

CURRICULUM VITAE

Daren Keith Heyland MD, FRCPC, MSc.

I. PERSONAL INFORMATION

Name: Daren Keith Heyland
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Date of Birth: November 14, 1962
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II. PRESENT ACADEMIC RANK AND POSITION

Full Professor of Medicine, Queen's University (tenured, July 2005)

III. EDUCATION

1987 Bachelor of Medical Science, University of Alberta.
1989 Doctor of Medicine with distinction, University of Alberta.
Licentiate with Medical Council of Canada.
1994 Master's Degree in Health Sciences, Design, Measurement, and Evaluation Program,
McMaster University.

IV. ROYAL COLLEGE CERTIFICATION, CERTIFICATE OF COMPETENCY, AMERICAN BOARD CERTIFICATION

1995 Fellow, Royal College of Physicians and Surgeons of Canada, Internal Medicine.
1996 Royal College of Physicians and Surgeons of Canada Specialty in Critical Care

V. HONORS AND AWARDS

1980,1983-85 Presidential Scholarship, Brigham Young University.
1990 Regional Medical Associates Research Scholarship
1993 E. Garner King Award from Canadian Critical Care Society for Best Young Investigator.
1994 Internal Medicine Resident's Research Competition- Third Prize.
1994 Regional Medical Associates Research Scholarship
1995 Internal Medicine Resident's Research Competition- First Prize, David L. Sackett Award.
1996 E. Garner King Award from Canadian Critical Care Society for Best Young Investigator.
1996-2005 Career Scientist Award, Ministry of Health, Ontario, Canada (a multi-year award that provides approximately \$60,000/year for salary support)
2005 Excellence in Research Award, Department of Medicine, Queen's University.

VI. PREVIOUS PROFESSIONAL POSITIONS AND APPOINTMENTS

1991-92	Emergency Physician, Med-Emerg Inc., Ontario.
1991-94	Temporary Staff, Greater Niagara Regional Hospital, Ontario. Locums in Family practice.
1991-96	Critical Care Clinical Assistant, McMaster University Affiliated Hospitals, Hamilton, Ontario.
1996	Staff Physician, Kingston General Hospital, Hotel Dieu, and St. Mary's of the Lake Hospital, Kingston, Ontario.
1996-2001	Assistant Professor, Department of Medicine, Queen's University, Kingston, Ontario.
2001-2005	Associate Professor, Department of Medicine, Queen's University, Kingston, Ontario.
2005-	Full Professor, Department of Medicine, Queen's University, Kingston, Ontario

VII. EDUCATION – TEACHING

Medical School

Teach Critical Appraisal to 2nd year Medical Students, Queen's University.
Involves 6, 2 hours small group sessions per year.

Graduate School

Teach "Decision making Near the End of Life" seminars to house staff at Kingston General
Hospital.
Involves 6, 2 hours small group sessions per year with all the house staff rotating through the ICU
Teach core subjects to ICU Residents, approximately 20/year
Journal Club to ICU residents, 6/year

Other institutions (prior to current position)

1992-1993 Tutor for "How to teach critical appraisal" workshop at McMaster University.

VIII. EDUCATION – JOURNALS

Scientific Reviewer for the Following Journals:

Journal of the American Medical Association
Chest
American Journal of Respiratory and Critical Care Medicine
Intensive Care Medicine
Critical Care
Journal of Palliative Care
Editorial Board Member of Journal of Critical Care

IX. GRADUATE STUDENT/POSTDOCTORAL FELLOWS WORKING FOR YOU

1. Jim Lavery, 1 year, SSHRC Postdoctoral award
2. Shaun MacDonald, 1 year, Critical Care Research Fellow
3. Frantisek Novak, 1 year, Critical Care Research Fellow
4. Rupinder Dhaliwal, 2 years, Nutrition Research Fellow
5. Dianne Groll, 2 years, CIHR Postdoctoral award
6. Naomi Jones, 2 years, MSC Epidemiology student

X. INSTITUTIONAL, DEPARTMENTAL, AND DIVISIONAL ADMINISTRATIVE RESPONSIBILITIES, COMMITTEE MEMBERSHIPS AND OTHER ACTIVITIES

1996-	Director of Research, Critical Care Program, Kingston General Hospital
1997-1999	Research and Development Committee, Kingston General Hospital
1998-2001	Critical Care Medicine Residency Training Committee, KGH
1999-2001	Pastoral Care Committee, Kingston General Hospital
1999-2000	Withdrawing and Withholding Life Supports Committee, KGH
1999-2000	Ad Hoc Committee on Research Overheads and Clinical Trials Unit
2000-	Director of Research, General Internal Medicine Group
2004-	Head, Division of General Internal Medicine

XI. **PROFESSIONAL AND SOCIETY MEMBERSHIPS**

1993-	Canadian Critical Care Trials Group
1994-	Canadian Critical Care Society
1995-	Society of Critical Care Medicine
1996-2004	American Society of Parenteral and Enteral Nutrition
2002-2004	Canadian Society for Clinical Nutrition

XII. **NATIONAL LEADERSHIP**

1996	Member of the Executive of Canadian Critical Care Trials Group -Organized End of Life Care Symposium in conjunction with the Critical Care Trials Group Annual meeting, Lake Louise, April 1999.
2001	Member of the Governing Council of Canadian Society of Clinical Nutrition and Chair of Practice Guidelines Committee. -Organized Nutrition Support Research Working Group at the American Society for Parenteral and Enteral Nutrition, Chicago, January 23, 2001. -Organized and Chaired a Multidisciplinary National Research Meeting on Nutrition Support funded by Nestle, Abbott Laboratories and Canadian Institutes of Health Research, Toronto, Oct 16-17, 2001. -Organized and Co-chaired a Multidisciplinary National Meeting to develop guidelines for nutrition support in the ICU. In conjunction with Canadian Society for Clinical Nutrition Annual Meeting, sponsored by Canadian Institutes of Health Research, Toronto, May 1-2, 2002.
2002	Member of the CIHR/Health Canada Palliative Care Research Working Group, member of the steering committee for the Canadian Palliative/End of Life Research Network (CaNPER), and Co-Chair of the Health Canada, National Strategy on End of Life Care, Research Working Group. -Organized National End of Life Care Research Meeting (New Frontiers Program) sponsored by CIHR, Kingston ON, March 27-29, 2003. -Organized and chaired CaNPER protocol development meeting, Toronto, October 28, 2003. -Organized and chaired symposium on Nutrition Support in Critical Care at 2002, 2003, and 2004 National meeting
2004	Member of the CIHR Advisory Committee for the National Research Forum for Young Investigators in Circulatory and Respiratory Health, Winnipeg, MB, May 6-9, 2004.
2004	Reviewer, CIHR Clinical Trials Committee

XIII. **INVITED VISITING PROFESSORSHIPS**

Total Visits: 41

"A Systematic Review of Nutrition Support in the Critically Ill Patient: Transferring Research-Based Findings into Practical Hospital Applications." Ajax and Pickering Health Center, November 25, 1998.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Chest Rounds, London Health Sciences Center, London, Ontario, May 26, 1999.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Ottawa Hospitals, Ottawa, Ontario, May 27, 1999.

"Nutrition Support in the Critically Ill Patient: A Systematic Review of the Literature" Kentucky Chapter of American Society of Parenteral and Enteral Nutrition, Louisville, Kentucky, June 18, 1999.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Ottawa Hospitals, Ottawa, Ontario, May 28, 2000.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, St. John Regional Hospital, St. John New Brunswick, Sept 6, 2000.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Royal Alexandra Hospitals, Edmonton, Alberta, September 20, 2000.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Cook County Hospital, Chicago, Illinois, January 9, 2001.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Sunnybrook Hospital, Toronto, April 19, 2001.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Oregon Health Sciences University, Portland, Oregon. May 17, 2001.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Expert Panel, AstraZeneca, Wilmington, Delaware, May 23, 2001.

"Sepsis: New Insights into New Molecules, Mechanisms, Monitoring and Improved outcomes." Duke Medical Center, Durham, North Carolina, November 5, 2001.

"Enhancing Delivery of Enteral Nutrition in the Critically Ill." Grand Rounds, North York General Hospital, November 8, 2001.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Grand Rounds, Windsor, Ontario, Nov 13, 2001.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Grand Rounds, St John's General Hospital, St John's, Newfoundland, Nov 20, 2001.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Grand Rounds, University Hospital, Saskatoon, Saskatchewan, Dec 7, 2001.

"Optimizing Nutrition Support in the Critically Ill/Surgical Patient" Surgical Grand Rounds, University Hospital, Saskatoon, Saskatchewan, Dec 7, 2001.

"Merging Evidence-based Medicine and Nutrition Support Practice for Critically Ill Patients: The (Mis)interpretation of Randomized Trials and Meta-analyses." Nutrition Grand Rounds, University Hospital, Saskatoon, Saskatchewan, Dec 7, 2001.

"Dying in Canada: A Quality Finish?" Chest Rounds, Royal Columbian Hospital, New Westminister, British Columbia, Jan 29, 2002.

"Dying in Canada: A Quality Finish?" Grand Medical Rounds, St. Paul's Hospital, Vancouver, British Columbia, Jan 30, 2002.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, University of British Columbia, Vancouver, Jan 31, 2002.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Sunnybrook Hospital, Toronto, Ontario. March 28, 2002.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Foothills Hospital, Calgary, Alberta, April 16, 2002.

"Dying in Canada: A Quality Finish?" Grand Rounds, Foothills Hospital, Calgary, Alberta, April 17, 2002.

"Waveform Abnormalities of aPTT in Critically Ill Hospitalized Patients: The WATTCH study. John Radcliffe Hospital, Oxford, UK, Sept 13, 2002.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, University of Montreal Hospitals (CHUM), St. Luke's Hospital, October 23, 2002.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Combined Critical Care and Respiriology Rounds, Montreal Jewish General Hospital, October 24, 2002.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Hopital Sacre du Couer, Montreal, Quebec, February 4, 2003.

"Nutrition Makes a Difference to Clinical Outcomes!" Critical Care Fellows Rounds. Ottawa General Hospital, Ottawa, ON, May 6, 2003.

"Ventilator-Associated Pneumonia: Optimal Management." University of Laval, Quebec City, Quebec, May 27, 2003.

"Sepsis: New Insights into Mechanisms, Molecules, Monitoring and Maximizing Outcome" Charles Lemoyne Hospital, Montreal, Quebec, May 27, 2003.

"Ventilator-Associated Pneumonia: Optimal Management." McGill University Health, Montreal, Quebec, May 29, 2003.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Queen Elizabeth II Hospital, Halifax, Nova Scotia, September 5, 2003.

"Ventilator-Associated Pneumonia: Optimal Management." University of Manitoba, Winnipeg, September 23, 2003.

"Immunonutrition: Separating Fact From Fiction." New York Long Island Society of Parenteral and Enteral Nutrition, Manhasset, New York, November 3, 2003.

"Nutrition Support in the Critically Ill Patient: The way you feed them impacts their outcome". Critical Care Rounds, Hamilton General Hospital, McMaster University, Hamilton, May 3, 2004.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Cite de la Sante de Laval, Laval, Quebec, May 4, 2004.

"Nutrition Support in the Critically Ill: If you feed them they will leave (alive!)" Respiratory and Critical Care Conference, University of Washington, Harborview Hospital, Seattle, Washington, July 22, 2004

"Immunonutrition: From old approaches to new paradigms". University of Louisville, Kentucky, September 9, 2004.

"Nutrition support in the critically ill: translating research evidence into practice". University of Louisville, Kentucky, September 9, 2004.

"REducing Deaths from OXidative Stress: A randomized trial of glutamine and antioxidant supplementation in critically ill patients. The REDOXS study." City Wide Critical Care Medicine Rounds, University of Montreal, Montreal, Quebec, April 13, 2005.

XIV. **PRESENTATIONS AT NATIONAL MEETINGS**

Total Presentations: 34

"The Effect of Acidified Enteral Feeds on Colonization and Pneumonia in the Critically Ill Patient". Canadian Critical Care Trials Group Meeting, Montreal, Quebec, April 1993.

"Introduction to Evidence-Based Medicine" and "How to Use an Economic Evaluation". Bayer National Sales Representative Meeting, Toronto, May 7, 1998.

"Patient participation in health care decisions near the end of life: A research program." Tranmer, J & Heyland, D. The Canadian Association of Medical Colleges (CAME), Ottawa, Ontario. May 1998.

"The Effect of Antimicrobial Tube Feeds on Nosocomial Infections in the Critically Ill Patient". Canadian Critical Care Trials Group Meeting, Toronto, Ontario, September, 1998.

"A Randomized Trial of Empiric Broad Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia". Canadian Critical Care Trials Group Meeting, Toronto, Ontario, September, 1998.

"Outcomes Research: Linking Clinical Practice with Research Evidence." Combining Evidence-Based Health Care and Utilization Review, Brampton, Ontario, Jan 13, 1999.

"Dying in Canada: Is it an Institutionalized, Technologically Supported Experience? Canadian Critical Care Trials Group End-of-Life Symposium, Lake Louise, Alberta, April 10, 1999.

"End of Life Decision Making". Critical Care Society Resident's Half-Day Symposium on End of Life Issues. Royal College of Physicians and Surgeons Annual Scientific Meeting. Montreal, September 1999.

"Nutrition Support in the Critically Ill Patient: A Systematic Review of the Literature" Critical Care Research Network 2nd Annual Meeting. Mississauga, Ontario; Jan 20, 2000.

"Nutrition Support in the Critically Ill Patient: Current Topics." Postgraduate Course, Canadian Critical Care Society and Canadian Association of General Surgeons, Edmonton, September 21, 2000.

"Ventilator-Associated Pneumonia: Observations and Experiments." Royal College of Physicians and Surgeons of Canada. Edmonton, September 23, 2000.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." AstraZeneca National Sales Meeting, Mississauga, Ontario, April 25, 2001.

"Sepsis: New Insights into Mechanisms, Treatments, and Monitoring" Organon Technika, Durham, North Carolina, May 25, 2001.

"Prevention of Ventilator-associated Pneumonia: Current Practice in Canada." Wyeth-Ayerst Consultants Forum. Mississauga, Ontario, June 16, 2001.

"Tazocin: Clinical Review" Wyeth-Ayerst Consultants Forum. Mississauga, Ontario, June 16, 2001.

"Nutrition Support Research in ICU: A multidisciplinary, national research plan." Multidisciplinary National Research Meeting on Nutrition Support funded by Nestle, Abbott Laboratories and Canadian Institutes of Health Research, Toronto, Oct 16-17, 2001.

"Merits and Limitations of Meta-analyses in Nutrition Support" Western Canada Nutrition Day, Edmonton, Alberta, Oct 26, 2001.

"Nutrition Support: Best Care for the Critically Ill" Canadian Society for Clinical Nutrition Annual Meeting, Toronto, Ontario, May 4, 2002.

"Quality of Life in Survivors of Critical Illness: Moving Beyond Survival" Critical Care Research Network Annual Meeting, Ingersoll, Ontario, May 9, 2002.

"Family Satisfaction with Care in the Critical Care Setting" Critical Care Research Network Annual Meeting, Ingersoll, Ontario, May 9, 2002.

"Dying in ICUs in Canada: A Quality Finish?" Kingston- Ottawa Critical Care Symposium, Ottawa, May 24, 2002.

"Feeding in the ICU: Myths and Misconceptions. What is the Evidence?" Canadian Association of Critical Care Nurses, Niagara Falls, Ontario, October 2, 2002.

"Best Practice in ICU Nutrition Support" Hamilton Health Sciences 6th Annual Nutrition Workshop, Hamilton, Ontario, November 22, 2002.

"Towards Building a National Research Center of Excellence in End of Life/Palliative Care" National Coordinating Council, National Strategy on EOL/Palliative Care, Ottawa, Jan 22-24, 2003.

"Nutrition Support in the Critically Ill Patient" UBC Whistler Critical Care Conference, Whistler BC, April 12, 2003.

"Optimal Management of Ventilator-Associated Pneumonia" UBC Whistler Critical Care Conference, Whistler BC, April 12, 2003.

"Ventilator-Associated Pneumonia: Optimal Management " 2nd Annual Atlantic Critical Care Conference, Halifax, Nova Scotia, September 5-7, 2003.

"Nutrition Support in the Critically Ill Patient: Achieving Best Practice." 2nd Annual Atlantic Critical Care Conference, Halifax, Nova Scotia, September 5-7, 2003.

"Improving the Quality of End of Life Care in Canada: Understanding the Perspectives of Seriously Ill Hospitalized Patients and Their Caregivers." CaNPER Protocol Development Meeting, October 28, 2003.

"Ventilator-Associated Pneumonia: Getting it right the first time!" Academy of Infection Meeting sponsored by AstraZeneca, Boston, Massachusetts, November 21, 2003.

"REducing Deaths from OXidative Stress: A randomized trial of glutamine and antioxidant supplementation in critically ill patients. The REDOXS study." Canadian Critical Care Trials Group Annual Scientific Meeting, Lake Louise, Jan 20th, 2004.

"End of Life Care in Canada: A Quality Finish?" CIHR, National Research Forum for Young Investigators. Winnipeg, MB, May 8, 2004.

"ZAP the VAP", VAP Investigators Meeting, Scottsdale, Arizona, Jan 13-14, 2005.

"A Randomized Trial of Invasive Diagnostic Techniques and Empiric Broad-Spectrum Antibiotics in the Setting of Ventilator-Associated Pneumonia: Preliminary Results." Quebec Society of Intensive Care Medicine Annual Meeting, Montreal Quebec, May 5, 2005.

XV. **PRESENTATIONS AT INTERNATIONAL MEETINGS** Total Presentations: 83

"The Effect of Cisapride on Gastric Emptying in Critically Ill Patients." Digestive Diseases Week, San Francisco, California, May 1996.

"The Frequency and Methodological Rigor of Quality of Life Assessments in the Critical Care Literature." The 7th World Congress of Intensive & Critical Care Medicine, Ottawa, Ontario, July 1997.

The Third Annual Ross Enteral Device Conference, Winston-Salem, NC, September 19-21, 1997. Chaired conference and presented "Making Inferences From Scientific Research" and "The Effect of Acidified Enteral Feeds on Contamination of the Enteral Feeding Delivery System and Subsequent Colonization and Infection in Critically Ill Patients."

"Nutrition Support in the Critically Ill Patient: A Systematic Review of the Literature. 1997 Toronto Critical Care Medicine Symposium, Toronto, Canada, November, 1997.

"The Effect of Acidified Enteral Feeds on Gastric Colonization and Pneumonia in Critically Ill Patients: Results of a Multicenter Randomized Trial." American Thoracic Society/American Lung Association Annual Meeting, Chicago, April, 1998.

"Gastrointestinal Motility, Enteral Nutrition and Infection in Critical Illness". Expert's Panel sponsored by Janssen Pharmaceutica, Boston, August 26, 1998.

"Morbidity and Mortality Criteria: Are They Relevant to Establish the Efficacy of Nutritional Interventions?" European Society of Parenteral and Enteral Nutrition, Nice, France, September, 1998.

"Nutrition Support in the Critically Ill Patient: A Systematic Review of the Literature" European Society of Parenteral and Enteral Nutrition, Nice, France, September, 1998.

"Ventilator-Associated Pneumonia IS a Clinically Important Entity!" Pro/Con Debate. Toronto International Critical Care Symposium, Toronto, Canada, Oct 31, 1998.

"Clinical and Economic Consequences of ARDS: An international, multi-center pharmaco-economic and quality of life evaluation." Byk-Gulden Investigator's Meeting, Toronto, Ontario, Oct 4-5, 1999.

"Empiric, Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia". Toronto Critical Care Medicine Symposium, Toronto, Canada, Oct 30, 1999.

"Parenteral Nutrition in the Critically Ill Patient: More Harm than Good?" British Association of American Society of Parenteral and Enteral Nutrition, Bournemouth, UK, December 8-9, 1999.

"Immunonutrition in the Critically Ill Patient: A Meta-analysis" and "The Effect of Acidified Enteral Feeds on Gastric Colonization in the Critically Ill Patient" Expert's Meeting, Novartis, Minnesota; Jan 21, 2000.

"Supplemental Parenteral Nutrition in the Critically Ill Patient: Benefit or Harm?" 29th Educational & Scientific Symposium, Society of Critical Care Medicine, Orlando Florida, February 11-15, 2000.

"Merging Evidence-based Medicine and Nutrition Support Practice for Critically Ill Patients: The (Mis)interpretation of Randomized Trials and Meta-analyses." Evidence-Based Medicine Post-graduate course, 29th Educational & Scientific Symposium, Society of Critical Care Medicine, Orlando Florida, February 11-15, 2000.

"What are the Results? Using Systematic Reviews to Inform Decision Makers." Round Table Conference "Evaluating Critical Care: Using Health Services Research to Improve Quality". Brussels, Belgium, March 19-21, 2000.

“Supplemental Parenteral Nutrition: More Harm than Good? 20th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-24, 2000.

“End of Life Care in the ICU: Round Table Discussion.” 20th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-24, 2000.

“Empiric Broad Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia.” 20th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-24, 2000.

“Nutrition Support in the Critical Care Setting: An Update” 20th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-24, 2000.

“Immunonutrition in the Critically Ill: Some Evidence-based Medicine Considerations” Immune-enhancing Diet Consensus Conference. San Diego, California, USA. May 25-26.

“In Search of the Magic Nutraceutical: Problems with Current Approaches” Glutamine Symposium, Bermuda, Oct 2-4, 2000.

“The Impossible Nasojejunal tube: Practical Procedures” The 25th Australian and New Zealand Annual Scientific Meeting on Intensive Care. Canberra, Australia, Oct 19-22, 2000.

“What We Have Learned From Multi-center Clinical Trials: The Experience of the Canadian Critical Care Trials Group” The 25th Australian and New Zealand Annual Scientific Meeting on Intensive Care. Canberra, Australia, Oct 19-22, 2000.

“Optimizing the Delivery of Enteral Nutrition in the Critically Ill” The Australasian Parenteral and Enteral Society Annual Scientific Meeting. Lorne, Australia, Oct 26-29, 2000.

“A Systematic Review of Nutrition Support in the Critically Ill” The Australasian Parenteral and Enteral Society Annual Scientific Meeting. Lorne, Australia, Oct 26-29, 2000.

“Nutrition Support in the Critically Ill Patient: Current Topics” Chicago Thoracic Society Annual Meeting, Chicago, Illinois, January 9, 2001.

“Does Nutrition Support Influence Patient Outcome” American Society of Parenteral and Enteral Nutrition, Chicago, Illinois, January 20, 2001.

“Why We Need Multicenter Randomized Clinical Trials: The Experience of the Canadian Critical Care Trials Group.” American Society of Parenteral and Enteral Nutrition, Chicago, Illinois, January 23, 2001

“Effect of Glutamine in Critical Illness: A Systematic Review.” American Society of Parenteral and Enteral Nutrition, Chicago, Illinois, January 23, 2001.

“Clinical Research Design: Critical Care- Randomized Trials and Meta-analyses” Society of Critical Care Medicine 30th International Educational and Scientific Symposium, San Francisco, February 11-13, 2001.

“Measuring Outcomes in Critical Care: Quality of Life” Society of Critical Care Medicine 30th International Educational and Scientific Symposium, San Francisco, February 11-13, 2001.

“Immunonutrition in the Critically Ill: More Harm than Good?” Society of Critical Care Medicine 30th International Educational and Scientific Symposium, San Francisco, February 11-13, 2001.

"Systematic Reviews as a Research Tool: Strategies for the Underfunded" American Thoracic Society Meeting, Postgraduate Course, San Francisco, May 19, 2001.

"Merits and Limitations of Meta-analysis Illustrated by Examples from Nutrition Support." European Society of Parenteral and Enteral Nutrition, Munich, Germany, Sept 8-12,2001.

"Immunonutrition: What is the Evidence?" European Society of Parenteral and Enteral Nutrition, Munich, Germany, Sept 8-12,2001.

"Immunonutrition: Pro-Con Debate" Toronto International Critical Care Symposium, Toronto, Sept 18-21, 2001.

"Diagnosis of Ventilator-Associated Pneumonia" Toronto International Critical Care Symposium, Toronto, Sept 18-21, 2001.

"Sepsis: New Insights into New Molecules, Mechanisms, Monitoring and Improved outcomes." Southeast Association of Clinical Microbiologists, Myrtle Beach, South Carolina, November 7, 2001.

"Does Nutrition Support Influence Outcome? 26th ASPEN Clinical Congress, Nutrition for the Practicing Clinician, San Diego, February 22, 2002.

"Immune Enhancing Formulas: Beneficial or Harmful? 26th ASPEN Clinical Congress, Postgraduate Course, San Diego, February 23, 2002.

"Should Immunonutrition be Routine in the Critically Ill?" 26th ASPEN Clinical Congress, San Diego, February 24, 2002.

"Optimizing the Benefits and Minimizing the Risks of Enteral Nutrition in the Critically Ill: Role of Small Bowel Feeding" Summit on Aspiration Pneumonia, In conjunction with Digestive Diseases Week, San Francisco, May 18,19, 2002.

"Should Immunonutrition be Routine in the Critically Ill?" Digestive Diseases Week, San Francisco, May 18,19, 2002.

"Alternative Methods for Diagnosing Sepsis" American Society of Microbiology Annual Meeting, Salt Lake City, May 21, 2002.

"Waveform Analysis of the aPTT in Critically Ill Hospitalized Patients with Sepsis: The WaTTCH study." International Society on Thrombosis and Haemostasis, Boston, July 18, 2002.

Sepsis: New Insights into Molecules, Mechanisms, Monitoring, and Maximizing Outcomes." Biomerieux, Marcy, France, September 20, 2002.

"Waveform Abnormalities of aPTT in Critically Ill Hospitalized Patients: The WATTCH study." Biomerieux, Marcy, France, September 20, 2002.

"Empiric Antibiotics are Needed. Pro/Con Debate." Toronto Critical Care Medicine Symposium, Toronto, ON, November 1, 2002.

"Quality End of Life Care: The importance of communication." Toronto Critical Care Medicine Symposium, Toronto, ON, November 1, 2002.

"Which Patients Benefit from Immunonutrition?" Nutrition Week, San Antonio, Texas, January 18-22, 2003.

"Minimizing the Risks of Enteral Nutrition in the Critically Ill: Effect of Small Bowel Feedings." Nutrition Week, San Antonio, Texas, January 18-22, 2003.

"Achieving Best Practice: Nutrition Support in the ICU" Canadian Night, Ross- sponsored event at Nutrition Week, San Antonio, Texas, January 18-22, 2003.

"Diagnosis of Ventilator-Associated Pneumonia" 32nd Critical Care Congress, Society of Critical Care Medicine, San Antonio, Texas, Jan 28-Feb 3, 2003.

"Dying in Canada: A Quality Finish?" 32nd Critical Care Congress, Society of Critical Care Medicine, San Antonio, Texas, Jan 28-Feb 3, 2003.

"Immunonutrition: Pro/Con Debate" 32nd Critical Care Congress, Society of Critical Care Medicine, San Antonio, Texas, Jan 28-Feb 3, 2003.

"Nutrition Support in the Critically Ill" American Thoracic Society 2003 State of the Art Review Course, San Juan, Puerto Rico, February 27-March 2, 2003.

"Immunonutrition: What is the evidence?" 27th Congress of the Scandinavian Society of Anesthesiology and Intensive Care Medicine, Helsinki, Finland, August 16-20, 2003.

"Dying in Canada: A Quality Finish." Toronto Critical Care Medicine Symposium, Toronto, Ontario, Oct 29-November 1, 2003.

"Diagnosis of Ventilator-Associated Pneumonia: Impact on Outcome" Toronto Critical Care Medicine Symposium, Toronto, Ontario, Oct 29-November 1, 2003.

"Dissemination of the Canadian Clinical Practice Guidelines for Nutrition Support for Mechanically Ventilated Patients." Toronto Critical Care Medicine Symposium, Toronto, Ontario, Oct 29-November 1, 2003.

"Background and Scientific Rationale for Long-term follow up study: VALID study." Investigator's meeting, Altana Pharmaceuticals, Miami Florida January 17, 2004.

"Nutrition Support in the Critically Ill Patient: "Narrowing the GAP!" Experts Roundtable sponsored by Nutricia, Inc. Frankfurt, Germany, Jan 23, 2004.

"Canadian Clinical Practice Guidelines for Nutrition Support in the Critically Ill Patient." Nutrition Week. Las Vegas, Nevada, February 9-12, 2004.

"Enteral Nutrition vs Parenteral Nutrition: Nutrition for the Practicing Clinician." Nutrition Week. Las Vegas, Nevada, February 9-12, 2004.

"Role of Immunonutrition in ICU". Society of Critical Care Medicine. 33rd Critical Care Congress. Orlando, Florida, February 19-25, 2004.

"Immunonutrition – where have we come from and where are we going?" 6th World Congress on Trauma, Shock, Inflammation and Sepsis. Munich, Germany, March 2-6, 2004.

"Optimal regimen of perioperative nutrition – What makes sense?" 6th World Congress on Trauma, Shock, Inflammation and Sepsis. Munich, Germany, March 2-6, 2004.

"REducing Deaths from OXidative Stress: A randomized trial of glutamine and antioxidant supplementation in critically ill patients. The REDOXS study." Canadian Society for Clinical Nutrition 3rd Annual Scientific Meeting. Toronto, Ontario, April 22-24, 2004.

"Nutrition support in the critically ill: evidence-based clinical practice guidelines". European Society of Intensive Care Medicine, 17th Annual Congress, Berlin, Germany, 10-13 October 2004.

"Use of total parenteral nutrition (TPN)". European Society of Intensive Care Medicine, 17th Annual Congress, Berlin, Germany, 10-13 October 2004.

"Ventilator-associated pneumonia: Optimal management." Critical Care Medicine Symposium, Toronto, 21-23 October 2004.

"The patient's and family's perspectives on end of life care in Canada". Critical Care Medicine Symposium, Toronto, 21-23 October 2004.

"Reducing Deaths from Oxidative Stress: The REDOXS study". Critical Care Medicine Symposium, Toronto, 21-23 October 2004.

"Nutrition support in the critically ill: Evidence-based clinical practice guidelines". Critical Care Medicine Symposium, Toronto, 21-23 October 2004.

"End of Life Care in Canada: A Quality Finish?" Society of Critical Care Medicine Annual Scientific Congress, Phoenix, Arizona. Jan 15-19, 2005.

"Immunonutrition: The Canadian Clinical Practice Guidelines for Nutrition Support" Society of Critical Care Medicine Annual Scientific Congress, Phoenix, Arizona. Jan 15-19, 2005.

"Immunonutrition: From old approaches to new paradigms" Japanese Society for Parenteral and Enteral Nutrition Congress, Japan, February 10-20, 2005.

"Sepsis markers. Modified APTT". 25th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-25, 2005.

"Optimal management of VAP". 25th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-25, 2005.

"End of life care". 25th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-25, 2005.

"Optimal nutritional support". 25th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, March 21-25, 2005.

"Nutrition and Infection: What is the evidence?" American Thoracic Society Annual Scientific Meeting, San Diego, May 21-25, 2005.

XVI. **INTRAMURAL PRESENTATIONS**

Total Presentations: 27

"Effect of Acidified Enteral Feeds on Gastric Colonization". Regional Critical Care Research Rounds, Hamilton Ontario, Feb 1991.

"Enteral Nutrition: Past, Present and Future Research Directions". Regional Critical Care Research Rounds, Hamilton, Ontario, May 1993.

"Gastrointestinal Dysfunction, Enteral Nutrition and Infection in Critical Illness". Regional Critical Care Rounds, Hamilton, Ontario, Feb 1996.

"Is the High Cost of Intensive Care Worthwhile?" Department of Medicine Rounds, Queen's University, Kingston, Ontario, May 1996.

"A Randomized Trial of Empiric Broad Spectrum Antibiotics and Invasive Bronchoscopy in the Setting of Ventilator-Associated Pneumonia". Critical Care Rounds, Kingston, Ontario, September, 1998.

"The Attributable Morbidity and Mortality of Ventilator-Associated Pneumonia in the Critically Ill Patient". Critical Care Rounds, Kingston, Ontario, October, 1998.

"Decision Making Near the End of Life", Internal Medicine Resident's Academic Half Day, Kingston, Ontario, Jan 20, 1999.

"Systematic Reviews of the Literature: Problems or Panacea?", Department of Medicine Grand Rounds, Kingston, Ontario, Jan 21, 1999.

"A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia." Critical Care Rounds, Kingston General Hospital, Ontario, September 7, 1999.

"End of Life Care In Canada: A Quality Finish?" Department of Medicine Grand Rounds, Kingston, Ontario, Nov 25, 1999.

"Dying In Canada: A Quality Finish?" Critical Care Rounds, Kingston General Hospital, Kingston, Ontario, Dec 7, 2000.

"Dying In Canada: A Quality Finish?" Ethics for Lunch Rounds, Kingston General Hospital, Kingston, Ontario, January 18th, 2001.

"Evidence-Based Medicine" Radiology Rounds, Kingston General Hospital, May 30, 2001.

"Gastrointestinal (Dys)function in Critical Illness". Research in progress rounds, Division of Gastroenterology, Hotel Dieu Hospital, Oct 23, 2001.

"The Potential of Proteomics" Department of Medicine Research Rounds, Kingston General Hospital, April 26, 2002.

"Is Reading an Economic Evaluation an Efficient Use of Your Time?" Critical Care Medicine Journal Club, November 14, 2002.

"Clinical Evaluation Research Unit" KGH Research Advisory Committee Board Meeting, December 5, 2002.

"Dying in Canada: A Quality Finish?" Department of Family Medicine Rounds, Queen's University, June 12, 2003.

"REducing Deaths from OXidative Stress: A randomized trial of glutamine and antioxidant supplementation in critically ill patients. The REDOXS study." Critical Care Rounds, Queen's University, September 22, 2003.

"REducing Deaths from OXidative Stress: A randomized trial of glutamine and antioxidant supplementation in critically ill patients. The REDOXS study." Gastrointestinal Diseases Research Unit Research in Progress, Queen's University, September 23, 2003.

"Communication and Decision Making at the End of Life: Patients' and Families' Perspectives." Palliative Care Rounds, Queen's University, January 28, 2005.

“Dying in Canada: A Quality Finish?” Medicine Grand Rounds, Queen’s University, February 03, 2005.

“Systematic Reviews: Problems or Panacea? Clinical Research Centre Seminar Series, Queen’s University, March 30, 2005.

“REducing Deaths from OXidative Stress: A randomized trial of glutamine and antioxidant supplementation in critically ill patients. The REDOXS study.” Critical Care Medicine Rounds, Queen’s University, April 4, 2005.

“Optimizing the Dose of Glutamine Dipeptides and Antioxidants in Critically Ill Patients: A phase 1 dose finding study of glutamine and antioxidant supplementation in critical illness.” GIDRU Research In Progress Rounds, April 5, 2005.

“Optimizing the Dose of Glutamine Dipeptides and Antioxidants in Critically Ill Patients: A phase 1 dose finding study of glutamine and antioxidant supplementation in critical illness.” Kingston-Ottawa Symposium. Kingston, ON, April 29, 2005.

“A Randomized Trial of Invasive Diagnostic Techniques and Empiric Broad-Spectrum Antibiotics in the Setting of Ventilator-Associated Pneumonia: Preliminary Results.” Critical Care Rounds, Kingston General Hospital, Kingston, Ontario, May 9, 2005.

XVII. **BIBLIOGRAPHY**

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Total= 93

- 1) Heyland DK, Sauve M. A case of Neuroleptic Malignant Syndrome with out the use of neuroleptics. *Can Med Assoc J* 1991;145(7):817-819.
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- 9) Cook DJ, Reeve BK, Guyatt GH, Heyland DK, Griffith LE, Buckingham L, Tryba M. Stress Ulcer Prophylaxis in the Critically Ill: Resolving Discordant Meta-analyses. *JAMA* 1996;275:308-314.
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- 17) Naylor CD, Guyatt GH, Heyland DK for the Evidence-Based Medicine Working Group. User's Guides to the medical literature. IX. How to use an article about a clinical utilization review. JAMA 1996;275:1435-1439.
- 18) Guyatt GH, Naylor CD, Juniper L, Heyland DK, Cook DJ for the Evidence-Based Medicine Working Group. User's Guides to the medical literature. XII How to use an article about health-related quality of life. JAMA 1997;277:1232-1236.
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- 61) Heyland DK, Tranmer J, for the KGH ICU Research Working Group. Measuring family satisfaction with care in the intensive care unit: The development of a questionnaire and preliminary results. *Journal of Critical Care* 2001;16:142-149.
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Papers Submitted

Aarts MA, Marshall JC, Hancock, J, [Heyland DK](#). Antibiotics for Ventilator-Associated Pneumonia: A Systematic Review.

Heyland DK, Dodek P, Rocker G, et al. What matters in end-of-life care: Perceptions of seriously ill patients and their family members.

Perfetto EM, Nichols B, Heyland DK, Caeser M. Hospitalizations involving pneumonia and mechanical ventilation in the United States.

Groll DL, Heyland DK, Caeser M, Wright JG. Relationship of the Charlson Comorbidity Index and the Functional Comorbidity Index with long-term physical function in acute respiratory distress (ARDS) patients.

Parker CM, Heyland DK, Groll D, Caeser, M. Survivors of acute respiratory distress syndrome: Quality of life following primary vs. secondary lung injury.

Publications—Abstracts, Editorials, Book Chapters

Abstracts published or in press

Total = 116

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XVIII. **RESEARCH GRANTS AWARDED**

Investigator-Initiated Research Activities Total Grants to date: \$ 11,414,187.00

- 1990 -1991 "Effect of acidified enteral feeds on gastric colonization in the critically ill patient."
Principal Investigator: DK. Heyland
Co-investigators: L. Mandell, C. Bradley
Funding: \$7,500 from Clintec Nutritional Inc. and Regional Medical Associates.
- 1992-1998 "Protected Brush Catheter: Evaluation of a Diagnostic Technology."
Principal Investigators: DK.Heyland, D.J. Cook.
Funding: \$1,500 from Boston Scientific Company
- 1992-1995 "Effect of Cisapride on gastric emptying in the Critically Ill Patient."
Principal Investigator: DK.Heyland
Funding: \$100,000 from Janssen Pharmaceuticals
- 1993-1997 "Effect of Acidified Enteral Feeds on Colonization and Pneumonia in the Critically Ill Patient: A Multicenter Randomized Trial."
Principal Investigator: DK. Heyland
In collaboration with The Canadian Critical Care Trials Group
Funding: \$172,750 from Ross Division, Abbott Laboratories
- 1994-1996 "Economic evaluations in the critical care literature: Do they help us solve the problem?"
Principal Investigator: DK.Heyland
Co-investigators: D.J. Cook, A. Gafni, P. Kernerman.
Funding: \$1,850 from Upjohn
- 1994 "Economic evaluation of stress ulcer prophylaxis in the critically ill."
Principal Investigator: DK.Heyland
Co-investigators: D.J. Cook, A. Gafni.
Funding: \$1,500 from Regional Medical Associates
- 1996-1998 "The Impact of Invasive Diagnostic Techniques in Critically Ill Patients with a Clinical Suspicion of Pneumonia: A Prospective Cohort Study."
Principal Investigators: DK. Heyland, D.J. Cook.
In collaboration with The Canadian Critical Care Trials Group
Funding: \$4,800.00 from Ontario Lung Association and Boston Scientific Corporation
- 1996-1998 "Attributable Morbidity and Mortality of Ventilator-Associated Pneumonia."
Principal Investigators: DK. Heyland, D.J. Cook.
In collaboration with The Canadian Critical Care Trials Group
Funding: \$5,075.00 from Ontario Lung Association.
- 1996-1998 "Comparison of Option One and a Polymeric Enteral Feeding: Effect on Length of Stay and Clinical and Immune Parameters."
Co-Investigator: DK. Heyland
Funding: \$77,563.00 from Ross Division, Abbott Laboratories.
- 1996-1998 "Assessment of Patient Preferences and Public Willingness to Pay for Critical Care Services."
Principal Investigators: DK. Heyland, A. Gafni.
Co-Investigators: J. Tranmer, S. Taylor.
Funding: \$20,000 from Department of Medicine, Queen's University

- 1997-1999 "Clinical Decision Making Around End of Life Issues: The Patient's, Nurse's, and Physician's Perspective."
Principal Investigators: DK. Heyland, S. Squires, J. Tranmer, A. Gafni.
Funding: \$10,000 from Oncology Nursing Foundation.
- 1997-1999 The Incidence of Pulmonary Aspiration of Enteral Feeds: A Randomized Trial of Gastric vs. Small Bowel Feeding."
Principal Investigators: DK. Heyland, J. Drover, S MacDonald.
Funding: \$15,000 from Physicians Services Inc.
- 1997-2001 "Decisional Responsibility and Information Needs of Seriously Ill Hospitalized Patients."
Principal Investigators: DK. Heyland
Co-Investigators: J. Tranmer, D. Dudgeon, S. Taylor, E. Kauffmann, M. Brundage, D. Feldman-Stewart, H. Munby
Funding: Social Sciences and Humanities Research Council Post-Doctoral Fellowship- Jim Lavery.
- 1997-1998 "Non-Invasive Positive Pressure Ventilation: A Clinical Outcomes Monitoring Project."
Principal Investigators: DK. Heyland.
Co-Investigators: W. Haddara, R. Wigle, A. Leach, C. Phillips
Funding: \$5,000 from Puritan Bennet.
- 1997-1999 "Long-term Health-related Quality of Life in Survivors of Sepsis."
Principal Investigators: DK. Heyland.
Co-Investigators: W. Hopman, A. Miranda, J. Tranmer, M. McColl.
Funding: \$15,000 from Knoll Pharmaceuticals
- 1998- A Randomized Trial of Empiric Broad-Spectrum Antibiotics and Invasive Diagnostic Techniques in the Setting of Ventilator-Associated Pneumonia."
Principal Investigator: D. Heyland.
Co-Investigators: from the Canadian Critical Care Trials Group.
Funding: \$75,000 from Bayer Pharmaceuticals, \$96,000.00 from PSI \$100,000 AstraZeneca and \$2,006,436 from Canadian Institutes of Health Research.
- 1998-2001 "The Relationship Between Symptom Distress, Fatigue and Decisional Responsibility in Seriously ill Hospitalized Patients Near the End of Life: A Prospective, Longitudinal Study."
Principal Investigator: JE Tranmer, DK Heyland.
Co-Investigators: Coulson, K., Squires-Graham, M.
Funding: \$10,000 Canadian Nurses Foundation,
\$5,300 from Clare Nelson Bequest Fund
- 1998-2000 "Epidemiology of Dying in Ontario: A Starting Place for Reform."
Principal Investigator: DK Heyland.
Co-Investigators: Tranmer J, Lavery J, Shortt S.
Funding: \$17,800 from Physician Services Inc.
- 1998-2000 "The Effect of Antibiotic-Coated Catheters on the Ecology of an Intensive Care Unit: A Prospective Study."
Principal Investigator: DK Heyland, D Zoutman.
Co-Investigators: Drover J, Wright F.
Funding: \$12,000 from Cook Canada.
- 1999-2001 "Satisfaction with Care in the Intensive Care Unit: An Assessment of the Family's Perspective."
Principal Investigator: DK Heyland.
Co-Investigators: Peters S, Cook D, Rocker G, Dodek, P.

- Funding: \$20,000 from Canadian Intensive Care Foundation.
\$11,333.00 from QEII Research Foundation
- 1999-2000 "Confirmation of Feeding Tube Placement in ICU Patients using Capnography."
Principal Investigator: Kindopp S.
Co-Investigators: Heyland DK, Drover J.
Funding: \$3,500 KGH Foundation.
- 2000- "Improving the Quality of End of Life Care in Canada."
Principal Investigator: DK Heyland.
Co-Investigators: Tranmer J, Taylor S, Shortt S, Lam M, Gafni A, Kutsigiannis J, Dodek P,
Rocker G, Feldman-Stewart D, Lazar N.
Funding: \$266,441.00 from NHRDP
- 2001-2002 "Current Nutrition Support Practice in the Critical Care Setting Across Canada"
Principal Investigator: DK Heyland.
Co-Investigators: Drover J, Keefe L.
Funding: \$50,000.00 from Nestle Corporation, \$10,000.00 from BYK
- 2001- "Waveform Abnormalities of the aPTT in Critically ill Hospitalized patients (WATTCH Study)"
Principal Investigator: Heyland DK, Rapson D.
Co-Investigators: Howes D, Lord J.
Funding: \$1,356,800.00 from bioMerieux
- 2001-2002 "A Proposal to Develop a Multidisciplinary National Research Agenda Related to Nutrition Support in the Adult Critical Care Setting"
Principal Investigator: Heyland DK.
Funding: \$15,000.00 from Nestle, \$15,000.00 from Abbott Laboratories and \$20,000.00 from Canadian Institutes of Health Research
- 2001-2002 "Burden of illness in thromboembolism (BITEC) study "
Principal Investigator: DJ Cook
Co-Investigators: M Meade, G Guyatt, R Hodder, DK Heyland,
C Martin, J Marshall, R Patel, G Mehta, D Mazer, J Granton, D Mazer
Funding: \$20,000 from Pharmacia, Inc, \$4500 from Ontario Thoracic Society (Queen's University), \$4,458 from Ontario Thoracic Society (McMaster University), \$8,420 from Capital Heath Research Fund, and \$10,200 from PSI.
- 2002- "Long-term Follow Up of Survivors of Sepsis "
Principal Investigator: DK Heyland
Funding: \$159,480.00 from Eli Lilly Canada, Inc.
- 2002- "Improving the Quality of End of Life Care in Canada: A Longitudinal Follow-Up Study"
Principal Investigator: DK Heyland.
Co-Investigators: Tranmer J, Frank C, Groll D, Pichora D
Funding: \$167,584 from Physician Services Inc.
- 2002- "A Multidisciplinary Research Training Program in Digestive Sciences"
Principal Investigator: W. Patterson
Co-Investigators: DK Heyland, B Depew, S Vanner, H MacDonald, M Szewczuk, N Martin,
LR DeCosta, C Hill, J Morris, C Barajas-Lopez, M Blennerhasset
Funding: \$1.8 million from Canadian Institutes of Health Research
- 2002- "Developing an Integrated, Team Approach to Hospice Palliative Care"

Principal Investigator: M. Anderson, K. Parent.
Co-Investigators: DK Heyland, J Napper, S Donaldson.
Funding: \$141,000 from Canadian Health Services Research Foundation

- 2002-2005 "The Relationship between insulin resistance, coagulation, inflammation and clinical outcomes in critically ill patients"
Principal Investigator: DK Heyland
Co-Investigators: Farzad Saberi, Dilys Rapson and Khusheed Jeejeebhoy
Funding: \$20,000 from Canadian Intensive Care Foundation
- 2002-2005 "A randomized trial of a multifaceted strategy to implement nutrition support practice guidelines in the ICU setting."
Principal Investigator: Minto Jain
Co-Investigators: DK Heyland, John Drover, Rupinder Dhaliwal
Funding: \$18,000 SEAMO, Queen's University and \$24,000 from Canadian Intensive Care Foundation
- 2002 "End of Life/Palliative Care: Planning for a Quality Finish. A Multidisciplinary National Research Workshop."
Principal Investigator: DK Heyland
Co-Investigator: G Rocker
Funding: \$50,000 from Canadian Institutes of Health Research. 1 yr
- 2003- "Primary Care Management/Action Plans for Advanced Chronic Diseases (The RoadMAP Project)."
Principal Investigator: Marshall Godwin and Joan Tranmer
Co-Investigators: DK Heyland, and others
Funding: \$460,000.00 from Primary Health Care Transition Fund, Ministry of Ontario.
- 2003- "A Prospective Randomized Trial Comparing the Effectiveness of Post-pyloric Placement of a Standard Enteral Feeding Tube (EntriFlex) Versus a Frictional Feeding Tube (Tiger Tube) in an ICU Setting."
Principal Investigators: DK Heyland, A Samis, J Drover
Co-Investigators: C D'Arsigny, M Jain
Funding: \$14,250.00 from Clinical Teacher's Association at Queen's Endowment fund
- 2004- "Understanding and improving communication and decision-making at the end of life."
Principal Investigator: DK Heyland
Co-Investigators: DJ Cook, A Gafni, MK Giacomini, DR Kuhl, JE Tranmer
Funding: \$1,325,640 from Canadian Institutes of Health Research. 5 yr
- 2004- "Clinical Practice Guidelines in the Intensive Care Unit: A Canadian Survey"
Principal Investigator: T Sinuff
Co-Investigators: D Cook, M Meade, D Heyland, P Dodek, S Keenan, G Rocker, J Hutchison, G Ellrodt
Funding: \$24,907 from Hamilton Health Sciences New Investigator Fund Grant, Canadian Intensive Care Foundation.
- 2004- "Family caregiving in palliative and end-of-life care: A new emerging team"
Principal Investigator: KI Stajduhar, SR Cohen
Co-Investigators: NL Chappell, DK Heyland, PM Koop, AM Williams
Funding: \$1,346,620 from Canadian Institutes of Health Research. 5 yr
- 2004- Reducing deaths due to oxidative stress. The REDOXS© Study. A randomized trial of glutamine and antioxidant supplementation in critically ill patients.
Principal Investigator: DK Heyland

Funding: \$305,000 from Fresenius-Kabi and an application to CIHR pending.

- 2004- A randomized controlled trial comparing jejunal and gastric nutritional support in critically ill patients.
Principal Investigator: AR Davies
Co-Investigators: R Bellomo, DJ Cooper, GS Doig, SR Finfer, DK Heyland
Funding: \$138,859 CDN from Australian and New Zealand Intensive Care Foundation
- 2004- Long term follow up health-outcomes evaluation of ventricule in patients with pneumonia or aspiration of gastric contents leading to intubation, mechanical ventilation, and severe oxygenation impairment (VALID Study).
Principal Investigator: DK Heyland
Funding: \$686,720.00 from ALTANA Pharma
- 2004- "Reasoning in Ethics: Surveying Perspectives in EOL among Canadian Trainees (RESPECT study)"
Principal Investigator: Yoanna Skrobik
Co-Investigators: DK Heyland, D Cook, G Rocker, T Gorman, S Ahern
Funding: \$50,000 from CARENET
- 2005- "Development and Validation of a Questionnaire to Measure Patient and Caregiver Satisfaction with End of Life Care."
Principal Investigator: DK Heyland
Co-Investigators: G Rocker, R Cohen, P Dodek
Funding: submitted to Canadian Institutes of Health Research.
- 2005- Facilitating guideline adherence in the intensive care unit.
Principal Investigator: Sinuff T
Co-Investigators: D Cook, D Heyland, P Dodek, M Giacomini
Funding: \$36,000 from PSI
- 2005 The Canadian Critical Care Trials Group. Re-engineering for the next decade.
Principal Investigator: Cook D
Co-Investigators: J Marshall, P Hebert, DK Heyland, M Meade, J Hutchison, K Menon, G Rocker, P Dodek, C Doig, R Ward, B Winston
Funding: \$50,000 from CIHR (New Frontiers Program Development Grant)
- 2005 Assessment of a Glycemic Control Protocol and a Continuous Glucose Monitoring System in Critically Ill Patients
Principal Investigator: I Paula Newman
Co investigators: J Drover, D Heyland, R Houlden, J Muscedere
- 2005 Intensive Care Unit Patient Safety Team.
Principal Investigators: P Dodek, N Ayas
Co-Investigators: D Chittock, S Keenan, D Heyland, S Sheps, M Fitzgerald, S Robinson
Funding: Submitted to Michael Smith Foundation

Site Investigator for the following multicenter trials: 5 yr

- 1) A multicenter, randomized, controlled trial of transfusion requirements in critical care. 1997.
Funding: \$ 25,250.00
- 2) A centrally randomized, multicenter open trial of intravenous alatrofloxacin followed by oral trovafloxacin, compared with intravenous ceftriaxone to oral cefuroxime axetil with optional

- intravenous erythromycin to oral clarithromycin and/or intravenous to oral metronidazole or clindamycin for the treatment of community-acquired pneumonia in subjects requiring hospitalization and initial intravenous treatment.
Funding: \$ 23,968.00
- 3) A randomized, placebo-controlled trial of MAK195F (monoclonal antibody against tumour necrosis factor) in sepsis with hyperinflammatory responses. 1996-1999
Funding: \$ 420,000.00
 - 4) A multicenter, double-blind, randomized, placebo-controlled study of filigastim in the treatment of patients with pneumonia and severe sepsis. 1998-1999
Funding: \$ 98,084.27
 - 5) A randomized, double-blind, multicenter study comparing the efficacy and safety of piperacillin/tazobactam and imipenem/cilastatin administered intravenously every 6 hours to treat nosocomial pneumonia in hospitalized patients. 1999-2000
Funding: \$42,977.12
 - 6) A phase III study to determine the efficacy and safety for recombinant human activated protein C (rhAPC) in severe sepsis. 2000
Funding: \$67,187.75
 - 7) Venticute (rSP-C Surfactant) for the treatment of Acute Respiratory Distress Syndrome (ARDS): A randomized, multinational, multicenter, parallel group, double blind, controlled study. 2000-2001
Funding: \$55,500.00
 - 8) Multicenter, Double blind, Placebo controlled, Randomized, Phase 3 study of tifacogin (Recombinant Tissue Factor Pathway Inhibitor) in Severe Sepsis. 2001
Funding: \$205,540.90
 - 9) A Phase 3 Study to Demonstrate the Safety and Efficacy of Recombinant Platelet-Activating Factor Acetylhydrolase (rPAF-AH, Pafase) for Reducing 28 Day All Cause Mortality in Patients with Severe Sepsis. 2001-2003
Funding: \$53,557.78
 - 10) Recombinant Human Activated Protein C Protocol (FIK-MC-EVBF): An Open-label Study of Recombinant Activated Protein C in Severe Sepsis. 2001-2003
Funding: \$18,318.00
 - 11) Efficacy and safety of drotrecogin alfa (activated) in adult patients with early severe sepsis. 2002-2003
Funding: \$18,228.00
 - 12) Multicenter, double-blind, study of the efficacy and safety of GAR-936 compared to Imipenem/Cilastatin to treat complicated intra-abdominal infections in hospitalized patients. 2003-2004
Funding: \$29,073.60
 - 13) A phase 3 multicenter, randomized, placebo-controlled, double blind, three-arm study to evaluate the safety and efficacy of tifacogin (CHIRON). 2004-
Funding: pending
 - 14) (VALID) Venticute rSP-C surfactant in patients with pneumonia or aspiration of gastric contents leading to intubation, mechanical ventilation and severe oxygenation impairment (ALTANA). 2004-
Funding: \$pending

Total funding from Industry-sponsored research activities: \$1,722,620.22

XIX. RESEARCH INTERESTS

Nutrition support, gastrointestinal motility, stress ulcer prophylaxis, and gastrointestinal structure and function in the context of critical illness

Pneumonia, sepsis, and other infections in the critically ill patient.

Randomized trials, systematic reviews and meta-analysis, outcomes assessments, economic evaluations, and quality of life assessments.

Evidence-based medicine, patient preferences, end of life care and clinical decision-making.

XX. CLINICAL PRACTICE, INTERESTS AND ACCOMPLISHMENTS

Participant in the Evidence Based Medicine working group at McMaster University.

Participant in Evidence Based Medicine in Critical Care working group.

Member of the Adjudication Committee for the Sucralfate vs. Ranitidine multicenter randomized trial.

Consultant, BYK Canada. (Consultant on pharmacoeconomic study)

Consultant, Ross Division, Abbott Laboratories, Columbus, Ohio. (Consultant on trial design and implementation related to nutrition studies)

Attended "Awareness 98" sponsored by Health Evidence Application and Linkage Network (by invitation only), Toronto, Dec 7, 1998.

Member of Advisory Panel, Critical Care Research Network, London Health Sciences Center.

Grant Reviewer for Canadian Institutes of Health Research

Member of Practice Guidelines Committee, Canadian Critical Care Society

Organized and Chaired ICU Consultants Forum sponsored by Wyeth-Ayerst, Mississauga, ON, June 15-17, 2001.

Attended a by-invitation only conference on "Nutrition in Critical Care" sponsored by Nestle, Inc. Paris, France, September 15-18, 2002.

Attended a by-invitation only "Critical Care Advisory Panel Meeting" sponsored by Ross Products, Abbott Laboratories, Columbus, Ohio, December 8-10, 2002.

XXI. COMMUNITY ACTIVITIES

Coach, Pacers Basketball League

Coach, Cataraqui Clippers Soccer League

President, Church of Jesus Christ of Latter-Day Saints, Greater Kingston Area

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