



# Private Imaging for Brain Disorders

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## Introduction

The commercialization of health care technology is an increasing trend and the number of private imaging facilities for the brain is no exception. In this study we:

- > examined the availability of privatized imaging in Canada for screening and diagnosing central nervous system (CNS) disorders as advertised on the Internet,
- > analyzed ethics challenges associated with private imaging trends and use of the Internet, and
- > contrasted access between the USA and Canada.

## Methods

We used Google and Yahoo search engines to locate the websites of private imaging companies in Canada and identify:

- > number of companies
- > number and types of scanners
- > range of neuroradiological services and costs
- > referral procedures
- > wait time for appointments
- > scan interpretation and results turnover time
- > reporting format

Follow up phone calls completed information not available on websites

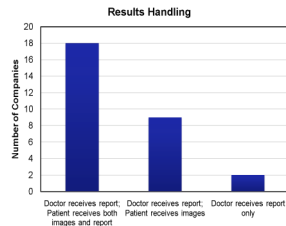
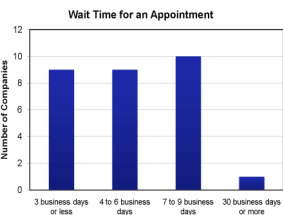
## Results

We identified 31 companies in Canada and were able to obtain complete information for 29.

N= 29 companies represented 51 scanners (34 MRI, 13 CT and 4 PET or PET/CT scanners)

- > 97% (n=28) of companies require a referral for all services provided
- > 100% of companies return results to a physician
- > 90% (n=26) provide neuro services

Service	Cost estimate (CAD)
Neuro MRI	\$595-\$1975
Neuro CT	\$225-\$1995
Neuro PET/CT	\$2500
Neuro PET	\$2358



## Ethics Considerations

We identified four major challenges with regards to privatized imaging in Canada:

- 1) Queue Jumping:** Patients who have the means and are willing to pay for private imaging services can bypass others waiting in line for diagnostic services who cannot afford to exercise this type of autonomy. Consumers with positive diagnostic findings return quickly to the public system and therefore receive both their diagnosis and treatment before those who rely solely on the public health system.
- 2) Financial Incentives for Physicians:** Physicians can benefit financially when referring patients to clinics that offer financial kick-backs, or when the physician is a stakeholder in the clinic.
- 3) Quality Control:** While some provinces in Canada have accreditation programs, others do not. Quality is harder to control in the private sector and conflicts of interest exist between accreditation programs and the bodies that sanction them.
- 4) Internet Reliability:** Despite the Internet's growing popularity and use by the public for healthcare information (Burst Media, 2007; Statistics Canada, 2006; Ybarra and Suman, 2006; Hesse *et al.*, 2005), it is not a complete resource. The 51 scanners in Canada identified by Internet search represent less than 70% of all scanners available in the private sector (Canadian Institute for Health Information, 2008).

### Comparison of imaging facilities: USA and Canada

	USA*	Canada
Referral required by company for all services	0%	97%
Report returned to a physician	2%	100%
Provincial/state distribution	Majority located on two coasts	Majority located in western and central Canada
Interpretation	Empowerment, reassurance of good health, "spa medicine"	Queue jumping

\*From Illes *et al.*, 2003; Kalish *et al.*, 2004; Racine and Illes, 2008. Direct comparability is limited by date that data were acquired and differences in referral requirements.

## Conclusions

This study provides the current landscape of privatized imaging in Canada that uses the Internet as a primary source of information.

- > Despite the availability of scans at no cost through the health care system in Canada, there are patients in need of diagnostic scans who are willing to incur out of pocket expenses to jump the waiting line queue and benefit from quick access.
- > All private neuroimaging services require physician referral in Canada.
- > Significant differences in the approach to and philosophy about private imaging exist in Canada and the USA.
- > There are consumers of private imaging services who purchase scans for screening in the absence of physician recommendation or relevant symptoms in the USA.
- > Despite differences between practices, the ethics challenges universally relate to autonomy, distributive justice and resource allocation, and the special vulnerability of persons with possible brain disorders in a growing environment of commercialized health care.
- > Other challenges to the industry are further complicated by incomplete information available to consumers who rely on the Internet for healthcare choices and information.

## References

- Burst Media. (2007). Burst Media Finds that Internet Leads as Primary Source for Household Healthcare Information. Available at [http://www.burstmedia.com/about/news\\_display.asp?id=30](http://www.burstmedia.com/about/news_display.asp?id=30). Accessed August 29, 2008.
- Canadian Institute for Health Information. (2008) Medical imaging in Canada, 2007. CIHI, Ottawa, Ontario.
- Hesse, B.W., Nelson, D.E., Kreps, G.L., Croyle, R.T., Arora, N.K., Rimer, B.K. and Viswanath, K. (2005) Trust and Sources of Health Information. *Archives of Internal Medicine*, 165:2618-24.
- Illes, J., Fan, E., Koenig, B.A., Raffin, T.A., Kann, D. and Atlas, S.W. (2005) Self-referred whole-body CT imaging: current implications for health care consumers, *Radiology*, 228(2):346-51.
- Kalish, G.M., Bhargavan, M., Sunshine, J.H. and Forman, H.P. (2004) Self-referred whole-body imaging: where are we now? *Radiology*, 233(2):353-8.
- Racine, E. and Illes, J. (2008) Neuroethics. P.A. Singer and A.M. Viens (Eds.). *The Cambridge Textbook of Bioethics*. Cambridge University Press, Cambridge UK.
- Statistics Canada. (2006). The Daily: Canadian Internet use survey. Available at <http://www.statcan.ca/Daily/English/060815/d060815b.htm>. Accessed August 29, 2008.
- Ybarra, M. and Suman, M. (2006). Reasons, assessments and actions taken: sex and age differences in uses of Internet health information. *Health Education Research*, 23(3):512-21.

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