

CAMSN



Canadian Association of Medical and Surgical Nurses

ACIIMC

Association Canadienne des Infirmières et Infirmiers en Médecine-Chirurgie

Proposal for Designation
of
Medical-Surgical Nursing
for
Certification

Revised July 15, 2008

Designation Proposal Committee

- **Pam Mangold, RN, MN –Professional Practice Consultant, Calgary Health Region, Calgary, Alberta.**
- **Karen Martin, RN, BN, Professional Practice & Workforce Initiatives Leader, David Thompson Health Region, Red Deer, Alberta.**
- **Janice Michaels, RN, BScN, Clinical Tutor, University of Alberta, Faculty of Nursing, Edmonton, Alberta.**
- **Patricia Rapley, RN, Clinical Coordinator, Yellowknife, NT**
- **Shannon Seitz, RN, Clinical Nurse Educator, Chinook Health Region, Lethbridge, Alberta.**
- **Nicole Simpson, RN, BScN - Professional Practice Consultant, Capital Health, Edmonton, Alberta.**

Table of Contents

Introduction	4
Canadian Association of Medical and Surgical Nurses Vision and Mission Statements	5
1.0 Standards of Practice	6
2.0 Recurrent Phenomena	7
2.1 Medical-Surgical Clinical Environment	7
2.2 Medical-Surgical Clients	8
2.3 Medical-Surgical Nurses	9
2.4 Medical-Surgical Nursing Care	9
3.0 Role Description	11
4.0 Nursing Literature, Education and Research	13
4.1 Journals and books	13
4.1.1 Journals	13
4.1.2 Electronic Resources	14
4.1.3 Books	14
4.2 Education	16
4.2.1 Undergraduate Education	16
4.2.2 Continuing Education	17
4.2.3 Graduate Education	18
4.3 Research	20
4.3.1 Representative Sample of Research	20
4.3.2 Five Examples Best Illustrating the Nursing Practice	21
4.3.3 Five Examples and Descriptions of Nursing Outcomes	22
5.0 Description of Defined Population	26
6.0 Number and Distribution of Nurses	27
7.0 Human Resources to Support Phases II and III	28
Glossary	29
References	31
Appendices	

Introduction/Background

In Canada the largest proportion of nurses, 42, 936 or 17.5%, identify their area of practice as medical-surgical nursing (Canadian Institute for Health Information [CIHI], 2007). Medical-surgical nursing is one of the longest standing, distinct and recognizable areas of nursing practice. It has been considered the foundation for nursing and for health care as a whole (Grindel, 2004). Medical-surgical nursing is unique in that it is not limited to a disease or a body system but is holistic in nature and requires nurses to possess and maintain comprehensive and diverse knowledge and competencies (Grindel, 2004; Profetto-McGrath & Williams, 2003). Until recently medical-surgical nurses have not benefited from representation by a national interest group nor achieved due recognition of their competencies or excellence in practice through a national program such as certification.

In June, 2006 in Saskatoon, Saskatchewan, nurses from across Canada met at the first Canadian national medical-surgical nursing conference “Advancing Excellence in Medical-Surgical Nursing; We are more than just a training ground!“. It was during the facilitated afternoon of this conference that the participating nurses moved to have a national group established to seek and develop national certification.

In 2007, the Canadian Association of Medical and Surgical Nurses (CAMSN) was established and approved as a Canadian Nurses Association emerging group. CAMSN is seeking designation for the purpose of establishing national certification. It is through designation and certification that medical-surgical nurses in Canada hope to gain recognition for being far “more than just a training ground”.



Vision

The voice of medical and surgical nurses in Canada

Mission

Medical and Surgical nurses provide nursing care to adults experiencing complex variations in health. They utilize diverse clinical knowledge and skills to care for multiple acutely ill adults and their families. They are leaders at organizing, prioritizing and coordinating client care as well as working with interdisciplinary teams. The practice of medical-surgical nursing requires application of evidence based knowledge and best practice standards to provide quality, safe and ethical care to clients across the continuum of care. The Canadian Association of Medical and Surgical nurses advocates, supports and promotes the integral role of medical and surgical nurses to the health care system.

References and resources

Grindel, G.C. (2004). Medical/surgical nursing celebration of the specialty. Nursing Spectrum. Retrieved 11/20/2007, from <http://www2.nursingspectrum.com/articles/article.cfm?aid=12627>

Mercer, K., & Hooper, K,. (2007). Analysis of CNA contest questions: CAMSN definition identified. Received on 08/16/2007 from Kathleen.mercer@cdha.nshealth.ca

Profetto-McGrath, J., and Williams, B. (2003) Uniqueness of Medical- Surgical Nursing. Faculty of Nursing, University of Alberta.

1.0 Standards of Practice (Appendix A)

The Canadian Association of Medical and Surgical Nurses' National Practice Standards were developed by a representative committee of nurses under the framework and support of the Canadian Association of Medical and Surgical Nurses (CAMSN). The development process was facilitated by Assessment Strategies (ASI). The standards committee included nurses from east coast to west coast, with six to thirty six years experience, baccalaureate degrees to doctoral preparation, as well as bilingual representation. In April 2008 the standards were circulated for review to 203 CAMSN members; this number represents the membership roster at that time. Letters of support for the standards can be found in appendix A. The stakeholder feedback was reviewed and final changes made to the standards. The National Practice Standards Committee approved the standards on May 16, 2008. The National Practice Standards will be presented for final membership approval at the June 15, 2008 Canadian Medical-Surgical Nursing Conference in Ottawa, Canada.

The standards recognize and support the full scope of nursing practice. They provide foundation for competent, quality, safe and ethical care. They support the understanding and definition of the medical-surgical nurse's role by other nurses, clients, health care providers and the general public. (Canadian Nurses Association [CNA], 1998).

2.0 Recurrent Phenomena in Practice

“Medical-surgical nurses deliver a mosaic of care in a myriad of health care settings” (Saver, 2002). They are unique in the care they provide as it is not focused on a body system but on the holistic needs of the complex patient. They care for clients and families who are managing the health impacts of a multiplicity of diagnoses. These diagnoses correspond to acute and chronic health issues and require a broad range of medical-surgical nursing diagnosis and care interventions. (Bulechek, Butcher & McCloskey Dochterman, 2008) There is no such thing as a typical day (Mercer & Hooper, 2007).

To understand and define the key phenomena that are addressed in medical-surgical practice is to understand the variety, diversity and uniqueness of the clinical environment, clients, nurses and care provided.

2.1 Medical- Surgical Clinical Environment:

Medical-surgical nurses provide care to clients in a variety of settings. Nurses in these environments must be creative with resources, advocate for improvements and lead change in practice to support quality, ethical and safe care for their clients. The following are common phenomena in medical-surgical practice environments:

Medical-surgical nurses provide care in environments that are in a constant state of fluctuation including:

- Client populations with variability in age, diagnosis, acuity, level of dependency, hospital length of stay and expected outcomes.
- Unpredictable and dynamic patient to nurse assignments. There may be variation in types of clients (see above bullet), number of clients, and changes within the shift.
- Unpredictable and variable resource availability for example: varying number of nursing care providers, staff mix, supplies, equipment, information, education, technology and leadership support.
- Expansive and changing use of clinical and non clinical technology to care for a diverse population.
- Types and number of learners and the level of responsibility for these learners (preceptor versus clinical instructor lead).
- Staffing with a team mix of health care providers, the largest percentage of novice nurses (CIHI, 2007) and high attrition rates (to specialty areas).

Medical-surgical nurses provide care in diverse environments across the continuum of care for example:

- Rural, suburban and urban centres.
- Designated medical or surgical units or combined medical-surgical units.
- Acute care step down units.
- Pre-operative and post-operative surgical care units.
- Community acquired pneumonia related 'winter bed' units.
- Alternative level of care units.
- Military nursing assignments

2.2 Medical-Surgical Clients:

Medical-surgical clients are individuals presenting with complex medical and/or surgical diagnoses and corresponding complex nursing care needs. Nurses in medical-surgical nursing often seek out this practice area because of the level of client contact required. The following are the common phenomena of medical-surgical clients.

Medical-surgical nurses provide holistic care to:

- Clients who vary from ambulatory to total care.
- Clients requiring acute to chronic disease management.
- Clients with a diversity of admitting diagnoses not limited to one body system.
- Clients with multiple and complex co-morbidities.
- Clients requiring care across the continuum of care.
- Clients across the adult life span.
- Clients and their families.

2.3 Medical-Surgical Nurses:

The Canadian Institute of Health Information (2007) reports that medical-surgical practice areas employ the greatest number of nurses of any clinical setting. The knowledge and competencies they must attain and maintain to look after their diverse client base is extensive. The following are the common phenomena surrounding the medical-surgical nurse.

Medical-surgical nurses:

- Are the highest numbers of novice nurses of any clinical setting with 26.1% of nurses working in this area having 5 or less years of experience (CIHI, 2007).
- Are the highest numbers of male nurses of any clinical setting with 17.5% of male nurses working in this area (CIHI, 2007).
- Are experts and leaders in effective organization, coordination, and prioritization (manage many complex clients at once as well as other competing priorities).
- Are collaborators and leaders in the interprofessional team.
- Are educators and mentors (greatest number of clinical placements and novice nurses).
- Are challenged by diverse ever changing work environments.

2.4 Medical-Surgical Nursing Care:

The recurrent phenomena of the medical-surgical environment, client and nurse impact how care is provided in medical-surgical clinical areas.

Medical-surgical nursing care requires:

- Coordination, organization and prioritization of complex multiple patient assignments reported as high as 10 patients per nurse (Pollick, 2001).
- Knowledgeable and skilled nurses to navigate clients and their families through the challenges of interfacing with a dynamic and complex health care system.
- The integration of discharge planning into daily patient care.
- Interprofessional collaboration and care.
- Increasing use of technology.
- Integration of nursing research relating to a diversity of patient care needs.

- Integration of best practice guidelines relating to a diversity of clinical situations.
- Advocacy for quality, ethical and safe work environments.

3.0 Role Description for Medical-Surgical Nurses

Medical -surgical nursing is considered the foundation of nursing (Grindel, 2004) and provides a common educational grounding for all nurses. It is unique in that it is not limited to a disease or body system, but has a holistic focus on managing complex needs of adults and their families. Nurses committed to medical-surgical nursing demonstrate essential knowledge and skills aimed at caring for, advocating for and supporting adults across the continuum of care.

The role of the medical surgical nurse is to provide care to multiple adults experiencing complex variations in health with medical and/or surgical diagnosis. These variations can be acute or chronic, predictable or unpredictable, episodic or continuous and are often complicated by co-morbidities such as diabetes, hypertension and cardiovascular disease (Profetto-McGrath et al, 2003). Medical-surgical nurses practice in a variety of settings. Some examples include acute care, outpatient clinics, supportive care, continuing care and in the community. The medical surgical nurse provides holistic client and family centered care in all settings.

The medical surgical nurse utilizes and maintains an extensive knowledge base. The medical-surgical knowledge base continually advances and ongoing competency requires medical –surgical nurses to access and integrate this information in to their practice (Taylor, 2006). Medical-surgical nurses actively participate, promote and disseminate related research. Medical-surgical nurses continually learn and demonstrate evidence informed practice ensuring the provision of competent, quality, ethical, and safe care for their clients and their families.

Medical surgical nurses coordinate nursing care through the, organizing, prioritizing and the appropriate assignment of care .They are experts at managing care within shorter lengths of stay, increased patient acuity levels and increased nursing work loads. Medical-surgical nurses are instrumental at navigating patients through the health care system, their role is essential to ensuring successful discharge with planning beginning on admission. Their use of adult teaching principles and pedagogical models are essential for knowledge transfer.

Medical-surgical nurses are committed to excellence in practice and maintain diverse and comprehensive nursing competencies. They utilize astute assessment skills combined with critical thinking and problem solving capabilities. Their effective communication skills are essential to establishing therapeutic relationships with the diverse range of clients, families and communities for which they provide care. They work both autonomously and

collaboratively with other members of the interprofessional health care team. They provide support for client empowerment and goal attainment.

Medical-surgical nurses mentor, guide and support the largest number of students, new nurses and other health care providers. Their diverse knowledge and competencies supports the ideal foundational learning for all of these learners.

Medical surgical nurses are the largest single group of nurses. They are one of the key participants in nursing issues, both globally and locally. Some examples of these issues include health care safety, nursing shortages, recruitment and retention, interprofessional collaboration, First Nations health, falls prevention, , advances in technology, nurse-patient ratio's, nurse-physician collaboration, handover reports for communicating patient care, autonomy, control over practice and professional fulfillment. They take action in all areas of health care including primary prevention, treatment, rehabilitation and end of life care.

Medical surgical nurses assume multiple roles. These roles encompass care giver, care coordinator, navigator, nursing leader, educator, manager, consultant and researcher (Profetto-McGrath et al, 2003). Medical-surgical nurses are dedicated to professional development, leadership initiatives, and innovations in clinical practice, mentoring relationships, and nurses as change agents. Medical surgical nurses are an invaluable part of the health care team and are essential professionals in the overall care of adults.

4.0 Nursing Literature, Education and Research

Journals and Books

4.1.1 Journals

Medical-surgical nurses provide holistic care to clients with diverse clinical needs in a variety of settings across the continuum of care. These dynamics mean there is a wide breadth of publications useful in supporting practice and for dissemination of information. The list below is a small sample of some commonly used journals:

1. Advances in Skin and Wound Care
2. American Journal of Nursing
3. Diabetes
4. Evidence-Based Nursing
5. Geriatric Nursing
6. Journal for Nurses in Staff Development
7. Journal of Advanced Nursing
8. Journal of Clinical Nursing
9. Journal of Continuing Education in Nursing
10. Journal of Interprofessional Care
11. Journal of Transcultural Nursing
12. Medical Clinics of North America
13. MEDSURG Nursing: The Journal of Adult Health
14. Nursing 2008
15. Nurse Educator
16. Nursing Clinics of North America
17. Nursing Made Incredibly Easy
18. Nursing Management
19. Patient Education and Counseling
20. The Canadian Journal of Nurse Leadership

4.1.2 Electronic resources

Medical-surgical nurses frequently access electronic resources for “just in time” information and updates to practice. They also use these resources to review available best practice guidelines and policies. The following is a sample of frequently used websites.

1. <http://allnurses.com>
2. <http://www.cawc.net>
3. <http://www.cinahl.com>
4. <http://www.consultgerirn.org>
5. <http://www.diabetes.ca>
6. <http://www.ismp-canada.org>
7. <http://www.lexi-comp.com>
8. <http://www.mayoclinic.com>
9. <http://www.merck.com>
10. <http://www.nurseeducatoronline.com>
11. <http://www.nursingcenter.com>
12. <http://www.nurseone.ca>
13. <http://www.paincare.ca>
14. <http://rn.modernmedicine.com>
15. <http://www.rnao.org>

4.1.3 Books

Through the CAMSN membership we have identified that there are two common medical-surgical nursing texts used in Canadian undergraduate nursing programs. Both of these texts have Canadian medical-surgical nurses as authors and contributors they are:

1. Day, R.A., Paul, P., Williams, B., Smeltzer, S.C., & Bare, B. (2007). Brunner & Suddarth’s Textbook of medical-surgical nursing first Canadian edition. Philadelphia, PA: Lippincott Williams & Wilkins.

Canadian Authors:

Rene A. Day PhD, RN Professor, Faculty of Nursing, University of Alberta, Edmonton, Alberta.

Pauline Paul, PhD, RN Associate Professor, Faculty of Nursing, University of Alberta, Edmonton, Alberta.

Bev Williams, PhD, RN Associate Professor, Faculty of Nursing University of Alberta, Edmonton, Alberta.

2. Lewis, S.L., Heitkemper, M.M., Dirksen, S.R., Goldsworthy, S. & Barry, M.A. (2006). Medical-surgical nursing in Canada: Assessment and management of clinical problems. Toronto, Ont: Elsevier.

Canadian Authors:

Sandra Goldsworthy, RN, BScN, CNCC, MSc, Professor of Nursing Durham College/University of Ontario Institute of Technology, Toronto, Ontario.

Maureen Barry, RN, BScN, MScN, Senior Lecturer, Faculty of Nursing , University of Toronto, Toronto, Ontario.

There are many other books that support medical-surgical nursing practice a sample of these includes:

1. Black, J.M. & Hawks, J.H. (2008) Medical-surgical nursing: Clinical management for positive outcomes. Philadelphia, PA: W B Saunders Co.
2. Linton, A.D. (2007) Introduction to medical-surgical nursing. Philadelphia, PA: W B Saunders Co.
3. Potter, P.A. & Perry, A.G. (2007). Fundamentals of nursing 6th edition. Philadelphia, PA: Elsevier.
4. Springhouse Corporation. (2005) Handbook of medical-surgical nursing, 4th edition. Philadelphia, PA: Lippincott Williams & Wilkins
5. Springhouse, S. E., Labous, D. & Levine, J. (Eds.). (2007) Medical surgical nursing made incredibly easy, 2nd edition. Philadelphia PA; Elsevier.

Education (opportunities in the area)

4.2.1 Undergraduate education

Medical-surgical nursing has been identified as the foundational area for nursing education and practice. It is unique in that it is the only clinical area of nursing that is universal to all undergraduate nursing programs. Courses focusing on medical-surgical nursing frequently occur as students' first and senior clinical rotations. The diversity and complexity of the medical-surgical practice environment, is ideal for, and supportive of, the education of all level of learners.

Although nursing programs typically include more than one course focused on medical-surgical nursing, for consistency, four introductory courses will be described.

McMaster School of Nursing Basic Stream- Level II

Course Descriptions Nursing 2L03 and 2P03

2L03 and 2P03 are clinical nursing courses that provide the opportunity to implement the nursing process with a focus on assessment, nursing diagnoses and beginning planning nursing intervention and evaluation for individuals and/or families. These clinical courses integrate concepts and theories from nursing, biological, behavioural and social sciences. The courses address a broad range of clinical skills including scientific and humanistic caring, clinical and ethical decision making, critical thinking and interprofessional communication and practice. Responsibility for own professional growth through self direction and self evaluation is demonstrated through analysis of own role and function.

The placement options for Level 11 fall into two categories

1. Medical
2. Surgical

(Adapted from McMaster University School of Nursing, 2008)

Lawrence. S. Bloomberg, Faculty of Nursing, University of Toronto- Undergraduate Courses

Course description NUR 371Y1- Introduction to Acute Care Nursing: Adults

These courses will "introduce students to acute medical surgical nursing practice. Content related to nursing understanding of the physical conditions that cause disruptions will be integrated with the lived experience of persons and families coping with acute illness and the process framework. Caring, critical thinking, and problem solving skills are emphasized. Opportunity to apply theoretical knowledge and nursing therapeutic skills at a novice/beginner level while working

with patients and their families in the adult care setting” (Lawrence.S. Bloomberg, Faculty of Nursing, 2008)

The University of British Columbia- School of Nursing- BSN program

Course description for Nursing 330- Nursing Care of Individuals in the Context of Community.

“Clinical nursing practice focused on acutely ill individuals in medical and surgical units in hospital settings are the focus. Clinical nursing practice in relation to health, wellness, disease and illness in the context of community is provided as well as application of concepts, theories and the nursing process.” (University of British Columbia School of Nursing, 2008)

McGill School of Nursing- BSc (N) program

Course description for NUR1 323- Illness management 1

“The focus of this course is the medical, surgical and nursing management of the major illness in adults and children. Topics will include diagnostic tests, drug therapies, dietary management, exercise, relaxation techniques, pain management approaches, patient education and strategies for maintaining physical and emotional well-being.” (McGill School of Nursing, 2008)

4.2.2 Continuing education

Medical-surgical nurses must attain and maintain extensive knowledge and skills across the spectrum of client care. They must know something about everything (Pollick, T, 2001; Mercer et al, 2007). As such the applicable education opportunities are diverse and varied. Education has also changed in that most continuing education opportunities are offered through a variety of modalities such as on site, distance or a combination of both. The first three opportunities are specific to medical-surgical nurses. The others are a sample of educational opportunities where the majority of attendees are medical-surgical nurses.

Medical-surgical nursing specific:

1. Academy of Medical-Surgical Nurses 17th Annual Convention,, October 1-6, 2008, Nashville TN
2. Canadian Association of Medical and Surgical Nurses 2nd Biannual conference. Medical-Surgical Nursing: Head, Heart, Hands of Acute Care. June 15, 2008, Ottawa Ont. Pre-conference to Canadian Nurses Association Biennium (program can be found in Appendix B)

3. Capital Health Registered Nurses Professional Development Centre. Adult Medical-Surgical Nursing Program. Halifax, NS.
WWW.cdha.nshealth.ca/default.aspx?page=RNPDC&categories.1=490&enterContent.Id.0=17160 (information sheet can be found in Appendix B)

Other:

1. Centre for Nursing Studies. St. John's NL.
<http://www.cns.nf.ca/programs/programs.htm>
Description: Offers post basic programs including gerontological nursing and health assessment
2. College of Nurses of Ontario (CNO)
<http://www.cno.org/prac/learn/modules/index.htm>
Description: CNO elearning centre has a variety of modules including Infection and prevention, medications and nursing utilization
3. Executive Links. <http://nursinglinks.ca>.
Description: variety of workshops such as lab test interpretation, infection control, & dementia.
4. Halifax- The Canadian Healthcare Safety Symposium.
<http://www.bksa.com/halifax>
Description: Meeting of individuals and organizations with a desire to improve health care safety. Rotating conference is in Winnipeg October 2008.
5. MacEwan College Centre for Professional Nursing Education
<http://www.macewan.ca/community>
Description: MacEwan College has a variety of areas of study such as Gerontology, wound management and special studies- medical and surgery. Edmonton, AB.

4.2.3 Graduate education

Graduate education allows the medical-surgical nurse to choose a variety of directions. Nurses can choose to seek preparation for the role of advanced practice, leadership, research or education. There is a desire to ensure nurses can visualize and actualize a career pathway in medical-surgical nursing that includes graduate preparation. It is hoped with certification and the professional and national recognition of medical-surgical nurses that these opportunities and supports for graduate education and capacity building will evolve.

In Canada graduate nursing programs are broad. In the United States where medical-surgical nursing has a well established certification and interest group there are graduate programs specifically targeted to the medical-surgical nurse.

The following are 2 examples of graduate nursing programs one from Canada and one from the United States.

University of Alberta, Faculty of Nursing- Master of Nursing in Advanced Nursing Practice.

Program Description:

“The Master of Nursing (MN) program prepares nurses to fulfill leadership roles and provide specialized care and health promotion in institutional/community settings, develop health policies and in some instances provide extended health services.” (University of Alberta, 2008, p.2)

Courses and experiences are intended to enhance knowledge and skill in four main areas

- Nursing practice
- research and evidence-based practice in nursing and health care
- leadership/management
- teaching/learning

Program has 3 streams

- Individual/Family Health Nursing
- Community/ Public Health Nursing
- Leadership, Research and Teaching

Students can choose thesis or non thesis routes. There are core courses to all 3 programs and then specific course to route chosen. It is within the clinical courses and course research that the nurse focuses on their clinical area of experience. (Adapted from University of Alberta, 2008)

University of Michigan, School of Nursing.-Master of Medical-Surgical Nursing Program

Program Description:

“The Medical-Surgical program focuses on the biological, social, psychological, and spiritual responses of adult human beings to physiological dysfunction, actual or potential. Particular emphasis is placed on investigating and validating current and emerging theories, promoting health, preventing illness and disability, and restoring the ill and disabled to a level of health in which they can function optimally. Advanced, innovative courses in nursing practice provide students with an opportunity to make their own discoveries as well as integrate existing knowledge. Practicum associated with the course work offer rich learning environments for developing experts in medical-surgical nursing and for developing expertise in medical-surgical nursing and for refining clinical leadership skills.” (University of Michigan, 2008)

University of Ottawa School of Nursing Master's of Nursing Science (MScN)

Program Description: (Adapted from University of Ottawa, 2008)

The goal of the program is to educate registered nurses for an advanced practice role and/or doctoral studies. Graduates of the program are prepared to assume leadership roles in improving the quality of nursing care in various health care settings. The program provides rigorous academic preparation based on theory and research to address health-related phenomena experienced by individuals, families, groups, aggregates and communities. The program offers two areas of concentration: **Primary Health Care** and **Tertiary Health Care**. Primary health care, which is mainly community based, includes health promotion, prevention of illness and provision of essential first-level care. Tertiary health care is a specialized level of health care, which encompasses acute and chronic illness. Nurses with this concentration will practice in a variety of specialty care units. The students must choose one of the two concentrations.

The master's program is offered in English and French, as a thesis option or as a clinical option (course based) and on a fulltime or part time basis. In accordance with the University of Ottawa policy, students can write exams, course assignments and the thesis in either language.

Research

4.3.1 Representative sampling of medical-surgical nursing research published within the last 10years

1. Ahmad, M.M., & Alasad, J.A. (2004). Predictors of patients' experiences of nursing care in medical-surgical wards. *International Journal of Nursing Practice*, 10(5), 235-241.
2. Clarke, A., & Ross, H. (2006). Influences on nurses' communications with older people at the end of life: perceptions and experiences of nurses working in palliative care and general medicine. *International Journal of Older People Nursing*, 1(1), 34-43.
3. Davis, B.A., Ward, C., Woodall, M., Shultz, S., & Davis, H. (2007) Comparison of job satisfaction between experienced medical-surgical nurses and experienced critical care nurses. *MEDSURG Nursing* 16(5), 311-316.
4. Hardin, S.R. (2007). Cardiac disease and sexuality: Implications for research and practice. *Nursing Clinics of North America*, 42(4), 593-603.
5. Idvall, E., & Rooke, L. (1998). Important aspects of nursing care in surgical wards as expressed by nurses. *Journal of Clinical Nursing* 7(6), 512-520.
6. McCaughan, E., & Parahoo, K. (2000). Medical and surgical nurses' perception of their level of competence and educational needs in caring for patients with cancer. *Journal of Clinical Nursing*, 9(3), 420-428.

7. Robinson, S., Allen, L., Barnes, M.R., Berry, T.A., Foster, T.A., Friedrich, L.A., Holmes, J.M., Mercer, S., Plunkett, D., Vollmer, C.M., & Weitzel, T. (2007). Development of evidence-based protocol for reduction of indwelling urinary catheter usage. *MEDSURG Nursing*, 16(3), 157-161.
8. Rutherford, P., Lee, B., & Greiner, A. (2004). Transforming care at the bedside: IHI innovation series white paper. Boston; Institute for Healthcare Improvement. Retrieved April 8, 2008 from www. IHI.org.
9. Salmond, S., & Ropis, P. E. (2005). Job stress and general well-being: A comparative study of medical-surgical and home care nurses. *MEDSURG Nursing*, 01-Oct-05.
10. Torekelson, D.J., & Dobal, M.T. (1999). Constant observation in medical-surgical settings: A multihospital study. *Nursing Economics*, 17(3), 149-155.
11. Wu., J.R., Moser, D.K., Lennie, T. A., & Burkhart, P.V. (2008). Medication adherence in patients who have heart failure: A review of the literature. *Nursing clinics of North America*, 43(1), 133-153.
12. Zeitz, K., McCutcheon, H., & Albrecht, A. (2004). Postoperative complications in the first 24 hours: A general surgery audit. *Journal of Advanced Nursing*, 46(6) 633-640.

4.3.2 Five examples of medical-surgical nursing research reports that illustrate nursing practice (Copies in Appendix C)

1. Di Pietro, T., Coburn, G., Dharamshi, N., Doran, D., Mylopoulos, J., Kushniruk, A., Nagle, L., Sidani, S., Tourangeau, A., & Laurie-Shaw, B. (2008). What nurses want: diffusion of an innovation. *Journal of Nursing Care Quality* 23(2), 140-146.
2. Jacobs, J.L., Apatov, N., & Gleib, M. (2007). Increasing vigilance on the medical/surgical floor to improve patient safety. *Journal of Advanced Nursing*, 57(5), 472-481.
3. Lee, E., Lee, M., & Guirao, A. (2006). Comparison of nursing interventions performed by medical-surgical nurses in Korea and the United States. *International Journal of Nursing Terminologies & Classifications*, 17(2), 108-117.
4. Tourangeau, A.E., Doran, D.M., McGillis Hall, L., O'Brien Pallas, L., Pringle, D., Tu, J.V., & Cranley, L.A. (2007). Impact of hospital nursing care on 30-day mortality for acute medical patients. *Journal of Advanced Nursing*, 57(1), 32-41.
5. Zeitz, K. (2005). Nursing Observations during the first 24hours after a surgical procedure: What do we do? *Journal of Clinical Nursing*, 14(3), 334-343.

4.3.3 Five examples of Literature and articles that illustrate nursing outcomes (Copies in Appendix D)

1. Duff, B., Gardiner, G., & Barnes, M. (2007). The impact of surgical ward nurses practicing respiratory assessment on positive patient outcomes. *Australian Journal of Advanced Nursing*, 24(4), 52-56.

Background: Surgical wards are seeing a change in patient demographics including an increase in highly acute and dependent patients. Nurses in these clinical settings have had to increase their knowledge and skills to manage these patients. The literature indicates that nurses' respiratory assessment including, lung field auscultation, is fundamental to post operative care. It is also noted that early recognition and intervention of changes in respiratory status impacts positively on patient outcomes. However, many nurses and clinical areas have not included complete respiratory assessments as routine nursing care.

Purpose and method: The purpose of this study was to examine the inclusion of respiratory assessment into everyday surgical nursing practice through a systematic review of the literature. The barriers to implementation and the impact to patient outcomes are also explored

The systematic review was completed with a search of the Cumulative index to Nursing and Allied Health Literature (CINAHL), Pub Med and Medline databases. The table of contents from selected journals was reviewed and a critical appraisal of the quality and outcomes of the articles was completed.

Results: The literature supports the critical role nurses play in the recognition and prevention of adverse events relating to respiratory function. It is also clear that nurses' early recognition of respiratory status changes and their subsequent nursing interventions has the potential to reduce clinical complications such as atelectasis, pneumonia and pulmonary emboli and support optimal patient outcomes.

Several barriers to implementing this nursing practice were identified. The barriers included nurses' lack of confidence in their knowledge and skill, limited education and lack of emphasis in programs. Although respiratory assessment is basic to all nursing programs it remains a challenge to implement for surgical nurses.

Implications for practice: The authors recommendations include ensuring post operative monitoring of vital signs incorporate a complete respiratory assessment. They also recommend further research around education and facilitation of practice change.

2. Foust, J.B. (2007). *Discharge planning as part of daily nursing practice. Applied Nursing Research 20(2), 72-77.*

Background: Discharge planning is an important and complex part of nursing practice. Reports show that many medical patients experience adverse events after their hospital discharge. Nurses in the medical-surgical environment are challenged to provide comprehensive discharge planning when they are caring for increasingly acute patients with multiple chronic conditions with shorter hospitalizations.

Purpose and method: This qualitative study examined nurses' efforts in discharge planning. The purpose was to address the question on how nurses prepare patients for discharge home during their hospitalization. Eight nurses consented to be part of this study on a 32 bed surgical unit. A naturalistic paradigm was used for the study with a constant comparison method for data analysis. There were three study phases including exploratory, focused exploration and informational redundancy. Data collection included participant observation, interviews and document review.

Results: Six major elements nurses rely on for discharge planning were identified including nurses expectations of patients' progress, monitoring patients' progress, nurses' evaluation of patients' progress, patient teaching, patient readiness for discharge and communication with other health care providers. It was found that documentation of ongoing discharge planning was minimal and as a result the work is often invisible.

Implications for practice: This study provides support to discharge planning being an important part of daily nursing work. With scarce documentation there is a lack of understanding on how nursing intensive this work is. It was concluded that with well documented studies on post hospitalization adverse events understanding the need for coordination of discharge planning is essential. The proper allocation of resources to discharge planning is needed to improve health care quality.

3. Linck, C., & Phillips, S. (2004). Managing disruptive behaviors in an acute medical/surgical service: A strategy for success. *Holistic Nursing Practice, 18(5), 223-227.*

Background: Nurses in medical-surgical environments are often faced with the challenge of managing disruptive clients and families. These stressful situations can adversely affect the psychological well being of nurses and ultimately impact patient outcomes.

Purpose and method: This study explores an innovative solution to managing an increase in disruptive situations on a 148 bed medical/surgical service.

The management staff at this site implemented a position for a clinical nurse specialist with psychiatric and medical/surgical experience to coordinate care for disruptive patients/and or families and patients with complex psychosocial or safety needs. The management team identified the need to measure definitive outcome measures for role evaluation.

A pre and post survey design was used. A baseline survey was distributed to 100 RNs with a 38% response rate. The identical survey was distributed post-CNS role implementation to 104 nurses with a 35% response rate.

Results and implications for practice: The study demonstrated a statistically significant improvement in nurses' perception of management support following implementation of the CNS role as well as improvement in all the other variables including patient satisfaction. The implementation of the CNS role in this clinical unit to improve the quality of care provided to patients has proven to be an effective strategy.

4. Minick, P., & Harvey, S. (2003). The early recognition of patient problems among medical-surgical nurses. *MEDSURG Nursing*, 12(5), 291-297.

Background: Literature and experience ascertains that nurses who recognize early changes of patient deterioration and take corrective action can prevent further decline in a patient's status and increase the likelihood of a positive health outcome. This qualitative research study uses interpretative phenomenology to investigate the philosophical approach and methods used by nurses to recognize patient problems early.

Purpose and method: The purpose of this study was to describe the phenomenon of early problem recognition among medical-surgical nurses. 14 participants were chosen through purposeful sampling to represent medical-surgical nurses identified as skillful in the early recognition of patient problems, who might be willing to share their early recognition experiences and to achieve diversity in years of nursing experience. Interviews were conducted with groups of two to four nurses and they were asked to describe a patient-care experience in which they felt they had made a difference when recognizing a patient problem early. These stories were captured on audiotape and then summarized.

Results: Three themes describing ways of knowing that enabled the early recognition of patient problems were identified in the medical-surgical nurses' descriptions of early recognition experiences: (a) knowing the patient directly, (b) knowing the patient through the family, and (c) knowing something is not as expected. Data from this study suggest that nurses learn subtle patterns from individual patients as well as groups of patients through knowing the patients.

Implications for practice: These findings indicate the need for nurses to describe patterns of knowing patients when consulting with physician colleagues to improve patient outcomes.

5. Nelson, G.A., King, M., & Brodine, S. (2008). Nurse-physician collaboration on medical-surgical units. *MEDSURG Nursing* 17(1), 35-40.

Background: Interdisciplinary collaboration is essential to providing care to the complex and diverse patients on medical-surgical units. The literature also supports interdisciplinary care as critical to quality patient care. Positive and effective nurse-physician collaboration has shown to have beneficial impacts on retention and recruitment as well as patient care.

Purpose and methods: The purpose of this study was to explore "...medical-surgical nurses' and physicians perceptions of their collaborative behaviors on medical-surgical units." (p.36). One hundred and twenty surveys were distributed to both nurses and physicians (convenience sample) with 84% and 43% response rates respectively. The Collaborative Practice Scale (CPS) was used in the survey and univariate analysis was used to test the differences in the mean scores and group differences

Results: The results indicated a significant difference between nurses and physicians in their perceptions of collaborative behaviours and that collaborative practice occurred at low to moderate levels in medical-surgical units. These findings are consistent with previous studies and demonstrate little has changed over time. The study provides some indication of factors that might be affecting the imbalance in this relationship such as a nurse's lack of confidence and assertiveness in their communications.

Implications for practice: This study indicates that work needs to continue on maximizing nurse-physician collaboration in order to support quality patient care and satisfying work environments.

5.0 Defined Population

The Canadian Association of Medical and Surgical Nurses is seeking designation for medical-surgical nursing care of adults. The medical-surgical population is unique in that they are undifferentiated by gender, disease, organ system or step/phase on the care continuum. Medical-surgical clients require care across the lifespan and care continuum. They have a wide variety of clinical needs with equally wide variety of expected outcomes. They have a high incidence of multiple co-morbidities and require a complex plan of care. The care they require does not focus only on the reason for admission or presentation for care.

Statistics of medical-surgical client hospitalizations are kept locally, provincially and nationally. According to the Canadian Institute of Health Information (2005) 68% of the 2,161,848 inpatient hospitalizations in Canada are for medical and/or surgical care (of these 10% of the surgery and 14% of the medical patients spent time in special care units).

What defines medical-surgical clients is the complexity of their differences. However, some key commonalities can be identified including that the medical-surgical client is most often (Canadian Association of Medical and Surgical Nurses {CAMSUN}, 2008):

- Senior
- Requiring medical or surgical management of an acute exacerbation of a chronic issue (medicine) or acute incident/requirement for procedure (surgery).
- Someone with multiple co-morbidities including diabetes, hypertension, cancer, congestive heart failure, chronic obstructive pulmonary disease or renal disease
- At risk for developing, or may already present with, multiple “potential” issues/needs. Nurses identified that a significant amount of their care for these clients is in identifying potential needs/issues as they can rapidly escalate impacting their current reason for admission, level of care required and ability to be discharged (CAMSUN, 2008). In one study it was noted that 10% of the patients in medical-surgical care had as many as 19 different North America Nursing Diagnosis Association (NANDA) diagnoses (Volpato, 2003). In this study the highest occurring NANDA diagnoses for medical –surgical patients included risk for infection (58%), pain (50%), constipation (42%), activity intolerance (35%), sleep pattern disturbance (28%) (Volpato, 2003).
- Requiring multi disciplinary coordination of care to ensure comprehensive continuance of care. Often requiring nursing, physician, pharmacy, rehabilitation therapy, social work and family support.

6.0 The Number and Distribution of Registered Nurses in Medicine-Surgery

The Canadian Association of Medical and Surgical Nurses (CAMSN) is seeking designation for national certification for the largest single group of nurses in the country. Membership in CAMSN continues to grow rapidly from 60 members in November 2007, the first board meeting, to 400 as of July 15, 2008.

The Canadian Institute of Health Information reports there were 252,948 Registered Nurses in Canada in 2006. Medicine-surgery nurses comprise the largest overall percentage of these nurses at 17% or 42,936. In the breakdown by province the percentage of medicine-surgery nurses range from 20.2 % of the nurses in Newfoundland to 8.3% of the nurses in the Northwest Territories (this may actually be higher as 37.8% list multiple clinical areas).

	Number of RNs in Medicine/Surgery	Total RN workforce
N.L.	1,115	5,515
P.E.I.	274	1,428
N.S.	1,746	8,790
N.B.	1,459	7,680
Que.	10,846	64,014
Ont.	13,752	90,061
Man.	1,888	10,902
Sask.	1,502	8,480
Alta.	4,720	25,881
B.C.	5,503	28,840
Y.T.	45	324
N.W.T.	86	1,033
Nun.	-	-
Canada	42,936	252,948

Adapted from CIHI, 2006 RN Workforce by Area of Responsibility Data Table D.RN.1 and D.RN.2

*Northwest Territories and Nunavut data are combined for 2006

7.0 Human Resources to Support Phases II and III of the Certification Process (Appendix E)

The Canadian Association of Medical and Surgical Nurses (CAMSUN) has grown rapidly over the last 6 months with membership increasing from 60 to 400 nurses. To date over 80 nurses have indicated they would like to volunteer for the development work for certification. A complete list is available in Appendix E. The CAMSN board believes this list of volunteers is representative of medical-surgical nurses and demonstrates support for designation and certification. This is a current list as of July 15, 2008. Volunteers will continue to be added to the list and the record kept by the secretary of CAMSN.

The CAMSN board and its members have estimated that over 1% of the medical-surgical nurses in Canada, an estimate of 500 will pursue the first offering of a certification exam. The numbers would be expected to increase at each offering.

Glossary

Advocate: “A person who actively supports a right and good cause and who supports others in acting for themselves or speaks on behalf of those who cannot speak for themselves” (CNA, 2008a).

Certification: “... an earned credential that demonstrates the holders specialized knowledge, skills and experience. It is an objective measure of a person’s level of experience and expertise in the profession as defined by the profession as a whole.”(Durely, 2005)

Client: Is used in this document to mean patient, individual, groups or communities

Collaboration: “The interaction of two or more individuals that can encompass a variety of actions such as communication, information sharing, coordination, cooperation, problem solving and negotiation.” (Bitpipe, 2008)

Competence:” The nurse’s ability to use her/his knowledge, skill, judgment, attitudes, values and beliefs to perform in a given role, situation and practice setting.”(CNO, 2002)

Continuing competence: Is the demonstration of assessing, maintaining and continually improving his/her competence.

Continuum of Care: providing integrated service through all stages of client care needs from prevention to palliation to wherever the care may take place from facility to community to home.

Critical Thinking: “A multidimensional skill, a cognitive or mental process or set of procedures. It involves reasoning and purposeful, systematic, reflective, rational, outcome directed thinking based on a body of knowledge, as well as examination and analysis of all available information and ideas.” (Day, Paul, Williams, Smeltzer & Bare, 2007, p.22)

Domains of Practice: The description of nursing functions or roles. Historically described in four domains as nursing practice, nursing education, nursing administration and nursing research. They may be used to describe separate roles/ positions but current theory demonstrates that all of the domains are integrated elements in all nursing practice roles. (CNA, 1998)

Evidence-informed practice: An approach to clinical practice and decisions about client care where there is a conscientious integration of current and relevant formal research, quality initiatives, experiential knowledge and other sources of evidence.

Health care provider: Any member of the healthcare team providing care to medical-surgical clients.

Holistic health care; “ A system of comprehensive or total patient care that considers the physical, emotional, social, economic and spiritual needs of the person; his or her response to illness; and the effect of the illness on the ability to meet self-care needs. Holistic nursing is the modern nursing practice that expresses this philosophy of care.” (Mosby’s, 2006, p.896)

Interprofessional: Health professionals from one or more disciplines

Medical-surgical nurse: In this document the hyphenated medical-surgical nurse is used to represent medical nurses, surgical nurses and nurses working in a combined practice of medical and surgical nursing.

Nursing process: A systematic approach to the delivery of client care. It is goal directed, cyclical and ongoing. The major components/steps include assessing, diagnosing, planning, implementing and evaluating.

Plan of care: Interprofessional identification of client needs including interventions required and expected outcomes. It is the plan created to meet these needs. It is a continuous process that evolves as the client condition changes.

Quality: Is about delivering the best possible medical-surgical care and achieving the best possible outcomes for clients. (Health Canada, 2004)

Scope of practice: “A profession’s scope of practice encompasses the activities its practitioners are educated and authorized to perform...The Actual scope of practice of individual practitioners is influenced by the settings in which they practice, the requirements of the employer and the needs of their patients or clients.” (CNA, 2008b)

Standard: “The desirable and achievable level of performance against which actual practice is compared. (International Council of Nurses, 1997)

References

Academy of Medical-Surgical Nurses. (2007). Scope and standards of medical-surgical nursing practice 4th edition. New Jersey: Anthony J. Jannetti, Inc.

Bitpipe website. Retrieved 03/28/2008, from <http://www.bitpipe.com/tlist/collaboration.html>

Bulechek, G.M., Butcher, H.K., & McCloskey Dochterman, J. (Eds). (2008). Nursing interventions classification 5th edition. St.Louis, MO: Mosby Inc.

Canadian Association of Medical and Surgical Nurses (CAMSNS). (2008). Advancing excellence in medical-surgical nursing: Head, heart, hands of acute care. Pre-conference workshop- June 15, 2008. Facilitated session notes.

Canadian Institute for Health Information. Inpatient Hospitalizations in Canada increase slightly after many years of decline. (2005). Ottawa, Ontario: Author. Retrieved on 04/09/2008, from http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=media_30nov2005_e

Canadian Institute for Health Information, Workforce trends of registered nurses in Canada, 2006. (2007). Ottawa, Ontario: Author.

Canadian Nurses Association. (1998). A national framework for the development of standards for the practice of nursing: A discussion paper for Canadian Registered Nurses. Ottawa, Ontario: Canadian Nurses Association

Canadian Nurses Association. (2002a). Achieving excellence in professional practice: A guide to developing and revising standards. Ottawa, Ontario: Canadian Nurses Association.

Canadian Nurses Association. (2002b). Code of ethics for registered nurses. Ottawa, Ontario: Canadian Nurses Association.

Canadian Nurses Association (2002c) Position statement: Evidence-based decision –making and nursing practice. Retrieved on 03/30/2008, from [www.cna-aiic.ca /CNA/issues/position/research/default_e.aspx](http://www.cna-aiic.ca/CNA/issues/position/research/default_e.aspx)

Canadian Nurses Association (2002d) Position statement: Nursing Leadership. Retrieved on 03/30/2008 from [www.cna-aiic.ca/CNA/](http://www.cna-aiic.ca/CNA/issues/position/leadership) issues/position/leadership

Canadian Nurses Association (2008a). Code of ethics for registered nurses. Ottawa, Ontario: Author.

Canadian Nurses Association (2008b). The practice of nursing. Retrieved 03/27/2007, from <http://www.cna-aiic.ca/nursing> practice/the practice of nursing

Canadian Orthopaedic Nurses Association. (2002) Proposal for designation of orthopaedic nursing as a specialty for certification.

College and Association of Registered Nurses of Alberta. (2005). Nursing practice standards. Edmonton, Alberta: Author.

College and Association of Registered Nurses of Alberta. (2007). Continuing Competence Program. Retrieved on 03/28/2008, from <http://www.nurses.ab.ca/CARNA/index.aspx>

College of Nurses of Ontario. (2002). Practice standard: Professional standards revised 2002. Retrieved 01/ 2008, from <http://www.cno.org/prac/profstandards.html>

College of Registered Nurses of Nova Scotia. (2003). Standards for nursing practice. Halifax, Nova Scotia: Author.

Community Health Nurses Association of Canada. (2003). Proposal for specialty designation for certification of community health nursing.

Day, R.A., Paul, P., Williams, B., Smeltzer, S.C., & Bare, B. (2007). Brunner & Suddarth's Textbook of medical-surgical nursing first Canadian edition. Philadelphia, PA: Lippincott Williams & Wilkins.

Durley, C. (2005). The NOCA guide to understanding credentialing concepts. Washington, DC: National Organization for Competency Assurance.

Grindel, G.C. (2004). Medical/surgical nursing celebration of the specialty. Nursing Spectrum. Retrieved 11/20/ 2007, from <http://www2.nursingspectrum.com/articles/article.cfm?aid=12627>

Health Canada. (2004). Health care system; quality of care. Retrieved 03/28/2008 from <http://www.hc-sc.gc.ca/hcs-sss/qual/index-e.html>

International Council of Nurses. (2003), ICN framework of competencies for the generalist nurse. Geneva, Switzerland: Author.

International Council of Nurses. (1997), ICN on regulation: Towards 21st Century Models. Geneva: Author.

Lawrence. S. Bloombert, Faculty of Nursing, University of Toronto, Undergraduate Courses. Retrieved on 04/11/2008, from <http://www.nursingutoronto.ca/academic/undergrad/undergraduate.htm>

McGill, School of Nursing. BSc(N) Course Descriptions. Retrieved on 04/05/2008, from <http://www.mcgill.ca/nursing/programs/bscn/courses>

McMaster University, School of Nursing, Professional Practice Placements. Retrieved on 04/03/2008, from www.fhs.mcmaster.ca/nursing/educ_clinicalplacements.shtml

Mercer, K, & Hooper, K. (2007) Analysis of CNA contest questions: CAMSN definition identified. Received on 08/16/2007, from Kathleen.mercer@cdha.nshealth.ca

Myers, T. (Ed.). (2006) Mosby's Dictionary of Medicine, Nursing & Health Professions, 7th Edition. Philadelphia, PA: Elsevier.

Ontario Association of Rehabilitation Nurses. (2000). Standards of practice for rehabilitation nurses. Toronto: Author.

Pollick, T. (2001). A view inside medical/surgical nursing. Retrieved on 04/11/2008, from <http://include.nurse.com/apps/pbcs.dll/article?AID=2001103190304>

Profetto-McGrath, J., & Williams, B. (2003). The uniqueness of medical-surgical nursing. Faculty of Nursing, University of Alberta.

Saver, C. (2002) The mosaic of med/surg nursing. Nursing Spectrum- Med/Surg Specialty Edition. Retrieved 04/05/2008, from <http://include.nurse.com/apps/pbcs.dll/article?AID=2002207150389>

Taylor, M.K. (2006) Mapping the literature of medical-surgical nursing. Journal of Medical Library Association 94(2) Retrieved on 11/2007, from <http://www.pubmedcentral.nih.gov/tocrender.fcgi?iid=131065>

University of British Columbia , School of Nursing. BSN course descriptions. Retrieved on 04/05/2008, from http://www.nursing.ubc.ca/Academic_Programs/Undergraduate_Programs/BSN/Course_Descriptions.htm

University of Alberta, Faculty of Nursing. Master of Nursing in Advanced Nursing Practice. Retrieved on 04/05/2008, from <http://www.nursing.ualberta.ca>

University of Michigan, School of Nursing. Master's Medical-Surgical Nursing Program. Retrieved on 04/5/2008, from <http://www.nursing.umich.edu/academics/masters/medical-surgical.html>

University of Ottawa, School of Nursing. Masters of Science in Nursing.
Retrieved 07/15/2008 from
http://www.health.uottawa.ca/sn/gp/description/msn_goal.htm

Volpato, M.P. (2003) Nursing diagnosis in medical-surgical patients. *International Journal of Nursing Terminologies and Classifications*. 14(4), Oct-Dec 2003, 57.
Retrieved on 06/30/2008 from
http://findarticles.com/p/articles/mi_qa4065/is_200310/ai_n9318744?tag=artBody;col1