Pharmacare

First Drafted (2015):
IPHSA Health Policy Committee Members
James Marcus
Melanie Bechard
Elaina Sung
Amalia Cong
Julie Caron
Adity Roy
Yina Xu
Amanda Sissons

*Approved: 2015****

Interprofessional Healthcare Students' Association

Background

Experts from many areas of Canadian healthcare agree that pharmaceutical policy in Canada is failing to support our health. (1) Even with a universal health care system, Canada is the only developed country that does not provide universal coverage for prescription medications (2). Instead, the Canadian model places the burden of cost for prescription drugs squarely on the shoulder of Canadian Citizens and relies on limited provincial subsidies, out of pocket payments and private insurance. (3) Our public sector covers some of the medication costs for seniors over 65 years of age, low-income populations, aboriginals, military veterans, recent immigrants, and individuals with large medical costs relative to income; still an estimated 10% of Canadians cannot afford the medication(s) prescribed by their doctors. Indeed, Canadians without insurance are four times more likely to skip their prescriptions. (4) Within the public sector, individual provinces create their own formularies, leaving large variations in the amount of coverage, and the medications covered from province to province, further contributing to the problem of healthcare access. (5) Additionally, Canadians with drug coverage face financial burdens through heavy use of deductibles and co-pays. (3) Based on 2014 projections, Canadian drug expenditures make up $33.9 billion or 16% of total healthcare spending, which is the highest per capita spending compared to other developed countries with universal healthcare. (3)

The financial burden placed on Canadians limits access to proper care and places additional costs onto the system. Due to the multi-payer system, there exists an administrative burden with limited incentives for accountable healthcare expenditure management. Some estimates project a $10.7 billion annual waste due to this system. (5) Furthermore, without a unified drug coverage system, provinces negotiate independently with pharmaceutical companies for drug prices, decreasing Canadian negotiating power and contributing to the higher medication costs. (5)

History of Pharmacare/Prior Efforts

The realization that there is a major problem with having prescription drug coverage outside of our medicare envelope is not a recent occurrence. Originally, a national drug program was recommended by the Royal Commission on Health Services in 1964 and once again by the National Forum on Health in 1997. (6) This program was neglected until 2004, when the National Pharmaceuticals Strategy (NPS), part of the federal, provincial and territorial Health Accord, was created to address the problems related to drug access, affordability, safety and quality. (7) The NPS introduced action items including developing catastrophic drug coverage, establishing a national drug formulary, obtaining purchasing strategies for best drug prices and accelerating access to generic drugs with a Canada-wide pharmaceutical purchasing and pricing system (7).

Unfortunately, limited progress has been made on these action items and most of the activity has occurred at the provincial or territorial level, leaving decision making decentralized and fragmented. (1). For instance, in 2007 confidential agreements (known as Product Listing Agreements or PLAs) were increased, allowing provincial public plans to contain drug costs when negotiating with pharmaceutical companies. The problem is these agreements are non-transparent to the public resulting in inflated costs for patients and private plans and leaving provinces with less negotiating power. (1).

In order to streamline negotiations, the The Council of the Federation created a Pan-Canadian Pricing Alliance in Canada (PCPA) in 2010. However, they are still negotiating the prices of generic drugs as a percentage of patented drugs rather than getting the absolute lowest price with competitive bidding (1).This bargaining power has benefited those with public plans, while those with private plans or the uninsured must pay for medication at the official price (1).

How Pharmacare would Improve Our Healthcare System

As Canadians, we value the ability to have access to medically necessary services free of cost. Our Canada Health Act sets out to facilitate reasonable access to health services without financial or other barriers. (8) However, we still have not found an effective way to finance prescription drugs. Right now, our financing system is costly, inequitable and inefficient because it diminishes pharmaceutical purchasing power, charges patients at a price they can't afford and isolates prescription drug management from other areas of our healthcare system. (2)

Implementing pharmacare with a strong policy that addresses these financing issues will improve our healthcare system by providing Canadians with 1) access to necessary medicines, thus improving health outcomes and reducing costs elsewhere in the healthcare system, 2) financial protection and equity by covering the costs of sudden illness and/or chronic disease and 3) an efficient system that has reasonable administration costs, an ability to competitively bid in the global market and a balance between pharmaceutical spending and other health care spending. (2)

One of the major barriers in pharmacare implementation is the belief that it will cost the government too much money and raise taxes. However, according to a recent study that sought to estimate the cost of implementing universal drug coverage in Canada, the author's found that it would reduce total spending on prescription drugs by $7.3 billion with little increase in government costs. (9)

Recommendations

Adapted from Gagnon (2014)

IPHSA recommends the following:

1. **Include prescription drugs in the public healthcare system, providing universal access to Canadians.**

In order to reduce costs on the public system: fixed co-payments (slowly eliminated), social insurance pay deductions, risk pooling and removing tax subsidies for private insurance should be implemented. (1)

2. Establishing a national formulary of safe, efficacious and cost effective medications to increase access

Presently, each province regulates which medications are covered or not based on the province's health budget and their ability to negotiate with pharmaceutical companies. By establishing a national formulary, a comprehensive drug usage database could be created and coverage would be offered at a national level without interprovincial discrepancies. (1)

3. Purchasing patented and generic prescription drugs in bulk

Noted as one of the best strategies to decrease drug costs, bulk purchasing reduces generic drug prices and also enables the purchase of brand name drugs at a cost that reflects the added therapeutic value of the product. (1)

4. Ensuring that universal drug coverage will be safe and efficacious

The creation of the Drug Safety and Effectiveness Network is insufficient unless analysis of drug data can be easily assessed. A national formulary will help in the formation of a complete drug database and allow drug use to be analyzed. (1)

Future Considerations

Will Pharmacare increase health inequities?

Healthcare in Canada, in reality, is far from universal. First Nations, Inuit and Metis, refugees, the homeless and other vulnerable, marginalized or geographically isolated populations in Canada experience healthcare in ways that highlight systemic inequities. The introduction of Pharmacare may unintentionally increase the equity gap between these populations and mainstream Canadians, depending on the details of the Pharmacare plan, as Pharmacare would

improve access to essential medications for mainstream Canadians but perhaps, as seen with the 'universal' healthcare system leave those on the outskirts behind. For example, if patients are in isolated geographic areas and currently lack access to a regular pharmacy, Pharmacare may not increase access to medications for these vulnerable individuals.

Another aspect to consider is that physicians providing care for marginalized populations frequently collect medication samples from pharmaceutical representatives to provide access to medications for their patients who otherwise would have no access. With the introduction of Pharmacare and a national drug formulary, the relationship between physicians and pharmaceutical representatives might change such that pharmaceutical representatives are no longer providing physicians with samples. This could have negative impacts on the health of those most marginalized. We recognize that reliance on free sample medication is not necessarily a sustainable long-term solution for providing medications to those in need. However, for some vulnerable individuals, these samples may represent their only option for access to necessary medications. For example, individuals whose refugee claim was suspended or rejected, or those who are ineligible for referral to the IRB, are only provided with health services necessary to "prevent, diagnose, or treat a disease posing a risk to public health or to diagnose or treat a condition of public safety concern". (10) If these patients have limited financial resources, samples of necessary blood pressure or diabetes medications may be their only option for avoiding the devastating long-term complications of these illnesses.

How will Pharmacare impact physician-industry relations?

It is highly likely that the introduction of Pharmacare would restructure and redefine relationships between physicians and the pharmaceutical industry. The pharmaceutical industry would potentially focus it's lobbying on higher level decision makers versus frontline physicians - who would be largely prescribing based on a national formulary. This could have positive impacts in terms of prescribing practices not being intentionally or unintentionally influenced by sales representatives. For example, a substantial number of medical students (13%-69%) believe that gifts from pharmaceutical industry influence prescribing. (11) Furthermore, changes in this relationship would have impacts on the medical school curriculum as the topic of 'industry relationships' was covered to some degree of depth in seminars about medical ethics; this would likely no longer be required at all or need to be updated based on the altered relationship.

Will Pharmacare decrease number and length of hospital admissions?

The implementation of Pharmacare could potentially decrease length of hospital admissions for patients requiring life and limb-saving medications they can not afford as an outpatient due to lack of prescription drug coverage. As a medical student, I have witnessed attending physicians refraining to discharge their impoverished patients lacking drug coverage in order to finish their required course of antibiotics and recover fully. If these patients were

eligible for drug coverage under Pharmacare, they could have been treated with PO antibiotics in their communities at a reduced cost to the system and reduced risk of contracting nosocomial infections - both the patient and the system would benefit from Pharmacare.

It is generally accepted that preventative health measures will reduce overall healthcare costs. (12) Pharmacare can be considered a preventative measure in that if patients had access to the necessary medications to properly manage chronic health conditions, many of the sequelae associated with unmanaged disease could be avoided, delayed or decreased in severity. For example, access to hydroxyurea for patients with Sickle Cell Disease would likely reduce the number of presentations to emergency departments and hospital admissions. I have personally been involved in the care of a patient with SCD in whom hydroxyurea was indicated but due to my client's financial situation and lack of Pharmacare; he was unable to access and benefit from the medication. The result, decreased quality of life for the patient and increased visits to the emergency department in crisis, which I'd argue are more expensive than the cost of providing the medication via Pharmacare. Furthermore, regardless of decreasing system costs, there is the fact that healthcare, of which prescription medications are currently an enormous component, is a human right.

Preventing Over-medication through Medical Education

It will be important to ensure that the implementation of universal Pharmacare is coupled with a continued focus on rational prescribing and medication use. Theoretically, improved access to necessary medications may make patients and prescribers more likely to rely on pharmacologic treatments with reduced emphasis on lifestyle or alternative management options. This theoretical link between public drug plans and medication overuse does not seem to occur in the international context. For example, despite heavy reliance on private insurance, the United States is among the highest consumers of medication in the world. (13) Regardless, renewed efforts towards rational prescribing in the context of Canadian Pharmacare has face validity for quelling costs and maintaining patient safety.

Avoiding over-medication is particularly important in the context of antimicrobial resistance. Physicians have reported they are unable to treat as many as 15% of patients due to antimicrobial resistance. (14) As many as 1 in 12 patients in Canadian hospitals are infected with drug-resistant organisms. (15) Antimicrobial stewardship programs in paediatric hospitals have been shown to decrease antimicrobial use, antimicrobial drug costs, and prescribing errors. (16) Despite the evidence for training health care professionals to be rational and conservative in their antimicrobial use, not all of Canada's medical schools receive direct antimicrobial stewardship training. (17)

It is concerning to note that physicians tend to quite be unaware of medication costs. A systematic review noted that only 31% of physicians' and trainees' estimates of medication

costs were within 25% of the true cost. (18) Arguably, there is a need to include increased information on medication costs within the medical curricula.

Should Pharmacare be implemented in Canada, medical education would need to adapt to this significant change within the health care system. An increased focus on the cost-effectiveness of medications can prepare medical students for this new environment. Fortunately, there are current initiatives with a similar focus that may be able to enhance evidence-based, cost-effective prescribing among health care providers. The University of Toronto is a significant partner in the Choosing Wisely Canada campaign, an initiative to "help physicians and patients engage in conversations about unnecessary tests, treatments and procedures, and to help physicians and patients make smart and effective choices to ensure high-quality care". (19) Expanding initiatives such as Choosing Wisely to provide more information on antimicrobial stewardship and medication costs in the undergraduate medical curricula can help prepare medical trainees to function as safe, efficacious, and cost-effective prescribers in a Pharmacare system.

Physician Competencies

Arguably, physicians have a responsibility to advocate for the implementation of Pharmacare within Canada. We have discussed the potential financial and health benefits of Pharmacare in preceding sections of this document. According to Series IV of CanMEDS 2015, which outlines professional roles for physicians, the profession must serve as Leaders. This role states that physicians should, "2. Engage in the stewardship of health care resources: 2.1 Allocate health care resources for optimal patient care, 2.2 Apply evidence and management processes to achieve cost-appropriate care". Serving as Leaders also requires that physicians "3. Demonstrate leadership in professional practice: 3.1 Demonstrate leadership skills to enhance health care, 3.2 Facilitate change in health care to enhance services and outcomes". Furthermore, the Health Advocate role stipulates that physicians should, "2. Respond to the needs of the communities or populations they serve by advocating with them for system-level change in a socially accountable manner". (20)

Changes to the Nursing Curriculum

The nursing CNO standards of practice promotes safe, effective and ethical medication practice. Included in this, is the standard to advocate for setting-specific, accessible and current medication information, such as drug formularies. (21)

Currently, the medication aspect of the nursing curriculum focuses on learning how to safely administer medication and recognize adverse effects, with little of the advocacy standard mentioned above. (22) With a higher number of Canadians having chronic medical conditions, the additional teaching of learning drug therapeutic benefits and cost-effectivness should be

added to nursing education. Since many physicians are unaware of the actual cost of medications (18), nurses should take on the extra role of advocating for drugs that are part of the national formulary and included in the Drug Safety and Effectivness Network. As the last member of the healthcare team to review medications before they are administered, nurses are in an excellent position to not only teach patients about cheaper more effective medication, but communicate with the health care team that a more appropriate medication should be used.

I've seen this type of advocacy in practice where some of the patients could not afford their antipsychotic medications to manage their bipolar disorder. The importance of remaining on their medication to control their symptoms was such a critical aspect of their coping and management of their illness that missing a dose could have lasting repercussions on their health. The nurse directed these patients to the Trillium drug program, however, some of these programs have certain restrictions and take time to be approved for. Having a national formulary that can be referred to for safe, effective and accessible medications would be extremely beneficial in this case.

Also since medications will be made available to more vulnerable and marginalized populations, the nurse will continue to focus on their patient education role by teaching these clients about their medication, proper dose and potential side effects, including the potential of overuse (pain meds, benzos, etc…).

Implications Future Community Pharmacies

Upon implementation, Pharmacare would expand coverage to all medically necessary medications, causing pharmacies to see an increase in the number of specialized drugs for rare diseases. The coverage may also stimulate research & development in certain classes of orphan drugs, which would make it necessary for the pharmacy profession to gain further education in order to properly manage these medications. With increased use of rare medications, pharmacists roles may shift from a dispensing role to more of a clinical role.

The changes that Pharmacare brings may have a negative impact on the revenue stream for pharmacies, and make it difficult for independent pharmacies, which rely on dispensing as the primary revenue source, to stay in business. (23). With the implementation of a national formulary and with the strong negotiating and purchasing power of a one buyer system, generic rebates will be drastically cut and possibly completely removed. (23). Additionally, many of the cost saving estimates from Pharmacare studies cite reducing dispensing fees as a potential area for savings. The implication of this proposal is that you're cutting costs from both the dispensing fees, drug mark up prices, and generic rebates, which would make the retail pharmacy industry unprofitable and unsustainable. In order to keep community pharmacists profitable, it is

important that there is a balance between removing all rebates, dispensing fees and continuing to have some costs (e.g. small dispensing fee) in order for community pharmacies to be sustainable.

Implications for the Dental Curriculum

Medications are prescribed by dentists to fight specific oral diseases, to prevent or treat infections, or to control pain and relieve anxiety. Pharmacare's coverage of drugs may result in greater patient prediction toward their use, making it increasingly important for dental education to emphasize the basic science concepts behind all oral diseases and conditions. This would serve to ensure impeccable diagnostic accuracy and selection of the appropriate management route when medication is one option or adjunct.

For example, many drugs mask the symptoms of a condition without addressing the root cause. Anaesthetics used for toothache pain should be prescribed for temporary pain relief until the toothache can be treated. Denture wearers using anaesthetics to relieve pain from a new denture should see their dentist to determine if an adjustment to the appliance is needed to prevent more soreness.

Dentists must have a solid understanding of the role medication plays and the associated side effects in an overarching treatment plan. Muscle Relaxants may be prescribed to help stop tooth grinding and to treat temporomandibular joint (TMJ) disorders, but they are an adjunct to the use of night guards, correcting underlying occlusion problems, and physical or stress reduction therapy. Likewise, corticosteroids - anti-inflammatory drugs used to relieve the discomfort and redness of mouth and gum problems - and chlorhexidine - an antibiotic used to control plaque and gingivitis - should be used in conjunction with periodontal treatment such as scaling, root planing, and surgery where necessary. Furthermore, chlorhexidine may increase the staining of tartar and plaque, making it even more crucial for dentists to emphasize appropriate hygiene routines, diet counselling, and regular dental cleanings and checkups.

In advocating for patients who cannot afford medication, dentists can play a critical role in educating the government about the importance of medication in preventing oral conditions from affecting systemic health. To illustrate, pulpal microbes are sources of fascial space infections such as the life-threatening Ludwig's angina; deep cleanings and tooth extractions without antimicrobial prophylaxis cause infectious endocarditis in susceptible patients; and periodontal diseases not treated with antibiotics lead to compromised glycemic control in people with diabetes. Specifically in Ontario, dentists can lobby through the Ontario Dental Association to advocate for more sufficient funding and coverage of prescription drugs listed in the Ontario Drug Formulary by health benefit programs such as ODSP and CINOT. This important role played by dentists can be instilled in dental students by expanding curriculum both in basic sciences of disease and pharmacology and in dental public health.

Occupational Therapy and Pharmacare

Accessible and affordable medications might potentially enhance the use of pharmacologic agents, and reduce the utilization of nonpharmacologic modalities offered by the allied health professions including occupational therapists, physiotherapists, and speech-language pathologists. some of the nonpharmacologic treatments include patient education, exercise, electrotherapy, thermotherapy, foot orthoses, proper footwear, braces, splints, ambulatory aids and assistive devices. (24) Research shows that the use of non-pharmacologic treatments vary between physicians possibly due to the differences in their perception of the effectiveness of nonpharmacologic modalities. (24) Accessibility of treatments offered by the allied health profession in different geographic locations might also play a role on the utilization of non-pharmacologic modalities by physicians. Affordable medications will be beneficial to those living in remote areas, where services offered by the allied health professions might not be as available. However, in the areas where these services are readily available, affordable medications might lead to under-utilization of nonpharmacologic treatments, and patients might be deprived of some of the evidence-based cares offered by the allied health professions. There is growing evidence of nonpharmacologic interventions having long term improvements in clients compared to that of pharmacologic interventions. For example, a randomized controlled study comparing the effects of a multimodal nonpharmacologic intervention to digoxin for patients with congestive heart failure has found that the nonpharmacologic therapy leads to improvements in functional capacity, body weight and mood state (25).

Nonpharmacologic interventions offered by occupational therapists can treat people with diverse needs such as depression, stroke rehabilitation, and pain management with minimal dependence on medications. According to the Essential Competencies of practice for Occupational Therapists in Ontario, occupational therapists are responsible for: taking necessary action to ensure client safety, and showing awareness of health systems, errors, and safety concepts. (26) Therefore, occupational therapists of Ontario are obligated to to be well-aware of the potential impacts of pharmacare on patients, and take necessary actions to ensure patient safety and best practice.

Future Interprofessional Education

The University of Toronto is one of the leaders of Interprofessional Education for health students in Canada. For example, our interfaculty pain curriculum has obtained overall ratings of ‘exceeding or meeting expectations’ ranging from 74 to 92%. (27) However, we currently do not have an education platform that teaches health students how to improve drug-therapy decisions and cost-effectiveness in an interprofessional manner. Education of this type has been used within the clinical setting with practicing physicians and pharmacists (28), but remains absent within the interprofessional health curriculum. IPHSA recommends an IPE elective and learning

activity that focuses on how teams can make decisions on prescribing safe, optimal and cost-effective medication and how a policy such as pharmacare will make this easier for health professionals.

References

1. Gagnon MA. A roadmap to a rational pharmacare policy in Canada. Canadian Federation of Nurses Unions. 2014. Available from: https://nursesunions.ca/sites/default/files/pharmacare_report.pdf

2. Morgan SG, Daw JR, Law MR. *Rethinking Pharmacare in Canada*. C.D. Howe Institute. [Online] Commentary No.: 384, 2013. http://www.cdhowe.org/pdf/Commentary_384.pdf

3. National Health Expenditure Trends, 1975 to 2014. (2014, October 1). Retrieved April 12, 2015, from http://www.cihi.ca/web/resource/en/nhex_2014_report_en.pdf

4. Law MR, Cheng L, Dhalla IA, Heard D, Morgan SG. The effect of cost on adherence to prescription medications in Canada. *Canadian Medical Association Journal*. [Online] 2012;184(3):297-302. http://www.cmaj.ca/content/184/3/297

5. Gagnon M, Guillaume H. *The Economic Case for Universal Pharmacare: Costs and Benefits of Publicly Funded Drug Coverage for all Canadians*. Canadian Centre for Policy Alternatives. [Online] 2010. http://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2010/09/Universal_Pharmacare.pdf

6. Lexchin, J. A National Pharmacare Plan: Combining Efficiency and Equity [Internet]. 2001 March [cited 2015 Apr 5] Available from: http://www.policyalternatives.ca/sites/default/files/uploads/publications/National_Office_Pubs/pharmacare.pdf

7. Mackinnon, N.J. The National Pharmeceuticals Strategy: Rest in Peace, Revive or Renew? [Internet]. 2009 Feb [cited 2015 Apr 5];180(8):801-3. Available from: http://www.cmaj.ca/content/180/8/801.full.pdf+html

8. Canada Health Act. Health Canada. [Online] 2010. http://www.hc-sc.gc.ca/hcs-sss/medi-assur/cha-lcs/index-eng.php [Accessed 21st April 2015].

9. Morgan SG, Law M, Daw JR, Abraham L, Martin D. Estimated cost of universal public coverage of prescription drugs in Canada. 2015 March [cited 2015 Apr 7] Available from: http://www.cmaj.ca/content/early/2015/03/16/cmaj.141564.full.pdf+html

10. Government of Canada (2014) Determine your eligibility and coverage type - Interim Federal Health Program. http://www.cic.gc.ca/english/refugees/outside/arriving-healthcare/individuals/apply-who.asp

11. Austad KE, Avorn J, Kesselheim AS (2011) Medical Students' Exposure to and Attitudes about the Pharmaceutical Industry: A Systematic Review. PLoS Med 8(5): e1001037. doi:10.1371/journal.pmed.1001037

12. Friedman, B., & Basu, J. (2004). The Rate And Cost Of Hospital Readmissions For Preventable Conditions. *Medical Care Research and Review*, 225-240. Retrieved April 16, 2015, from http://mcr.sagepub.com/content/61/2/225.short

13. OECD. Pharmaceutical Pricing Policies in a Global Market. Paris: OECD, 2008. http://www.oecd.org/health/health-systems/41303903.pdf

14. Tegos G, Mylonakis A. Antimicrobrial Drug Discovery: Emerging Strategies 1ed: Cabi; 2012

15. Simor AE, Williams V, McGreer A, Raboud J, Larios O, Weiss K, Hirji Z, Laing F, Moore C, Gravel D, Community and Hospital Infection Control Association Canada (2013) Prevalence of colonization and infection with methicillin-resistant Staphylococcus aureus and vancomycin-resistant Enterococcus and of Clostridium difficile infection in Canadian hospitals. Infect Control Hosp Epidemiol 34(7):687-693.

16. Patel SJ, Larson EL, Kubin CJ, Saiman L (2007) A review of antimicrobial control strategies in hospitalized and ambulatory pediatric populations. Pediatr Infect Dis J 26(6):531-537.

17. Damji AN, Lee JA, Zannella VE (2015) Antimicrobial resistance and stewardship. Canadian Federation of Medical Students Policy Document.
Choosing Wisely Canada. About Us. http://www.choosingwiselycanada.org/about/what-is-cwc/

18. Allan GM, Lexchin J, Wiebe N (2007) Physician awareness of drug cost: a systematic review. PLoS Med 4(9):e283.

19. Choosing Wisely Canada. (n.d.). Retrieved April 13, 2015, from http://www.choosingwiselycanada.org

20. Frank JR, Snell L, Sherbino J (2015) The Draft CanMEDS 2015: Physician Competency Framework. http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/framework/canmeds2015_framework_series_IV_e.pdf

21. College of Nurses of Ontario. (2014). *Medication* . Toronto: Author. http://www.cno.org/Global/docs/prac/41007_Medication.pdf

22. Adhikari, R., Tocher, J., Smith, P., Corcoran, J., MacArthur, J. A multi-disciplinary approach to medication safety and the implication for nursing education and practice. 2013 January [cited 2015 Apr 7] Available from: http://www.nurseeducationtoday.com/article/S0260-6917%2813%2900384-5/abstract

23. Singh, M. (2015, January 1). Martin Singh cares about health care. Retrieved April 6, 2015, from http://www.martinsingh.ca/cares/about-health-care/

24. Li, L. C., Maetzel, A., Pencharz, J. N., Maguire, L., & Bombardier, C. (2004). Use of mainstream nonpharmacologic treatment by patients with arthritis.Arthritis Care & Research, 51(2), 203-209.

25. Kostis, J. B., Rosen, R. C., Cosgrove, N. M., Shindler, D. M., & Wilson, A. C. (1994). Nonpharmacologic therapy improves functional and emotional status in congestive heart failure. *CHEST Journal*, *106*(4), 996-1001.

26. Essential competencies of practice for occupational therapists in Canada (3rd ed.). (2011). Edmonton: Alberta Association of Registered Occupational Therapists/AAROT

27. Watt-Watson, J., Hunter, J., Pennefather, P., Librach, L., Raman-Wilms, L., Schreiber, M., Lax, L., Stinson, J., Dao, T., Gordon, T., Gordon, A., Mock, D and Salter, M. An Integrated Undergraduate Pain Curriculum, Based on IASP Curricula, for Six Health Science Faculties. 2004 March [cited 2015 Apr 7] Available from http://www.sciencedirect.com/science/article/pii/S0304395904001435

28. Avorn J & Soumerai SB. (1983) Improving drug-therapy decisions through educational outreach. A randomized controlled trial of academically based “detailing”. *The New England Journal of Medicine.* 308 (24): 1457-1463.