) 10/01/06 - 06/30/11
NIH/NCI
Bioscience Research Integration Software Platform
The research involves investigative evaluation of scientific practices and productivity in two laboratories at Hopkins, followed by implementation of a prototype software platform developed initially at Hopkins and now licensed and under development by BioFortis Inc.

5 T32 HS017586-04 (PI: Vimla L. Patel) 07/01/08 - 06/30/11
Agency for Healthcare Research and Quality (AHRQ)
Training Program in Patient Safety and Quality
To train future scientists to design, implement, select, evaluate, and implement health information technology from a systems and human factors perspective, in order to increase the quality and safety of healthcare.

08019377 (PI: Jiajie Zhang; Co-PI: Vimla L. Patel and Ronald Gimbel) 02/11/08 - 02/10/10
US Army TATRC
Usability Evaluation of AHLTA
The objective of our project is to apply UFuRT to the design and evaluation of the AHLTA EHR used by the military.

08101514 (PI: Vimla L. Patel) 07/01/08 - 08/31/09
Science Foundation Arizona
Cognitive Aspects of Mental Disorder Diagnosis and Treatment in Primary Care
Study focuses on doctor and patient communication in Major Depressive Disorder (MDD) and Anxiety Disorders such as Post-Traumatic Stress Disorder (PTSD), highly prevalent illnesses, often misdiagnosed and inadequately treated by primary care practitioners (PCPs). Use is made of avatars to act as a standardized patient.

R01 LM07894 (PI: Vimla L. Patel) 11/03/04 - 02/30/07
NLM
Cognition and Error Management for Critical Care
The goal of this project is to conduct qualitative research to develop taxonomy of errors in critical care.

R01 MH65851 (PI: Vimla L. Patel) 07/01/03 - 7/30/07
NIMH
Cognitive Models of HIV Decision Making in Young Adults
The aim of this project is to analyze factors associated with young adults' decisions to engage in risky sexual behavior.

R04 LM07593 (PI: James Cimino) 07/01/04 - 06/30/07
NLM
Infobuttons to Improve Clinicians' Access to Information
The goal of this project is to reduce the occurrence of an important proximal cause of medical errors: inadequate access to required information when making decisions.

R01 MH067100 (PI: Peter Jensen) 07/01/03 - 11/30/07
NIMH
A Theory-Based Intervention to Change Physicians' Behavior
The goal of this project is to apply current theories of cognition, motivation, self-regulation, and decision making to the development and application of a physician focus intervention in child psychiatry. In particular, the study will focus on anti-psychotic medication for children.

G08 LM07676 (PI: Vimla L. Patel) 02/17/03 - 02/16/06
NLM
Enabling Psychiatrists Access to Knowledge Resources
This grant involves the development of an innovative online technology application designed to provide information at the point of care to psychiatrists.

R18 HS11806 (PI: George Hripcsak) 09/01/01 - 08/31/04
AHRQ
Mining Complex Clinical Data for Patient Safety Research
This project represents a unique opportunity to apply the most advanced medical language processing system to a large, comprehensive clinical repository to advance patient safety research.

AAAA2523 (PI: Todd Johnson) 09/01/01 - 06/30/04
University of Texas
Usability Evaluation Guidelines for Patient Safety
The objective of this project is to develop a cognitive framework of medical errors that includes a cognitive taxonomy, a cognitive theory, and a set of intervention strategies.

2000-36-U of Texas (PI: J. Zhang; Columbia PI: Vimla L. Patel) US Army 2001-2003
Toward a Taxonomy of Medical Errors in Critical Care: A Cognitive Analysis of Infusion Pump Usability
The main objective of this research is to determine methods for reducing medical device errors based on a taxonomy of human error in everyday practice. As the Co-PI, I direct the Columbia component of the project in critical Care medicine.

N01 LM (PI: James Cimino; McGill PI: Vimla L. Patel) 1996-2000
NLM
Health Applications for the National Information Infrastructure- subcontract to McGill University. Evaluation of patient (PatCIS) and physician (WebCIS)-based electronic communication systems.

N01 LM 9-3534 (PI: James Cimino; Co-PI: Vimla L. Patel) 1999-2002
NLM
Informatics for the National Heart Attack Alert Program
The goal of this project is the demonstration of the effectiveness of information technology for shortening the time from onset of symptoms and signs of acute myocardial infarction (AMI) to the institution of appropriate therapy. I am co-investigator with an interest in cognitive evaluation.

1R01 LM06594-02 (PI: Edward Shortliffe; Co-PI: Vimla L. Patel) 1999-2002
NLM
A Shared Internet Server for Delivering Guidelines

The goal of the project is to develop tools and techniques to promote the computerization of guidelines by developing a standard to represent them. I am one of the PIs with an interest in formal cognitive evaluations of computer-generated languages as well as the use of guidelines in clinical practice.