

# SOLID WASTE MANAGEMENT IN VANCOUVER'S HOSPITALS

Oxford Global Challenge – Simon Fraser University

Iman Baharmand | Kimberley Venn | Alec Yu

## The Problem Landscape

Blackwell, T. (2015) “Showing surgeons ‘massive’ cost of disposable supplies leads to big savings for hospitals.” The National Post. Accessed Jan 11, 2017.

Canada’s GHG emissions by sector, end-use and sub-sector — including electricity-related emissions. (2008) Ottawa (ON): Natural Resources Canada, Office of Energy Efficiency.

Donaldson, K. (2000) Save the planet: recycling in the OR. Infection Control Today 2000. Accessed Jan 11, 2017.

Glauser, W., Petch J., and Pendharkar S. (2016) “Are disposable hospital supplies trashing the environment?” Healthy Debate. Accessed Jan 11, 2017.

Laustsen, G. (2011) Greening the OR: guidance documents. Reston (VA): Practice Greenhealth.

Reduce--recycle--reuse: guidelines for promoting perioperative waste management. AORN J. 2007 Apr; 85(4).

LégisQuébec, Publications Québec, accessed 11 Jan 2017, <<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2012>>.

Melamed A. (2003). Environmental accountability in perioperative settings. AORN Journal, Jun 77:1157–68.

Regulated medical waste reduction: 10 steps to implementing a regulated waste reduction plan. (2010) Washington (DC): Hospitals for a Healthy Environment.

Report from the Canadian Council of Ministers of the Environment on Incineration; [online]

CBC News. “Hospitals aim to resterilize, cut waste.” The Canadian Broadcasting Corporation. Accessed Jan 11, 2017.

Reusable totes, blue wrap recycling and composting. (2002) Washington (DC): US Environmental Protection Agency.

Walkinshaw, E. (2011). Medical waste-management practices vary across Canada. CMAJ: Canadian Medical Association Journal, 183(18), E1307–E1308.

## The Solutions Landscape

Almuneef, M. and Memish, Z.A. (2003) Effective medical waste management: it can be done. American Journal of Infection Control. May; 31(3):188-92.

An Alternative Guide to The New NHS In England, The King's Fund, accessed 9 March 2017, <<https://www.kingsfund.org.uk/projects/nhs-65/alternative-guide-new-nhs-england>>.

Canadian Antimicrobial Resistance Surveillance System Report 2016, Health Canada, accessed 4 Feb 2017, <<https://www.canada.ca/en/public-health/services/publications/drugs-health-products/canadian-antimicrobial-resistance-surveillance-system-report-2016.html>>.

Canadian Coalition for Green Healthcare, Green Healthcare, accessed 4 Feb 2017, <<http://greenhealthcare.ca/>>.

Disaster Relief, InterVol, accessed 9 March 2017, <<https://www.intervol.org/disaster-relief>>.

Frequently Asked Questions, Healthier Hospitals Initiative, accessed 9 March 2017, <<http://healthierhospitals.org/about-hh/frequently-asked-questions#validation>>.

Help For Haiti, Medshare, accessed 9 March 2017, <<http://www.medshare.org/all-photos/medshare-honors-anadarko-petroleum-for-humanitarian-aid>>.

History And Victories, Health Care Without Harm, accessed 9 March 2017, <<https://noharm-uscanada.org/content/us-canada/history-and-victories>>.

Hill, L. (2010) The three legged stool of regulated medical waste reduction. Reston (VA): Practice Greenhealth.

Home, Greenhealth Exchange, accessed 9 March 2017, <<http://www.greenhealthexchange.com>>.

Home, International HOPE Canada, accessed 4 Feb 2017, <<http://www.internationalhope.ca/>>.

Home, Practice Greenhealth, accessed 9 March 2017, <<https://practicegreenhealth.org>>.

Intervol. InterVol, accessed 9 March 2017, <<https://www.intervol.org/>>.

Karlsson, M. & Ohman, D. P. (2005). Material consumption in the healthcare sector: Strategies to reduce its impact on climate change – The case of Region Scania in South Sweden. *Journal of Cleaner Production*, 13: 1071-1081.

Medshare. MedShare, accessed 9 March 2017, <<http://www.medshare.org>>.

Morrow, J., Hunt, S., Rogan, V., Cowie, K., Kopacz, J., Keeler, C., Billick, M.B., and Kroh, M. (2013) Reducing waste in the critical care setting. *Nursing Leadership*. May; 26:17-26.

Park K.W. and Dickerson C. (2009). Can efficient supply management in the operating room save millions? *Current Opinion in Anaesthesiology*. Apr; 22(2):242-8.

Shaner, H. & McRae, G. (2002). *Eleven Recommendations for Improving Health Care Waste Management*. CGH Environment Strategies, Inc. USA.

Tieszen M.E. and Gruenberg J.C. (1992) A Quantitative, Qualitative, and Critical Assessment of Surgical Waste: Surgeons Venture Through the Trash Can. *JAMA*. 267(20):2765-2768.

Tudor, T. L., Woolridge, A. C., Bates, M. P., & Phillips, P. S. (2008). Utilizing a 'systems' approach to improve the management of waste from healthcare facilities: best practice case studies from England and Wales. *Waste Management and Research*, 26: 233-240.

Ueckerman, J. (2011). *Green initiatives in hospitals in Ontario: Is there a business case?* MA Thesis. Stellenbosch University Library and Information Services.

## **Gaps and Levers of Change**

Almuneef, M. and Memish, Z.A. (2003) Effective medical waste management: it can be done. *American Journal of Infection Control*. May; 31(3):188-92.

Canada's Foreign Aid, Canadian International Development Platform, accessed 4 Feb 2017, <<http://cidpnsi.ca/canadas-foreign-aid-2012-2/>>.

Kagoma, Y., Stall, N., Rubinstein, E., and Naudie, D. (2012). People, planet and profits: the case for greening operating rooms. *CMAJ: Canadian Medical Association Journal*, 184(17), 1905–1911.

Larisch, L., Amer-Wahlin, I., & Hedefjall, P. (2016). Understanding healthcare innovation systems: the Stockholm region case. *Journal of Health Organization and Management*, 30(8): 1221-1241.

Nichols, A., Grose, J., Bennallick, M., & Richardson, J. (2012). Sustainable healthcare waste management: a qualitative investigation of its feasibility within a count in the south west of England. *Journal of Infection Prevention*, 14(2): 60-64.

Saver, C. (2011). Going green in the OR brings financial, environmental gains. *OR Manager*. Jun; 27(6):1-13.

## **Primary Interviews\***

Abdalvand, Ali. Emergency Room Physician at Royal Columbian Hospital. Interviewed by Yu, A. 22 March 2017.

Brightly, Stacey. Medical Aide at Royal Columbian Hospital. Interviewed by Yu, A. 17 December 2017.

Dempsey, Olive. Engagement Strategist and Program Leader at Lower Mainland Health Organizations Sustainability Team. Interviewed by Yu, A. 12 January 2017.

Janousek, Sonja. Sustainability Coordinator of Fraser Health. Interviewed by Yu, A. 2 February 2017.

Kagoma, Yoan. Medical Resident at McMaster University, Co-Founder of Operation Green, and First Author of the article “People, Planet, Profits: the case for greening operating rooms” published in 2012 in the *Canadian Medical Association Journal*. Interviewed by Yu, A. 22 January 2017.

Linder, Connie. Founder and President of GreenPages Directory. Interviewed by Yu, A. 23 March 2017.

Malherbe, Stephan. Paediatric Anesthesiologist at BC Children’s Hospital. Interviewed by Yu, A. 30 January 2017.

Martin, Meghan. Community Health Specialist at Fraser Health. Interviewed by Baharmand, I. 27 January 2017.

Olekshy, Kathleen. Charge Nurse at Royal Columbian Hospital. Interviewed by Yu, A. 17 December 2017.

Wade, Jonathan. President of Social Delta Enterprise Consulting. Interviewed by Yu, A. 14 December 2016.

Zurba, Jason. Respiratory Therapist at Royal Columbian Hospital. Interviewed by Yu, A. 7 April 2017.

We reached out to and visited a physical location of Stericycle, a medical waste management company, but they declined to provide comment.

We also spoke to additional physicians and nurses that would prefer to remain anonymous.