



Injecting doubt: responding to the naturopathic anti-vaccination rhetoric

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ABSTRACT

There is growing controversy about vaccination rates in Canada. A significant percentage of the population is uncertain about the science of vaccines, and in some areas ‘herd immunity’ is being threatened. Hesitancy to vaccinate is a complex phenomenon, but there is little doubt that complementary and alternative medicine (CAM) providers have played a role. In this study, our first objective was to examine websites of naturopathic clinics and practitioners in the provinces of British Columbia and Alberta, looking for (1) the presence of discourse that may contribute to vaccine hesitancy, and (2) recommendations for ‘alternatives’ to vaccines or flu shots. Of the 330 naturopath websites we analysed, 40 included vaccine hesitancy discourse and 26 offered vaccine or flu shot alternatives. Using these data, we explored the potential impact such statements could have on the phenomenon of vaccine hesitancy. Our second objective was to consider these misrepresentations in the context of Canadian law and policy, and to outline various legal methods of addressing them. We concluded that tightening advertising law, reducing CAM practitioners’ ability to self-regulate, and improving enforcement of existing common and criminal law standards would help limit naturopaths’ ability to spread inaccurate and science-free anti-vaccination and vaccine-hesitant perspectives.

KEYWORDS: anti-vaccination, alternative medicine, naturopath, regulation, vaccines, websites

INTRODUCTION

There is growing controversy about vaccination rates in Canada.¹ While a strong majority of Canadians support vaccination, public health authorities note that vaccination

¹ See, for example, Colin Busby & Nicholas Chesterley, *A Shot in the Arm: How to Improve Vaccination Policy in Canada*, 421C.D. HOWE INSTITUTE, Mar. 2015, at 1: ‘Most Canadian provinces fail to meet national immunization targets for key diseases, and coverage ratios among children in a few provinces, where data are well

rates are still below ideal levels.² This is occurring in part because numerous vaccination myths are being circulated throughout popular culture. The ongoing and unfounded connection made between vaccines and autism,³ for example, leads to inaccurate perceptions about risk, and in turn, a greater number of Canadians becoming hesitant about vaccinating. A 2015 survey found that one in four Canadian parents either believes vaccines are associated with autism and other mental health issues or is uncertain about the issue.⁴ Other research has found that, on average, 39% of Canadians believe that the science on vaccines is not clear.⁵ This is not to say that a large portion of Canadians harbor strident anti-vaccination beliefs. But a growing percentage has doubts and concerns that seem to be fueled by the misleading rhetoric around vaccination safety.

Indeed, recent outbreaks of measles and other vaccine preventable diseases have been attributed, at least in part, to the vaccine hesitancy phenomenon⁶ and to efforts by those in the anti-vaccination community to create doubt about the effectiveness and

kept and up-to-date are falling over time. If immunization coverage continues to fall, more vulnerable populations, such as children, the elderly, and people with medical conditions that may prevent them from being immunized, will be put at risk'. Also see David W. Scheifele, Scott A. Halperin & Julie A. Bettinger, *Childhood Immunization Rates in Canada are too low: UNICEF*, 19 PAEDIATR CHILD HEALTH 237, 237 (2014), which, summarizing a UNICEF study states, 'Canada fared poorly in comparison with other affluent countries, ranking 28th among 29 countries. The immunization coverage rate cited for Canada was 84%, compared with rates of 96% in the United Kingdom, and 93% in the United States and Australia. Canada was one of only three countries with rates <90%'.

² Madeline Smith & Elizabeth Church, *Canada's High Vaccination Rates Still Need Improvement, Study Finds*, THE GLOBE AND MAIL, July 21, 2015, <http://www.theglobeandmail.com/news/national/most-canadian-toddlers-vaccinated-against-key-childhood-diseases-statscan/article25601789/> (accessed Jan. 16, 2017).

³ Central to the vaccine-causing autism claims was a paper by Andrew Wakefield initially published in the influential *The Lancet* journal in 1998. This paper postulated that after eight children received the MMR vaccine, they developed intestinal inflammation leading to usually non-permeable peptides translocating first to the bloodstream, then the brain, where development was affected. This paper was later retracted by *The Lancet*. Much has been written about this retraction, and the vaccination scare which it produced. See for example, <http://www.bmj.com/content/342/bmj.c7452> (accessed Jan. 16, 2017). Claims made by Wakefield as well as other anti-vaccination authors have been assessed and discredited. See for example, <http://cid.oxfordjournals.org/content/48/4/456.full.pdf+html> (accessed Jan. 16, 2017), where it reads in the conclusion, 'Twenty epidemiologic studies have shown that neither thimerosal nor MMR vaccine causes autism. These studies have been performed in several countries by many different investigators who have employed a multitude of epidemiologic and statistical methods. The large size of the studied populations has afforded a level of statistical power sufficient to detect even rare associations. These studies, in concert with the biological implausibility that vaccines overwhelm a child's immune system, have effectively dismissed the notion that vaccines cause autism. Further studies on the cause or causes of autism should focus on more-promising leads'. Andrew Wakefield continues to propagate anti-vaccination views in the current day. His 2016 film, 'Vaxxed: From Cover-up to Catastrophe', was screened in cinemas across North America.

⁴ Elizabeth Payne, *Survey Raises Concern About Vaccine 'Hesitancy' Among Canadian Parents, Shows Some Harbour Misinformation*, THE NATIONAL POST, Dec. 18, 2015, <http://news.nationalpost.com/news/canada/survey-raises-concern-about-vaccine-hesitancy-among-canadian-parents-shows-some-harbour-misinformation> (accessed Jan. 16, 2017).

⁵ Arik Motskin & Zack Gallinger, *Canadians Are Surprisingly Skeptical of Vaccines*, THE 10 AND 3, Sept. 28, 2016, <http://www.the10and3.com/canadians-are-surprisingly-skeptical-of-vaccines/> (accessed Jan. 16, 2017).

⁶ See, for example, Peter J Hotez, *Texas and Its Measles Epidemics*, 13 PLOS MED. e1002153 (2016), where it is noted that a rapidly growing Anti-Vaxxer movement in the state appears to be contributing to the increase in vaccine exemptions. See also, Steven Salzberg, *Anti-Vax Movement To Blame For Quadrupling Of Mumps Cases This Year*, FORBES, Dec. 20, 2016, <http://www.forbes.com/sites/stevensalzberg/2016/12/20/anti-vax-movement-to-blame-for-quadrupling-of-mumps-cases-this-year/#d56c28f28d2b> (accessed Jan. 16, 2017); See also Susan Scutti, *Washing State Mumps Outbreak:*

safety of vaccination.⁷ A recent study found that in some areas of Vancouver the vaccination rates have declined to the point where the benefits of 'herd immunity' have been lost.⁸ Less than ideal vaccination rates can also have an economic impact. A 2016 study estimates that, in the USA alone, the economic burden of vaccine preventable diseases is approximately \$9 billion.⁹

The reasons for the existence and spread of vaccination hesitancy are complex, numerous, and interrelated.¹⁰ Still, there seems little doubt that complementary and alternative medicine (CAM) practitioners play a role.¹¹ While not all CAM practitioners are overtly anti-vaccination, there is an association between CAM use and not vaccinating children.¹² In addition, studies have found that training in CAM is associated with

278 Cases Reported in 5 Counties, CNN, Jan. 27, 2017, <http://www.cnn.com/2017/01/26/health/mumps-outbreak-washington-disease/> (accessed Jan. 31, 2017).

- ⁷ See, for example, Jon Woodward, B.C. Vaccination Rates Drop Amid 'Misinformation' Campaign, CTV NEWS, Mar. 24, 2014, <http://bc.ctvnews.ca/b-c-vaccination-rates-drop-amid-misinformation-campaign-1.1744379> (accessed Jan. 16, 2017); and Steven Salzberg, *Anti-Vaccine Movement Causes Worst Measles Epidemic In 20 Years*, FORBES, Feb. 1, 2015, <http://www.forbes.com/sites/stevensalzberg/2015/02/01/anti-vaccine-movement-causes-worst-measles-epidemic-in-20-years/#28efab767ef9> (accessed Jan. 16, 2017).
- ⁸ See Lisa Johnson, *Vaccination Rates too Low for 'Herd Immunity' in Most Vancouver-Area Schools, Study Finds*, CBC NEWS, Nov. 15, 2016; Also see additional reporting in Richard M. Carpiano & Julie A. Bettinger, *Vaccine Coverage for Kindergarteners: Factors Associated with School and Area Variation in Vancouver, British Columbia*, 6 VACCINE REP. 50 (2016); and CBCNews, *Lack of Herd Immunity Could Cause Mumps to Spread, Says Province*, CBC NEWS, Oct. 20, 2016, where it is reported that 70% in the province of Manitoba are vaccinated for mumps.
- ⁹ The authors estimate that 80% of that cost is attributable to unvaccinated individuals. See Sachiko Ozawa et al., *Modeling The Economic Burden Of Adult Vaccine Preventable Diseases In The United States*, 35 HEALTH AFF. 2124 (2016).
- ¹⁰ There is a rich literature on this topic that has explored the impact of trust, conspiracy theories, cognitive biases, social media, and parental experience with healthcare providers, to name but a few relevant factors. See, for example, Mariana Voinson, Sylvain Billiard & Alexandra Alvergne, *Beyond Rational Decision-Making: Modelling the Influence of Cognitive Biases on the Dynamics of Vaccination Coverage*, 10 PLOS ONE e0167842 (2015); Linda M. Niccolai & Melinda M. Pettigrew, *The Role of Cognitive Bias in Suboptimal HPV Vaccine Uptake*, 138 PEDIATRICS e20161537 (2016); Cornelia Betsch et al., *The Influence of Vaccine-critical Websites on Perceiving Vaccination Risks*, 15 J. HEALTH PSYCHOL. 446 (2010); Vanessa Wamsley, *The Psychology of Anti-Vaxers: How Story Trumps Science*, THE ATLANTIC, Oct. 19, 2014; Eve Dubé et al., *Understanding Vaccine Hesitancy in Canada: Results of a Consultation Study by the Canadian Immunization Research Network*, 11 PLOS ONE e0156118 (2016); Eve Dubé et al., *Parental Vaccine Hesitancy in Quebec (Canada)*, 8 PLOS CURR. (2016); and, for a study on the impact of parental experience with providers, see Douglas J. Opelet et al., *The Influence of Provider Communication Behaviors on Parental Vaccine Acceptance and Visit Experience*, 105 AM. J. PUBLIC HEALTH 1998–2004 (2015).
- ¹¹ CAM is a complex term to define, but as written on the Canadian Bioethics society, 'At the heart of all definitions of CAM is the fundamental distinction between therapies that are taken in complement with western medicine and those which are pursued as an alternative to the offerings of western medicine'. (<https://www.bioethics.ca/blog.html?Step=2&MB=283>) (accessed Jan. 16, 2017). A similar definition is provided on the NIH's National Centre for Complementary and Integrative Health, which defines 'complementary' as 'a non-mainstream practice is used together with conventional medicine', and 'alternative' as 'a non-mainstream practice is used in place of conventional medicine' (<https://nccih.nih.gov/health/integrative-health>) (accessed Jan. 16, 2017). Common examples of CAM include acupuncture, homeopathy, chiropractic, spinal manipulation therapy, reiki, etc.
- ¹² William K. Bleser et al., *Complementary and Alternative Medicine and Influenza Vaccine Uptake in US Children*, 138 PEDIATRICS e20154664 (2016). Also, people who are prone to being anti-vaccination or to having vaccine-hesitant attitudes may be more attracted to CAM professions. Regardless, there is a relationship between the use and practice of CAM and anti-vaccination attitudes. See also Tycho Jan. Zuzak et al., *Attitudes Towards Vaccination: Users of Complementary and Alternative Medicine Versus Non-Users*, 138 SWISS MED. WKLY 713,

increased anti-vaccination attitudes,¹³ and a 2004 study of Canadian Naturopathic students found that only 12.8% would advise full vaccination.¹⁴ As such, in Canada, there has been concern about how the naturopathic community and other alternative practitioners represent the health benefits and risks associated with vaccination.¹⁵

In this paper, we will shed light on vaccination-hesitant¹⁶ discourse used by the naturopathic community on clinic websites as well as those of individual naturopaths. An exploration of how naturopaths represent the risks and benefits of vaccination will inform what policies should be used to correct the spread of misinformation about vaccination. Furthermore, it will serve to highlight the degree to which naturopaths are engaged in the distribution of scientifically questionable vaccination-hesitant discourse.¹⁷

at abstract (2008): 'Refusal to follow the basic vaccination schemata was more frequent among CAM-users than non-users and reflected in most cases parental wishes rather than physicians' recommendations'. And, of course, naturopaths aren't the only CAM providers that have been associated with a tendency toward anti-vaccination views. See, for example, Emily A Medd & Margaret L Russell, *Personal and Professional Immunization Behavior Among Alberta Chiropractors: A Secondary Analysis of Cross-Sectional Survey Data*, 32:6 J. MANIPULATIVE PHYSIOL. THER. 448, at abstract (2009), where it is noted that 'only 35.7% [of Alberta chiropractors] would accept immunization for themselves in the future'; and Linda Lombroso, *Some Chiropractors Turn Their Backs on Vaccines*, USA TODAY, Feb. 17, 2015, <http://www.usatoday.com/story/news/nation/2015/02/17/some-chiropractors-turn-their-backs-on-vaccines/23582549/> (accessed Jan. 16, 2017); and also Bruce Y Lee, *Are Chiropractors Backing the Anti-Vaccine Movement?*, FORBES, Dec. 10, 2016, <http://www.forbes.com/sites/brucelee/2016/12/10/are-chiropractors-backing-the-anti-vaccine-movement/#3bd3e3f1Sdb6> (accessed Jan. 16, 2017).

- ¹³ Jason W. Busse et al., *Attitudes Towards Vaccination Among Chiropractic and Naturopathic Students*, 26 VACCINE 6237 (2008). In this study, it was found that naturopathic and chiropractic students in the later years of training were more likely to hold anti-vaccination views.
- ¹⁴ Kumaran Wilson et al., *A Survey of Attitudes Towards Paediatric Vaccinations Amongst Canadian Naturopathic Students*, 22 VACCINE 329, at abstract (2004). It was also noted that 'both willingness to advise full vaccination and trust in public health and conventional medicine decreased in students in the later years of the programme'. See also Ali Atheret et al., *Vaccination Attitudes and Education in Naturopathic Medicine Students*, 20 J. ALTERN. COMPLEMENT MED. A115, at abstract (2014): About 40% reported a healthy diet and lifestyle was more important for prevention of infectious diseases than vaccines.
- ¹⁵ See, for example, CBC NEWS, *Anti-vaccine Message From Some Naturopaths Raises Concerns*, Apr. 14, 2014, <http://www.cbc.ca/news/canada/calgary/anti-vaccine-message-from-some-naturopaths-raises-concerns-1.2609717> (accessed Jan. 16, 2017); Carly Weeks, *Regulating Alternative Medicine Adds False Legitimacy to Anti-vaccine Claims*, THE GLOBE AND MAIL, Nov. 26, 2015, <http://www.theglobeandmail.com/life/health-and-fitness/health/regulating-alternative-medicine-adds-false-legitimacy-to-anti-vaccine-claims/article27497447/> (accessed Jan. 16, 2017); Joanna Frketch, *Anti-vaccination Attitudes High Among Alternative Health Care Providers*, THE HAMILTON SPECTATOR, Feb. 27, 2015, <http://www.thespec.com/news-story/5452950-anti-vaccination-attitudes-high-among-alternative-health-care-providers/> (accessed Jan. 16, 2017); Jesse Ferreras, *Measles In Alberta: Naturopaths, Chiropractors Promoting Anti-Vaccine Messages*, HUFFINGTON POST CANADA, Feb. 5, 2014, http://www.huffingtonpost.ca/2014/05/02/measles-alberta-naturopaths-anti-vaccine_n_5150252.html (accessed Jan. 16, 2017); and see Bill Graveland, *Trial of Woman Who Treated Son With Holistic Medicine Will Reignite Debate Over Alternative Treatments*, THE NATIONAL POST, Nov. 27, 2016, <http://news.nationalpost.com/news/canada/trial-of-woman-who-treated-son-with-holistic-medicine-will-reignite-debate-over-alternative-treatments> (accessed Jan. 16, 2017).
- ¹⁶ By 'vaccination hesitant', we mean discourse which (1) explicitly denounces vaccination; (2) raises issues of harms and risks of vaccines; (3) offers alternative vaccination services such as alternatives to the flu shot.
- ¹⁷ Previous research has found that much of what is advertised on the websites for naturopath clinics is not supported by a solid foundation of science. For example, see Timothy Caulfield & Christen Rachul, *Supported by Science?: What Canadian Naturopaths Advertise to the Public*, 7 ALLERGY, ASTHMA & CLIN. IMMUNOL. 14 (2011), 'A review of the therapies advertised on the websites of clinics offering naturopathic treatments does not support the proposition that naturopathic medicine is a science and evidence-based practice'.

VACCINE EFFECTIVENESS AND SAFETY

The development of vaccines has been characterized as one of civilization's greatest health achievements.¹⁸ It has been estimated that, worldwide, vaccination prevents two to three millions deaths every year.¹⁹ It has been noted that if people stop vaccinating their children, vaccine preventable disease can and will come back.²⁰ Indeed, measles—a vaccine preventable disease—remains one of the leading causes of death for young children.²¹ While almost all health interventions are associated with some risks,²² the vaccines that are currently recommended have a strong and well-known safety profile.²³ Also, there is no credible evidence that the preservatives used in vaccines, such as thimerosal, are associated with the development of any disease or ailment, including autism.²⁴ Indeed, there is absolutely no credible evidence to support the myth that vaccines cause autism.²⁵ The concern that children can't handle multiple vaccines at once is also without foundation.²⁶ In fact, the immune system can handle thousands of different challenges. Every day children are exposed to multiple foreign substances that create an immune response. So while new vaccines require rigorous testing and we should continue to monitor the safety and effectiveness of existing vaccines, there is a large body of literature that has established not only their safety but the vital role that vaccines play in maintaining a healthy population.

CONTINUUM OF DOUBT

We sought to provide a snapshot of the vaccination-hesitant discourse present on naturopath websites in the provinces of British Columbia and Alberta. This is not meant to be a comprehensive analysis of all the potentially problematic language available on

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- ¹⁸ See World Health Organization, *10 Facts on Immunization* (May 2014) <http://www.who.int/features/factfiles/immunization/en/> (accessed Jan. 16, 2017).
- ¹⁹ *Id.*
- ²⁰ CDC, 'What Would Happen If We Stopped Vaccinations?' <http://www.cdc.gov/vaccines/vac-gen/whatifstop.htm> (accessed Jan. 16, 2017).
- ²¹ See World Health Organization, *Fact Sheet: Measles* (Nov. 2016) <http://www.who.int/mediacentre/factsheets/fs286/en/> (accessed Jan. 16, 2017). In 2015, there were over 130,000 measles deaths globally. Vaccination resulted in 79% reduction in deaths between 2000 and 2015 worldwide.
- ²² There are risks associated with vaccination, but the adverse events are very infrequent and generally relatively mild (eg reaction at the injection site). More serious adverse events (eg allergic reactions) are extremely rare.
- ²³ See, for example, CDC—Understanding MMR Vaccination Safety <http://www.cdc.gov/vaccines/hcp/conversations/downloads/vacsafe-mmr-color-office.pdf> (accessed Jan. 16, 2017); and Public Health Agency of Canada, *Vaccine Safety* <http://www.phac-aspc.gc.ca/im/safety-secure-eng.php> (accessed Jan. 16, 2017); and Public Health Agency of Canada, *Canadian Adverse Events Following Immunization Surveillance System (CAEFISS)* (2015), <http://www.phac-aspc.gc.ca/im/vs-sv/index-eng.php> (accessed Jan. 16, 2017).
- ²⁴ CDC, *Understanding Thimerosal, Mercury and Vaccine Safety* (Feb. 2013) <https://www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-thimerosal-color-office.pdf> (accessed Jan. 16, 2017).
- ²⁵ Stehr-Green P et al., *Autism and Thimerosal-Containing Vaccines: Lack of Consistent Evidence for an Association*, 25 AM. J. PREVENTIVE MED. 101 (2003); See Mady Hornig et al., *Lack of Association Between Measles Virus Vaccine and Autism with Enteropathy: A Case-Control Study*, 3 PLOS ONE e3140 (2008); and CDC, *Vaccines Do Not Cause Autism* <http://www.cdc.gov/vaccinesafety/concerns/autism.html> (accessed Jan. 16, 2017).
- ²⁶ Institute of Medicine, *The Childhood Immunization Schedule and Safety: Stakeholder Concerns, Scientific Evidence, and Future Studies* (National Academy of Sciences, 2013), http://nationalacademies.org/hmd/~media/Files/Report%20Files/2013/Childhood-Immunization-Schedule/ChildhoodImmunizationScheduleandSafety_RB.pdf (accessed Jan. 16, 2017), complete study at <https://www.ncbi.nlm.nih.gov/books/NBK206940/> (accessed Jan. 16, 2017).

naturopath websites. Rather, the goal is to highlight examples of the type of rhetoric used by naturopaths in this context.

First, we identified naturopaths in each province using the website www.findanaturopath.com, which has over 1850 naturopaths listed in Canada (157 in Alberta and 388 in British Columbia), and captured all available websites for the listed naturopaths in the two provinces (221 in British Columbia, 105 in Alberta).²⁷ We then used Google to search for the appearance of the following words in each website: vaccine, vaccination, flu, immune, immunization.²⁸ In the case of any search words appearing on the website, we looked for the following: (1) discourse of vaccine hesitancy (text or links to text which demonstrate explicit anti-vaccination views or which raise issues surrounding the harms/risks of vaccination) and (2) services offered or text descriptions of alternatives to vaccinations or the flu shot. While there is an abundance of websites offering natural solutions to 'boost immunity' or to prepare one for the flu season,²⁹ these websites were not included in our analysis as they did not explicitly address vaccination or flu shots.³⁰

After reviewing just over 330 websites, we found 40 websites with vaccine hesitancy discourse, and 26 websites offering vaccine or flu shot alternatives. Thirteen websites had both. In total, 53 had either vaccine-hesitant language, suggested a vaccine alternative or had both. Text examples of vaccine hesitancy discourse can be found in Table 1, and text examples of vaccine or flu shot alternatives in Table 2.

As evident in Table 1, the vaccination hesitancy information on the naturopath websites falls on a continuum, from those that are overtly anti-vaccination to those that subtly undermine the relevant science. For example, it is common on websites with vaccine hesitancy discourse to make a link between mercury (thimerosal) and vaccines, and to then discuss the related risks and harms (see examples 1 and 2 in Table 1). There is no credible evidence that the mercury-based preservative used in vaccines, thimerosal, is linked to illnesses in children.³¹ Furthermore, almost all vaccines in

²⁷ Additional websites (approximately 10) were added when found URLs didn't work but others matching the same listed naturopath or same clinic appeared in Google searches.

²⁸ The search query was the following: search word + site: URL. So, in the case of the search word 'vaccine' and the website www.naturopathicfundamentals.com, the search was as followed: vaccine site:www.naturopathicfundamentals.com and vaccine site:naturopathicfundamentals.com

²⁹ For example, the clinic www.backtowellness.ca (accessed Nov. 14, 2016) offers 'Joy of the Mountains Oregano Oil', which is 'absolutely' proven 'to boost your immune system'. The site www.askdoctorbill.com (accessed Nov. 14, 2016) suggests numerous 'suppliments [sic] to boost your immune system' including vitamin D3 and Astragalus. The clinic www.woodgrovepinesclinic.com (accessed Nov. 14, 2016) offers acupuncture for flu prevention. A large number of sites such as www.drarelmajian.ca, www.drhabert.com, www.drkarenmcgee.com, www.crossroadsnaturopathic.com (accessed Nov. 16, 2016) (to name just a few) offer an 'IV therapy' service, among others, for flu prevention. Other sites such as www.pointgreywellness.com (accessed Nov. 16, 2016) offer intravenous vitamin therapy not in the context of preventing the flu, but as a means to 'manage stress, boost your immune system, increase energy levels, balance hormones', etc. Of course, these claims and services are also not supported by science. See, for example, Timothy Caulfield, *The IV Therapy Myth*, NATIONAL POST, July 11, 2016; and Timothy Caulfield, *Immune Boost Bunk*, HEALTH NEWS REVIEWS, Oct. 15, 2015.

³⁰ It is worth noting, however, that while these websites did not explicitly suggest that vaccination is not required, there is an implication that these 'natural' approaches are an effective way to deal with 'boosting' your immune system, which may also contribute to vaccination hesitant thinking by contributing to the belief that there are alternatives to vaccination.

³¹ CDC, *supra* note 24, at 1–2.

Table 1. Examples of vaccine hesitancy discourse (all websites accessed in November 2016)

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- 1) ‘...children are now being given increasing numbers of vaccinations containing potentially harmful derivatives and substances such as mercury, thimerisol [sic], aluminum and formaldehydes. These harmful derivatives can become trapped in our tissues, clogging our filters and diminishing one’s ability of further toxins out.’—www.evolvepathic.com
- 2) ‘Vaccines given to children and adults contain mercury and aluminum. Babies are especially susceptible to small amounts of mercury injected directly into their tiny bodies. It is now suspected that the increase in autism and Asperger Syndrome is related to the mercury in childhood vaccinations.’—www.vancouvernaturopathicclinic.com
- 3) ‘The conventional Flu Shot is a mixture of 3 strains of flu viruses mixed with a number of chemical preservatives and these strains are based on a prediction of what flu viruses some medical experts think will be the most problematic this season. This is really an impossible prediction to make when we have thousands of different strains of viruses that are continuously mutating.’—www.advancednaturopathic.com
- 4) ‘A [sic] epidemiologist researcher from British Columbia, Dr. Danuta Skowronski, published a study earlier this year showing that people who were vaccinated consecutively in 2012, 2013 and 2014 appeared to have a higher risk of being infected with new strains of the flu.’—www.drtas.ca
- 5) ‘Increasing evidence suggests that injecting a child with nearly three dozen doses of 10 different viral and bacterial vaccines before the age of five, while the immune system is still developing, can cause chronic immune dysfunction. The most that vaccines can do is lead to an increase in antibodies to a specific disease.’—www.evolvevitality.com
- 6) ‘The bugs in question (on the Canadian Vaccine List) can enter our systems and depending on our bodies, our histories, and mostly the bugs’ propensity, they can cause serious harm. There are certainly questionable ingredients in vaccines that have the potential to do the same.’—www.tharavayali.ca
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Canada are made without thimerosal. Regardless, there is no evidence that the amount of thimerosal used in vaccines is harmful. Another common vaccination-hesitancy sentiment revolves around either questioning the efficacy of vaccines to prevent symptoms (see example 3 in Table 1) and/or suggesting that vaccination can lead to higher degrees of risk (see examples 4 and 5 in Table 1). The risks associated with vaccination are not only relatively mild but also very infrequent.³² And more serious occasions, for example, an allergic reaction, are very rare.³³ Notably, very few naturopath websites were explicitly supportive of vaccinations.

³² *Id.*; Public Health Agency of Canada, *Vaccine Safety*, <http://www.phac-aspc.gc.ca/im/safety-secure-eng.php> (accessed Jan. 16, 2017); and Public Health Agency of Canada, *Canadian Adverse Events Following Immunization Surveillance System (CAEFISS)* (2015) <http://www.phac-aspc.gc.ca/im/vs-sv/index-eng.php> (accessed Jan. 16, 2017).

³³ *Id.*

Table 2. Examples of vaccine or flu shot alternatives [all websites accessed in November, 2016]

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- 1) ‘**Get a homeopathic prophylactic immune injection**—As an alternative to the flu shot, you can choose a homeopathic prophylactic injection instead. These have been scientifically shown to increase white blood cell activity by over 30%. This injection is safe and without side effects.’—www.drattema.com

 - 2) ‘Book a 30 minute visit with our naturopathic doctor for: Homeopathic Flu Injection: safe and effective alternative to the regular flu shot. It is a combination of homeopathic remedies, Heel’s Engystol and Gripp to stimulate body’s own health defense system.’—www.revivenaturopathic.com

 - 3) ‘There are alternatives to the standard vaccines, and these work on boosting your immune response naturally through diet, supplements and with standardized plant extracts that stimulate and strengthen the immune response without any added toxins.’—www.fishcreek.ca

 - 4) ‘Unfortunately the flu vaccine includes adjuvants (additives) that are poorly tolerated and can be difficult to process (including many patients suffering from auto-immune diseases, that often suffer major relapses after receiving a flu shot). Its [sic] also based on last year’s virus, which has mutated considerably by this year, hence rendering the vaccine’s effectiveness questionable to this year’s newly mutated virus. Dosing a homeopathic preparation based on the last 100 years of flu pandemics encompasses the many genetic variants that occur with flu viruses. It is free of adjuvants, and will not interfere with any other medications or cause the immune dysregulation that is seen in auto-immune diseases.’—www.daiseykentnd.com

 - 5) ‘It’s that time again, the dreaded cold and flu season! Many people opt to get a flu shot. This year, there is concerns [sic] the flu vaccine may not be effective against all virus strains. Fortunately, our body has excellent defense mechanisms to protect us from these harmful viruses and bacteria. It’s time to start boosting your immune system.... Naturally!!! Many of the suggestions I have listed are herbs or botanicals you can find in your kitchen cupboard. Let’s start with the basics, as these really do work.’—www.vitaliahealthcare.ca

 - 6) ‘Immune Boosting Homeopathics: You may be more familiar with the conventional flu shot, which provides vaccination from predicted influenza virus strains; not necessarily what people are actually exposed to this season. Homeopathic immune boosters can be delivered by injection or orally, and do not have the side effects commonly seen with flu shots, such as malaise, fever, and lethargy. They are great for prevention and treatment of colds and give your immune system an extra punch to naturally knock out those bugs and viruses throughout the year.’—www.drsafiakassam.com
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In terms of alternatives to vaccines or flu shots, again a continuum is present as some suggest complete replacement while others suggest supporting flu shots with natural measures. Although naturopaths recommend a wide range of vaccination alternatives including plant extracts, ‘biopuncture’, ultraviolet blood irradiation, acupuncture, Vitamin C & D, herbs, ‘immune booster shots’, etc., the most commonly mentioned

alternatives are described as some form of homeopathy.³⁴ Of course, there is no scientific evidence supporting the efficacy of homeopathy for treating any health condition.³⁵ The idea that homeopathic vaccines could work is scientifically absurd.³⁶ Additionally, as recently as November of this year, the American Federal Trade Commission (FTC) echoed this statement, stating that there is no scientific basis supporting the efficacy claims made by homeopathic products.³⁷ Our analysis is, of course, confined to what is disclosed on the websites. We do not know what may or may not be disclosed by naturopaths to patients during clinical encounters. Regardless, our data provide a sense of the kind of anti-vaccination rhetoric that exists within the naturopathic community in Alberta and British Columbia.

THE IMPACT

As noted, there is evidence that suggests that CAM providers play a role in parental attitudes and vaccination intentions.³⁸ The relationship is complex, however, as those who are more likely to be attracted to CAM are also the ones most likely to hold negative attitudes toward vaccination.³⁹ Still, there seems little doubt that healthcare providers can play an important role in how parents and patients approach vaccination.⁴⁰ This seems particularly true if naturopaths are involved. A 2011 study found that 'endorsing a naturopathic physician' as the 'most trusted source of information regarding vaccination' was 'associated with greater odds of having a partially vaccinated or unvaccinated child'.⁴¹ In addition, because the information is available to anyone searching for

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- ³⁴ Of the 26 websites offering vaccination or flu shot alternatives, 16 (approximately 62%) were described as 'homeopathic'. This included alternatives such as 'homeopathic and vitamin injection', 'homeopathic remedies', 'herbal and homeopathic medicines', 'homeopathic preparation of WHO influenza vaccine', 'homeopathic prophylaxis', 'homeopathic prophylactic immune injection', etc.
- ³⁵ See, for example, Australian Government, National Health and Medical Research Council, *NHMRC Statement: Statement on Homeopathy* (Australia: NHMRC, ref #CAM02, 2015), which offers the following summary: 'Based on the assessment of the evidence of effectiveness of homeopathy, NHMRC concludes that there are no health conditions for which there is reliable evidence that homeopathy is effective'. https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cam02_nhmrc_statement_homeopathy.pdf (accessed Jan. 16, 2017).
- ³⁶ Edzard Ernst, *There is No Scientific Case for Homeopathy: the Debate Is Over*, THE GUARDIAN, Mar. 12, 2015, <https://www.theguardian.com/commentisfree/2015/mar/12/no-scientific-case-homeopathy-remedies-pharmacists-placebos> (accessed Jan. 16, 2017).
- ³⁷ United States Government, Federal Trade Commission, *Staff Report on the Homeopathic Medicine & Advertising Workshop* (United States of America: FTC, 2016) https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-staff-report-homeopathic-medicine-advertising-workshop/p114505_otc_homeopathic_medicine_and_advertising_workshop_report.pdf (accessed Jan. 16, 2017).
- ³⁸ Michelle J. Mergler et al., *Association of Vaccine-Related Attitudes and Beliefs Between Parents and Health Care Providers*, 31 VACCINE 4591 (2013).
- ³⁹ Mathew Browne et al., *Going Against the Herd: Psychological and Cultural Factors Underlying the 'Vaccination Confidence Gap'*, 10 PLOS ONE e0132562 (2015).
- ⁴⁰ See, for example, Deborah Gust et al., *Parental Attitudes Toward Immunizations and Health Care Providers*, 29 AM. J. PREVENTIVE MED. 105 (2005), https://www.researchgate.net/profile/Glen_Nowak/publication/7738358_Parent_Attitudes_Toward_Immunizations_and_Healthcare_Providers/links/00b7d51b5e5084fd09000000.pdf (accessed Jan. 16, 2017) as well as (in the American context), Philip J. Smith et al., *Associations Between Health Care Providers' Influence on Parents Who Have Concerns About Vaccine Safety and Vaccination Coverage*, 118 PEDIATRICS 2197 (2006), <http://pediatrics.aappublications.org/content/118/5/e1287.short> (accessed Jan. 16, 2017).
- ⁴¹ Jason W Busse, Rishma Walji & Kumanan Wilson, *Parents' Experiences Discussing Pediatric Vaccination With Healthcare Providers: A Survey of Canadian Naturopathic Patients*, 6 PLOS ONE e22737 (2011).

information on vaccination and it appears on the websites of healthcare providers, it may facilitate the spread of misinformation to the public more broadly. This seems particularly worrisome given that many provincial jurisdictions have explicitly legitimized naturopaths via legislative action.⁴²

Furthermore, research tells us that mere exposure to anti-vaccination rhetoric—whether in the form of conspiracy theories⁴³ or falsely balanced stories in the media⁴⁴—can also impact attitudes and can play a role in the intention to vaccinate. It is not the case, of course, that people make decisions about vaccination based solely on rational, evidenced-based, scientific perspectives.⁴⁵ Individuals are situated in diverse contexts and are informed and influenced by a range of different individuals and social entities when it comes to making decisions about vaccinations.⁴⁶ Once a particular perspective is established, we all have a natural tendency, known as the confirmation bias, to seek information that corresponds with and validates our existing view.⁴⁷ As such, for those who are already hesitant or hold anti-vaccination views, the existence of anti-vaccination or vaccination-hesitant rhetoric on naturopathic websites could serve as a source of validation. This seems particularly so because of the heightened status of naturopaths, at least in some jurisdictions, as a government regulated healthcare profession.

To be fair, the number of naturopathic websites with explicitly anti-vaccination rhetoric was relatively small (53 out of the 330 that we reviewed). Still, the ease with which this information can be accessed online increases the significance of the

⁴² In 2012, the Albertan provincial government gave naturopaths full status as medical professionals. Josh Wingrove, *Alberta Gives Naturopaths Full Status as Medical Professionals*, THE GLOBE AND MAIL, July 25, 2012, <http://www.theglobeandmail.com/news/national/alberta-gives-naturopaths-full-status-as-medical-professionals/article4441076/> (accessed Jan. 16, 2017). Full provincial document provided here: <http://www.qp.alberta.ca/documents/Regs/2012.126.pdf> (accessed Jan. 16, 2017). In 2009, the B.C. Ministry of health recognized naturopathic doctors as primary health-care providers, granting the ability of prescription authority in addition to other additional privileges. See: <http://www.cnpbc.bc.ca/wp-content/uploads/Scope-of-Practice-for-Naturopathic-Physicians-Standards-Limits-and-Conditions-for-Prescribing-Dispensing-and-Compounding-Drugs.pdf> (accessed Jan. 16, 2017).

⁴³ See, for example, Daniel Jolley & Karen M Douglas, *The Effects of Anti-Vaccine Conspiracy Theories on Vaccination Intentions*, 9 PLOS ONE e89177 (2014); and Ted Goertzel, *Conspiracy Theories in Science*, 11 EMBO REP. 493 (2010).

⁴⁴ Graham Dixon & Christopher Clarke, *The Effect of Falsely Balanced Reporting of the Autism–Vaccine Controversy on Vaccine Safety Perceptions and Behavioral Intentions*, 28 HEALTH EDUC. RES. 352 (2013); and Graham Dixon & Christopher Clarke, *Heightening Uncertainty Around Certain Science Media Coverage, False Balance, and the Autism–Vaccine Controversy*, 35 SCI. COMMUN. 358 (2013).

⁴⁵ See Julie Leask, *Target the Fence-sitters: Past Waves of Vaccine Rejection in Industrialized Nations Have a Lot to Teach us About Preventing Futures Ones*, 473 NATURE 443 (2011); Voinson et al., *supra* note 10; and Sherry L. Seethaler, *Shades of Grey in Vaccination Decision Making Tradeoffs, Heuristics, and Implications*, 38 SCI. COMMUN. 261 (2016).

⁴⁶ MELISSA LEACH & JAMES FAIRHEAD, *VACCINE ANXIETIES: GLOBAL SCIENCE, CHILD HEALTH AND SOCIETY* (2007). See also Mathew C. Nisbet & Ezra Markowitz, American Association for the Advancement of Science, *American's Attitudes About Science and Technology: The Social Context for Public Communication* (Commissioned Review) (2016), http://www.aaas.org/sites/default/files/content_files/NisbetMarkowitz_ScienceAttitudesReview_AAAS_Final_March10.pdf (accessed Jan. 16, 2017) and <http://pus.sagepub.com/content/early/2016/07/23/0963662516661090.full.pdf+html> (accessed Jan. 16, 2017).

⁴⁷ Hart William et al., *Feeling Validated Versus Being Correct: A Meta-analysis of Selective Exposure to Information*, 135 PSYCHOL. BULL. 555 (2009). For the impact of confirmation bias in the context of vaccination see, for example, Voinson et al., *supra* note 10.

confirmation bias issue and the potential sway of the naturopath websites. The number of people going online for health information continues to increase⁴⁸ and social media use is also popular.⁴⁹ Studies have found that social media can facilitate the creation of online echo chambers,⁵⁰ or online confirmation bubbles,⁵¹ whereby individuals are more often exposed to information which confirms rather than questions their perspectives.⁵² Coupled with a fairly significant presence of anti-vaccination sentiment on the internet,⁵³ a social media environment continually confirming and supporting one's views might play a substantial role in not only reinforcing anti-vaccination perspectives but also in heightening skepticism among those with doubts.⁵⁴

CHANGING PUBLIC REPRESENTATIONS

Once an individual has formed an opinion about vaccination, it can be a challenge to alter that perspective. Studies have shown that the effect of providing more information about the evidence supporting vaccination may not, at least in some situations, have an effect on intention to vaccinate.⁵⁵ In addition, providing individuals with 'the facts' can, paradoxically, cause individuals to entrench further into their original position of opposition.⁵⁶ As such, changing perspectives in order to increase vaccination rates will not be easy. That said, the circulation of misleading rhetoric can only make the task more difficult, as it undermines the production of a consistent and accurate message, which

⁴⁸ Statistics Canada website. 2009 *Canadian Internet Use Survey*. Ottawa, ON: Government of Canada; 2011, www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm (accessed Jan. 16, 2017); See also, Bradford W. Hesse, Richard P. Moser & Lila J. Rutten, *Surveys of Physicians and Electronic Health Information*, 362 *NEW ENG. J. MED.* 859 (2010).

⁴⁹ In a 2015 poll conducted by Forum Research, nearly 60% of Canadians use Facebook, 30% use LinkedIn, 25% use Twitter, and 16% use Instagram. (<http://poll.forumresearch.com/post/213/facebook-leads-in-penetration-linkedin-shows-most-growth>) (accessed Jan. 16, 2017). In the USA, PEW research shows social media growing among all age categories (<http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/>) (accessed Jan. 16, 2017).

⁵⁰ See, for example, Michela D. Vicario et al., *Echo Chambers in the Age of Misinformation* (2015) arXiv:1509.00189; also Loren Jasny, Joseph Waggle & Dana R Fisher, *An Empirical Examination of Echo Chambers in US Climate Policy Networks*, 5 *NAT. CLIM. CHANGE* 782 (2015); and Hywel T.P. Williams et al., *Network Analysis Reveals Open Forums and Echo Chambers in Social Media Discussions of Climate Change*, 32 *GLOBAL ENVIRON. CHANGE* 126 (2015).

⁵¹ Giordano Pérez Gaxiola & Badenoch D., *Online Filter Bubbles and Confirmation Bias in Health Care: Narrative of a Vaccine Skeptic*, In: *Evidence-Informed Public Health: Opportunities and Challenges*. Abstracts of the 22nd Cochrane Colloquium; 2014 21-26 Sep; Hyderabad, India. John Wiley & Sons; 2014; and Tanushree Mitra et al., *Understanding Anti-Vaccination Attitudes in Social Media* (2016), <http://comp.social.gatech.edu/papers/icwsm16.vaccine.mitra.pdf> (accessed Jan. 16, 2017).

⁵² *Id.*

⁵³ See, for example, Richard K. Zimmerman et al., *Vaccine Criticism on the World Wide Web*, 7 *J. MED. INTERNET RES.* e17 (2005).

⁵⁴ The impact of misinformation on those that are hesitant, rather than fully anti-vaccination, is the creation of doubt: CD Howe, *Why Vaccination Rates Are Below Targets across Canada and What To Do About It* (Mar. 2015), <https://www.cdhowe.org/media-release/why-vaccination-rates-are-below-targets-across-canada-and-what-do-about-it> (accessed Jan. 16, 2017). Also, Cornelia et al., *supra* note 10, at 446–455.

⁵⁵ Lynn B Myers & Robin Goodwin, *Determinants of Adults' Intention to Vaccinate Against Pandemic Swine Flu*, 11 *BMC PUBLIC HEALTH* 15 (2011); contrarily, see Olivier Chanel et al, *Impact of Information on Intentions to Vaccinate in a Potential Epidemic: Swine-Origin Influenza A (H1N1)*, 72 *SOC. SCI. & MED.* 142 (2011).

⁵⁶ Brendan Nyhan & Jason Reifler, *Does Correcting Myths About the Flu Vaccine Work? An Experimental Evaluation of the Effects of Corrective Information*, 33 *VACCINE* 459 (2015); see also Corey L. Guenther & Mark D. Alicke, *Self-Enhancement and Belief Perseverance*, 44 *J. EXP. SOC. PSYCHOL.* 706 (2008).

studies show can, over the long term, have an impact on vaccination intentions.⁵⁷ So, there are certainly many reasons for seeking to correct online misinformation, including the fact that the misleading or false information proffered by naturopaths and other alternative practitioners conflicts with various statutory regulations, common law rules, and ethical standards. We detail breaches of this nature below, and consider the potential roles of law and policy in eliminating them.

1. Truth in advertising

The Competition Bureau enforces the *Competition Act* and regulates Canadian truth in advertising. Section 52(1) of the *Competition Act* states that ‘No person shall, for the purpose of promoting, directly or indirectly, the supply or use of a product or for the purpose of promoting, directly or indirectly, any business interest, by any means whatever, knowingly or recklessly make a representation to the public that is false or misleading in a material respect’.⁵⁸ This is an offence punishable by fine or imprisonment.⁵⁹ The Bureau’s standards define materiality in the context of ‘false and misleading in a material respect’ as when the ‘literal meaning or general impression conveyed could influence the ordinary consumer to buy or use the advertised product or service’.⁶⁰ Performance claims must be supported by an ‘adequate and proper test’.⁶¹ This involves objectively establishing that the product or service has an effect beyond chance, but does not require methodological rigor equivalent to that of a scholarly publication.⁶² The omission of a requirement of methodological rigor enables the use of unscientific research and biased information to justify products and services.⁶³

Special civil remedies also exist under the *Competition Act*. Section 36 (1) states that ‘any person who has suffered loss or damage as a result of conduct that is contrary to any provision of Part VI [which includes s.52] [...] may, in any court of competent jurisdiction, sue for and recover from the person who engaged in the conduct or failed to comply with the order [...]’. The Competition Tribunal is a specialized adjudicative body that handles most matters relating to advertising misrepresentation. However, there is precedent for handling such matters in the courts. In *Maritime Travel Inc. v Go Travel Direct.Com Inc.*, the Nova Scotia Supreme Court, in a decision later upheld by the Nova

⁵⁷ See, for example, Alina Sadaf et al, *A Systematic Review of Interventions for Reducing Parental Vaccine Refusal and Vaccine Hesitancy*, 31 *VACCINE* 4293 (2013); Sander L. van der Linden et al., *Highlighting Consensus Among Medical Scientists Increases Public Support for Vaccines: Evidence From a Randomized Experiment*, 15 *BMC PUBLIC HEALTH* 1207 (2015).

⁵⁸ *Competition Act*, RSC 1985, c C-34.

⁵⁹ *Id.*

⁶⁰ Competition Bureau, *False and Misleading Representations and Deceptive Marketing Practices under the Competition Act*, Nov. 3, 2011, <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03133.html> (accessed Jan. 31, 2017).

⁶¹ *Id.*

⁶² Canada (Commissioner of Competition) v. Chatr Wireless Inc, 2013 ONSC 5315 at para 295, <http://www.canlii.org/en/on/on/onsc/doc/2013/2013onsc5315/2013onsc5315.html> (accessed Jan. 31, 2017).

⁶³ An entirely new series of publications has been developed over decades to grant legitimacy to what is often methodologically poor research on alternative medicine interventions. See, for example, a list of naturopathic journals here: *Naturopathic Peer-Reviewed Journals*, THE WORLD NATUROPATHIC FEDERATION, <http://worldnaturopathicfederation.org/naturopathic-peer-reviewed-journals/> (accessed Jan. 31, 2017).

Scotia Court of Appeal, held that a plaintiff travel agency had suffered compensable loss due to a second travel agency's advertisements comparing its price to a misrepresentation of the plaintiff's.⁶⁴ The same principle of loss found in s.36 would logically apply to misrepresentations made by health care providers or health care product companies, online or otherwise, to patients/consumers who subsequently experience harm or loss, though case law in this vein is currently lacking.⁶⁵

Health Canada has a mandate to approve or deny proposed natural health products, to determine labeling requirements for them, and to regulate advertising relating to them. Specific changes to the federal Natural Health Product Regulations in 2015 now require homeopathy vaccines (also referred to as nosodes) to include on their labels the statement that '[t]his product is neither a vaccine nor an alternative to vaccination. This product has not been proven to prevent infection. Health Canada does not recommend its use in children and advises that your child receive all routine vaccinations'.⁶⁶ The press release for these changes also indicated that Health Canada will no longer approve 'specific health claims on homeopathic remedies for cough, cold and flu for children 12 or under', unless the claims are backed by scientific evidence.⁶⁷ This is an important first step in curbing inaccurate representations, though tighter regulation involving bans on unproven claims in all contexts would be beneficial. A 2016 proposal from Health Canada, currently in the consultation stage, would change the standard for natural health products to one that only allows claims that are supported with scientific proof.⁶⁸ The adoption of this standard would finally require *de facto* truth in advertising among natural health products in Canada. However, the proposal is being strongly opposed by the Canadian Health Food Association, and its future is uncertain.⁶⁹

Better regulation of product claims will help establish science-based norms that will likely reduce, in the long term, the number of false claims found on Canadian websites. Yet, Health Canada has limited power to directly regulate the claims made on the websites we studied. The *Food and Drugs Act* and *Regulations* only apply to advertisements

⁶⁴ *Maritime Travel Inc. v. Go Travel Direct.Com Inc.*, 2008 NSSC 163 (CanLII).

⁶⁵ Recently, the B.C. Supreme Court rejected an application to certify a class-action lawsuit against Valeant Pharmaceuticals and subsidiary Afexa Life Sciences relating to false advertising of efficacy for cold and flu remedy Cold-FX. However, an individual lawsuit appears to be moving forward: see *Harrison v. Afexa Life Sciences Inc.*, 2016 BCSC 2123 (CanLII); see also *Harrison v. Afexa Life Sciences Inc.*, 2016 BCSC 83 (CanLII); see also *The Canadian Press, Judge Rejects B.C. Man's Class Action Suit Against Cold-FX Makers*, CBC NEWS, Nov. 17, 2016, <http://www.cbc.ca/news/business/cold-fx-class-action-lawsuit-1.3854944> (accessed Jan. 31, 2017).

⁶⁶ Government of Canada, *Statement From the Minister of Health on Labelling Changes for Certain Homeopathic Products*, [Health Canada Labeling], July 31, 2015, <http://news.gc.ca/web/article-en.do?nid=1014019> (accessed Jan. 31, 2017).

⁶⁷ *Id.*

⁶⁸ Government of Canada, *Consulting Canadians on the Regulation of Self-Care Products in Canada*, Nov. 25, 2016, <http://healthycanadians.gc.ca/health-system-systeme-sante/consultations/selfcare-autosoins/document-eng.php> (accessed Jan. 31, 2017); see also Carly Weeks, *Health Canada to Change Standards for Natural Health Products*, THE GLOBE AND MAIL, Sept. 9, 2016, <http://www.theglobeandmail.com/news/national/health-canada-to-change-standards-for-natural-health-products/article31810843/> (accessed Jan. 31, 2017).

⁶⁹ Canadian Health Food Association, *Save Our Supplements*, <https://chfa.ca/en/natural-health-products/nhps-not-drugs/index.html> (accessed Jan. 31, 2017); see also Regulatory Affairs Professionals Society, *Health Canada Looks to Raise the Bar for Regulating Natural Health Products*, Oct. 4, 2016, <http://www.raps.org/Regulatory-Focus/News/2016/10/04/25942/Health-Canada-Looks-to-Raise-the-Bar-for-Regulating-Natural-Health-Products/> (accessed Jan. 31, 2017).

that promote ‘directly or indirectly the sale or disposal of any food, drug, cosmetic or device’.⁷⁰ Thus, Health Canada does not regulate advertisements for health services like acupuncture, nor does it control general anti-vaccination claims like those we noted on 40 of the websites we analysed. However, it could enforce its standards in relation to the 26 websites we noted that put forth vaccination alternatives.

Abroad, the USA has recently undertaken a truth-in-advertising approach to deal with unproven remedies. On November 15, 2016, the FTC, which is responsible for marketing regulation in the USA, released an ‘Enforcement Policy Statement on Marketing Claims for Over-the-Counter (OTC) Homeopathic Drugs’ that changes the national marketing landscape.⁷¹ Under this new policy, the FTC prohibits claims of efficacy and safety for OTC homeopathic drugs that are not supported by ‘competent and reliable’ scientific evidence, unless the promotion also clearly communicates that there is ‘no scientific evidence that the product works’ and that the product’s claims are ‘based only on theories of homeopathy from the 1700s that are not accepted by most modern medical experts’.⁷² These statements must stand out on the product and must be featured in close proximity to the claim of efficacy.⁷³

There are many other examples where regulatory bodies in other jurisdictions have used truth-in-advertising policies to curb the proliferation of unproven claims and therapies.⁷⁴ This approach seems likely to help create an expectation for a more

⁷⁰ Health Canada, *The Distinction Between Advertising and Other Activities*, Aug. 2005, http://www.hc-sc.gc.ca/dhp-mps/advert-publicit/pol/actv_promo_vs_info-eng.php (accessed Jan. 31, 2017).

⁷¹ United States of America Federal Trade Commission, *Enforcement Policy Statement on Marketing Claims for OTC Homeopathic Drugs*, https://www.ftc.gov/system/files/documents/public_statements/996984/p114505_otc_homeopathic_drug_enforcement_policy_statement.pdf (accessed Jan. 31, 2017).

⁷² *Id.*; see also Federal Trade Commission, *FTC Issues Enforcement Policy Statement Regarding Marketing Claims for Over-the-Counter Homeopathic Drugs*, Nov. 15, 2016, <https://www.ftc.gov/news-events/press-releases/2016/11/ftc-issues-enforcement-policy-statement-regarding-marketing> (accessed Jan. 31, 2017).

⁷³ *Id.*

⁷⁴ For example, the Philippines directly regulates unproven stem cell claims: Philippines Department of Health, *Administrative Order No. 2013-0012 – Rules and Regulations Governing the Accreditation of Health Facilities Engaging in Human Stem Cell and Cell-Based or Cellular Therapies in the Philippines*, Mar. 18, 2013, http://www.fda.gov.ph/attachments/article/38686/STEM_CELL_AO.pdf (accessed Jan. 31, 2017); see also new rules for manufacturers of traditional medicinal products in India: Sumi Sukanya Dutta, *Crackdown on Magic Cure Ad–Govt to Write to States After Ministry Push*, THE TELEGRAPH (Calcutta, India) Dec. 12, 2016, http://www.telegraphindia.com/1161212/jsp/nation/story_124265.jsp#.WFH0mqIrl5k (accessed Jan. 31, 2017); in Australia, resources have been devoted to multiple investigations to address dangerous and unsubstantiated claims made by chiropractors—see Natalie MacGregor, *Crackdown on ‘Dangerous’ Claims Made by Rogue Chiropractors in Victoria*, ABC NEWS, May 6, 2016, <http://www.abc.net.au/news/2016-05-06/chiropractors-rogue-victoria-dangerous-health/7389484> (accessed Jan. 31, 2017); see also recent notice from the UK Advertising Standards Authority to homeopaths, which demands they stop making false claims of efficacy: Advertising Standards Authority, *Advertising Standards for Homeopathy*, [UK Ad Standards 1], Sept. 29, 2016, <https://www.asa.org.uk/News-resources/Media-Centre/2016/Advertising-standards-for-homeopathy.aspx#.V-OHOYWChIV> (accessed Jan. 31, 2017); these notices were necessary due to the UK Society of Homeopaths’ failure to enforce advertising standards that were clarified in a 2013 decision: Advertising Standards Authority, *ASA Ruling on Society of Homeopaths*, [UK Ad Standards 2] July 3, 2013, https://www.asa.org.uk/Rulings/Adjudications/2013/7/Society-of-Homeopaths/SHP_ADJ_157043.aspx (accessed Jan. 31, 2017).

science-informed approach to marketing in this context. Still, merely creating advertising policy and enforcing it upon receipt of a complaint is unlikely to result in immediate widespread compliance, especially since the accused parties sometimes subsequently refuse to comply.⁷⁵ Therefore, Health Canada and the Competition Bureau should adopt proactive enforcement methods that actively identify and eliminate false and misleading claims and practices, using successes in other jurisdictions as a template.

2. Self-regulation

Naturopaths present themselves as evidence-based, and governments have echoed this position.⁷⁶ The provincial health professional and naturopathy statutes and regulations by which naturopaths are granted self-regulation (as is the case in British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario) create provincial colleges of naturopathy that are typically responsible for setting standards of practice and for enforcing them among members.⁷⁷ The Ontario Naturopathy Act's Professional Misconduct Regulation, for example, states that it is an act of professional misconduct to recommend or provide a treatment 'the member knows or ought to know is unnecessary or ineffective'.⁷⁸ Further listed acts of professional misconduct include 'making a claim respecting a drug, substance, remedy, treatment, device or procedure other than a claim that can be supported as reasonable professional opinion', and 'permitting the advertising of the member or his or her practice in a manner that is false or misleading or that includes statements that are not factual or verifiable'.⁷⁹

Based on these regulations, it would be logically consistent to take disciplinary action against members who give their clients false information about vaccines and who suggest unproven or disproven alternatives. Yet, there is little evidence that appropriate enforcement takes place. Indeed, a national journalist recently reviewed the websites of approximately 300 active naturopaths in Toronto, and found that almost half of them breached the advertising rules of the College of Naturopaths of Ontario.⁸⁰ Moreover,

⁷⁵ Sasha Hall & Tiana Moutafis, *Whacking Moles, a Pharmacist and the TGS*, AUSTRALIAN JOURNAL OF PHARMACY, Dec. 14, 2016, <https://ajp.com.au/columns/opinion/whacking-moles-pharmacist-tga/> (accessed Jan. 31, 2017).

⁷⁶ College of Naturopathic Physicians of British Columbia, *Scope of Practice for Naturopathic Physicians: Standards, Limits and Conditions for Prescribing, Dispensing and Compounding Drugs*, Sept. 23, 2010, <http://www.cnpbc.bc.ca/wp-content/uploads/Scope-of-Practice-for-Naturopathic-Physicians-Standards-Limits-and-Conditions-for-Prescribing-Dispensing-and-Compounding-Drugs.pdf> (accessed Jan. 31, 2017); Jen Gerson, *Alberta Creates College to Oversee Naturopathic Doctors, Stops Short of Endorsing Treatments*, NATIONAL POST, July 26, 2012, <http://news.nationalpost.com/news/canada/alberta-creates-college-to-oversee-naturopathic-doctors-stops-short-of-endorsing-treatments> (accessed Jan. 31, 2017).

⁷⁷ Alberta Health Professions Act, RSA 2000, c H-7; BC Health Professions Act, RSBC 1996, c 183; Naturopathy Act, RSS 1978, c N-4; Naturopathy Act, SO 2007, c10, Sch P; Professional Misconduct, O Reg 17/14 [Ont Reg].

⁷⁸ Ont Reg, supra note 77, at s.1.7.

⁷⁹ *Id.*, at ss.1.26-1.27.

⁸⁰ Carly Weeks, *Are We Being Served by the Regulation of Naturopaths? Not if Patients Are Still Being Misled*, THE GLOBE AND MAIL, Apr. 28, 2016, <http://www.theglobeandmail.com/life/health-and-fitness/health/canadian-naturopaths-need-to-follow-the-rules-if-they-want-regulation/article29785140/> (accessed Jan. 31, 2017); The College of Naturopaths of Ontario, *Standards of Practice, Practice Guideline, Professional Policies*,

since Alberta legislated self-regulation in 2012, the provincial college has engaged in only one investigation of misconduct by a member, in the context of the highly publicized death of child Ezekiel Stephan.⁸¹ A similar lack of policy enforcement by self-regulating bodies of alternative practitioners has been observed in other jurisdictions, including Australia and New Zealand.⁸²

The regulatory bodies that govern and represent the profession have, to date, largely been silent or have taken remarkably soft positions on vaccination. For example, of all the naturopath college websites in Canada, only the College of Naturopaths of Ontario site contains content that speaks directly to homeopathic vaccines and vaccines in a way that restricts allowable claims to those that are scientifically proven.⁸³ In this case, Health Canada's position is merely reiterated.⁸⁴

Conversely, the British Columbia Naturopathic Association has published a position paper on vaccination that supports a vaccine-hesitant approach.⁸⁵ The document is an excellent example of the ambiguous attitude of the naturopathic community to vaccines. It purports to explain the advantages and disadvantages of vaccination, at one point implying that the risks are equivalent to the benefits. The document notes that vaccine preventable 'diseases can cause injury or death in a less than robustly healthy infant or child', then states that '[i]t's of equal importance to note that all of the vaccines for these diseases can also cause injury or death in a less than robustly healthy infant or child, and this is where most of the parental concerns arise'.⁸⁶ It contains a list of unsubstantiated concerns such as the alleged presence of toxic preservatives and the unnatural route of entry of vaccines.⁸⁷ The document suggests that vaccines are helpful only because without them 'parents run the risk of their child encountering a virile disease agent at a time when their child's immune system may be compromised by stressors such as injury and poor nutrition'.⁸⁸ The implication seems to be that one can build up

http://www.collegeofnaturopaths.on.ca/CONO/Resources/Professional_Standards_Policies_and_Guidelines/CONO/Resources/Professional_Standards_Policies_and_Guidelines/Professional_Standards.aspx?hkey=930bfc83-1add-466d-be0f-8cb95ed002ca (accessed Jan. 31, 2017).

⁸¹ Wendy Stueck, *Child's Death Becomes Lightning Rod: Regulations for Naturopaths Vary Widely Across Canada—and Few Have Faced Disciplinary Sanctions*, Reports Wendy Stueck, THE GLOBE AND MAIL, June 25, 2016, <http://www.theglobeandmail.com/news/alberta/ab-bc-naturopaths/article30616727/> (accessed Jan. 31, 2017).

⁸² See, for example, Mark Hanna & Mark Honeychurch, *Chronic Misleading Online Advertising by Chiropractors*, 129 N Z MED. J. 91 (2016); see also similar issues among self-regulating chiropractors in Australia: Melissa Davey, *Chiropractors Using 'Unacceptable' False Advertising, Says Board*, THE GUARDIAN, Mar. 7, 2016, <https://www.theguardian.com/australia-news/2016/mar/07/chiropractors-using-unacceptable-false-advertising-says-board> (accessed Jan. 31, 2017); see also UK Ad Standards 1, *supra* note 74 and UL Ad Standards 2, *supra* note 74.

⁸³ Mary-Ellen McKenna, *Regulatory Guidance: Nosodes and Homeopathic Labelling*, THE COLLEGE OF NATUROPATHS OF ONTARIO, Oct. 14, 2015, http://www.collegeofnaturopaths.on.ca/CONO/Members/Professional_Practice/Practice_Advice/Nosodes_and_Homeopathic_Labelling/CONO/Members/Professional_Practice/Practice_Advice/Nosodes_and_Homeopathic_Labelling.aspx?hkey=11cb689e-77fd-4b22-ae9b-a992d4f6fcfc (accessed Jan. 31, 2017).

⁸⁴ Health Canada Labeling, *supra* note 66.

⁸⁵ British Columbia Naturopathic Association, *Vaccination Position Paper*, <http://www.bcna.ca/about-bcna/articles/bcna-vaccination-position-paper/> (accessed Jan. 31, 2017).

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

the immune system ‘naturally’ to prevent serious vaccine-preventable diseases, which is scientifically inaccurate.

Moreover, though it is not a self-regulating body, the Canadian Association of Naturopathic Doctors indicates on its website that, at its most recent 2015 biennial conference held for the purpose of educating its naturopath membership, it featured a presentation in which the speaker claimed that ‘vaccines do not confer immunity’, that homeopathic vaccines can ‘help treat miasms created by vaccinations’, and that ‘acute diseases can improve the constitution’.⁸⁹

Documents and claims of this nature are clearly contradictions of claims made by naturopathic institutions that the practice is evidence-based. Along with the noted lack of enforcement of self-proclaimed standards by colleges, it is reasonable to conclude that self-regulation is, at best, ineffective, and, at worst, a podium upon which naturopaths can legitimize scientifically inaccurate perspectives.⁹⁰ As such, increased regulatory restrictions, a related reduction in powers of self-regulation, and third party oversight of disciplinary functions could all contribute to curbing the harmful representations made by naturopaths about vaccination.

3. Common law disclosure requirements

Informed consent has many components, but importantly requires the disclosure of information about the proposed intervention, including any material, special and unusual risks, and potential treatment alternatives.⁹¹ Indeed, disclosure must include anything a reasonable person in the patient’s position would want to consider before giving consent.⁹² The standard of disclosure is the same regardless of whether the treatment is conventional or alternative in nature.

Naturopaths are increasingly positioning themselves as primary care providers.⁹³ As health care providers, they are legally responsible to uphold existing common law standards of informed consent.⁹⁴ The fact that they are not physicians does not exempt them from this responsibility. Indeed, the courts have applied the duty of disclosure to

⁸⁹ Ingrid Pincott, *03 May Health Fusion 2015 Conference Review*, CANADIAN ASSOCIATION OF NATUROPATHIC DOCTORS <http://www.cand.ca/health-fusion-2015-conference-review/> (accessed Nov. 25, 2016). After we publicized these comments, the CAND removed this content from their website.

⁹⁰ As we have written about in the past, we do not support the creation of self-regulating colleges for complementary and alternative practitioners whose interventions are not evidence based. See Blake Murdoch, Robyn Hyde-Lay & Timothy Caulfield, *Commentary: An Examination of the Public Justifications for the Expansion of Canadian Naturopaths’ Scope of Practice*, 19HEALTH L. J. 215 (2011).

⁹¹ *Reibl v. Hughes*, [1980] 2 S.C.R. 880, 1980 CanLII 23 (SCC); *Hopp v. Lepp*, [1980] 2 S.C.R. 192, 1980 CanLII 14 (SCC); see also Timothy Caulfield, *Commentary: The Law, Unproven CAM and the Two-Hats Fallacy: Guest Editorial*, 17 FOCUS ALTERNATIVE & COMPLEMENTARY THERAPIES 4 (2012), [Two Hats Fallacy].

⁹² *Hopp v. Lepp*, *supra* note 91, at 206 (citing *Halushka v. University of Saskatchewan* (1965), 53 D.L.R. (2d) 436).

⁹³ Ontario Association of Naturopathic Doctors, *FAQs*, <http://oand.org/naturopathic-medicine/faqs/> (accessed Jan. 31, 2017); see also Canadian Association of Naturopathic Doctors, *What is Naturopathic Medicine?*, <http://www.cand.ca/about-naturopathic-medicine/> (accessed Jan. 31, 2017).

⁹⁴ ELLEN PICARD & GERALD ROBERTSON, *LEGAL LIABILITY OF DOCTORS AND HOSPITALS IN CANADA* (4th ed. 2007); Patricia Peppin, *Informed consent*, in *CANADIAN HEALTH LAW AND POLICY* (Jocelyn Downie, Timothy Caulfield & Colleen Flood, 4th ed. 2011).

other practitioners such as nurses, chiropractors, and even veterinarians.⁹⁵ As such, if a naturopath wishes to recommend a homeopathic vaccine instead of a real vaccine, he or she has a legal obligation to disclose existing evidence (known to him/her) that the homeopathic vaccine does not work, and that there is a highly efficacious alternative in the form of a vaccine. Where a naturopath does not make these disclosures, he or she may be guilty of negligence. Deception or lack of disclosure is not legally justified by the potential benefits of the placebo effect.⁹⁶ It should be noted that medical doctors likely have a similar obligation if they wish to refer to unproven practitioners like naturopaths.⁹⁷

The law is quite settled in this area, but policing of those who breach these legal standards appears to be scarce in the context of complementary and alternative medicine. So while the existing consent law is likely not a tool that can be easily used to police the misleading claims on websites, it can be used to enforce a science-based standard of disclosure that may help to counter the misinformation.⁹⁸ In addition, if this standard becomes more well known, it may help to promote a more science-informed approach, and aggrieved patients may be more likely to pursue remedies.

The common law can potentially provide remedies, in parallel with s.36 of the *Competition Act*, to patients and consumers who act on misleading advertising to their detriment. The torts of deceit and fraudulent misrepresentation can be used to obtain remedies for loss resulting from misleading advertising. Indeed, an ongoing lawsuit in the B.C. Supreme Court about alleged misrepresentation by a cold and flu remedy manufacturer includes a claim under the *Act* as well as in tort.⁹⁹ While there is no Canadian case law directly on point, it seems reasonable to conclude that this law would apply to statements made on practitioner websites and, therefore, could serve as a potential regulatory tool in the fight against the spread of misinformation. The tort of negligent misrepresentation requires proof of five elements. First, there must be a duty of care based on a 'special relationship' between the representor and representee. Second, the misrepresentation must be untrue, inaccurate, or misleading. Third, the representor must have acted negligently in making the misrepresentation. Fourth, the representee must have relied in a reasonable manner on the negligent misrepresentation. Fifth, the reliance must have been detrimental to the representee.¹⁰⁰ Fraudulent representation is different and requires proof of a specific intent to deceive.¹⁰¹ Given the lack of scientific evidence for recommending against vaccination and for recommending homeopathic vaccination, it is likely that naturopaths making such suggestions are engaging in

⁹⁵ Robertson, *supra* note 94, at 172; Mason v. Forgie, 1986 CanLII 3928 (NB C.A.); Heughan v. Sheppard, [2000] O.J. No 2188 (S.C.J.); Southwhite Stables Inc. v. Ingram Veterinary Services Ltd. (1984), 26 A.C.W.S. (2d) 159 (Q.B.); More v. Haines, [1995] O.J. No. 1357 (Gen. Div.); Melnychuk v. Ronaghan (1999), [1999] A.J. No. 660, 1999 CarswellAlta 469 (C.A.).

⁹⁶ Caulfield, Two-Hats Fallacy, *supra* note 91, at 5.

⁹⁷ Timothy Caulfield, Ubaka Ogbogu & Gerald Robertson, *Commentary: The Law, Unproven CAM and the Referral Challenge*, 18 FOCUS ALTERNATIVE & COMPLEMENTARY THERAPIES 1 (2013).

⁹⁸ As with the regulatory bodies for physicians, one would hope that this standard would also be adopted by naturopath regulatory entities.

⁹⁹ See *supra* note 65.

¹⁰⁰ Enercare v. Energy Canada, 2016 ONSC 5804 (CanLII); see also EnerWorks Inc. v. Glenbarra Energy Solutions Inc., 2012 ONSC 414 (CanLII).

¹⁰¹ See Queen v. Cognos Inc., [1993] 1 S.C.R. 87, 1993 CanLII 146 (S.C.C.).

negligent misrepresentation—though, to date, we are unaware of any negligent misrepresentation jurisprudence in Canada focused on representations by a naturopath.

4. Potential criminal implications

A naturopath who recommends homeopathic vaccines or who counsels against conventional vaccination could potentially be criminally negligent. Section 219 of the Criminal Code of Canada [Code] states that '[e]very one is criminally negligent who, in doing anything, or in omitting to do anything that it is his duty to do, shows wanton or reckless disregard for the lives or safety of other persons'.¹⁰² Subsection (2) goes on to state that, for the purposes of criminal negligence, 'duty' means a duty imposed by law;¹⁰³ a legal duty in this context is one arising from statute or from the common law.¹⁰⁴ The Code creates a legal duty for anyone 'who undertakes to administer surgical or medical treatment to another person or to do any other lawful act that may endanger the life of another person' to 'have and to use reasonable knowledge, skill and care in so doing'.¹⁰⁵ This duty is a uniform standard, meaning the requirement of reasonable knowledge, care, and skill is based on the treatment or lawful act in question, not on the level of experience of the person administering it.¹⁰⁶ As such, naturopaths offering services similar to medical doctors will be held to the same standards under the Code.

Criminal negligence occurs due to the 'failure to direct the mind to a risk of harm which [a] reasonable person would have appreciated'.¹⁰⁷ Fault is premised on the wrongful act involved, rather than the guilty mind of the perpetrator.¹⁰⁸ Naturopaths counseling patients against vaccination are arguably undertaking a lawful act that endangers the life of another person (especially in the case of a young child, elderly individual, or immunocompromised person), breaching s.216 of the Code.¹⁰⁹ In addition, since relevant legal duties include those arising through the common law,¹¹⁰ naturopaths could alternatively be criminally negligent for failing to satisfy the aforementioned duty of reasonable disclosure inherent to standard of care in tort. In the context of a community with diminished vaccination rates, either failure could be considered wanton or reckless, as it may greatly and needlessly endanger the patient. However, under the standard for criminal negligence, the trier of fact must 'assess whether the accused's conduct, in view of his or her perception of the facts, constituted a marked and substantial departure from what would be reasonable in the circumstances'.¹¹¹ This is similar to the standard of gross negligence, so ultimately a finding of criminal negligence would require meeting a rather onerous threshold.¹¹²

¹⁰² Criminal Code, R.S.C. 1985, c C-46, s.219 [Code].

¹⁰³ *Id.* at s.219(2).

¹⁰⁴ *R v. Thornton*, 1991 CanLII 7212 (ON C.A.), *aff'd* [1993] 2 S.C.R. 445.

¹⁰⁵ Code, *supra* note 102, at s.216.

¹⁰⁶ *R v. Creighton*, 1993 CanLII 61 (S.C.C.), [1993] 3 S.C.R. 3 [*Creighton*].

¹⁰⁷ *Id.*

¹⁰⁸ *R v. J.F.*, [2008] 3 S.C.R. 215, 2008 S.C.C. 60 (CanLII).

¹⁰⁹ Code, *supra* note 102, at s.216.

¹¹⁰ *Thornton*, *supra* note 104.

¹¹¹ MORRIS MANNING & PETER SANKOFF, *CRIMINAL LAW* 1004 (5th ed. 2015).

¹¹² *Id.* at 1005.

CONCLUSION

There is reason for concern over the decrease in vaccination rates in Canada. While numerous factors coalesce to cause this complex phenomenon, negative or hesitation-inducing representations of vaccines by naturopaths and other alternative practitioners seem likely to play an important role. Our survey of naturopath websites in Alberta and B.C. demonstrates the not-uncommon presence of misleading positions on vaccines. The information presented here exists on a continuum. On one end are examples of websites subtly raising issues over vaccine safety and effectiveness. On the other are explicit anti-vaccination perspectives raising suspicions and fears. Vaccination alternatives offered by these naturopathic websites are, without exception, unproven or disproven, and reliance on these products in lieu of vaccines creates a false sense of immunity while exposing both the individual and the surrounding community to potential harm.

It is essential that we combat these dangerous misrepresentations. Various legal and policy approaches could be taken to address this issue. The Competition Bureau and Health Canada could modify advertising standards to prohibit all clearly unsubstantiated treatment and performance claims online, and the latter could even act to prevent entirely the sale of demonstrably ineffective natural health products like homeopathic vaccines. After all, these products need not be intrinsically harmful to ultimately cause harm. Provincial regulation has helped to legitimize naturopaths, making their claims more persuasive.¹¹³ It would be wise to roll back the scope of naturopath self-regulation, and to establish third party oversight and management of disciplinary bodies.¹¹⁴ If naturopaths were truly an evidence-based profession and held to a science-informed standard, one would expect the relevant regulatory bodies to take action on the misleading advertising. Naturopaths genuinely interested in the science of health care would logically also be open and welcoming to such changes. The scope of offerings available for naturopaths to advertise would certainly be diminished, and these changes would likely entail a ban on naturopaths providing any advice or service relating to vaccination, other than a referral to an appropriate, science-informed, healthcare provider. As a result, we could expect an improvement in the accuracy of representations made to Canadians trying to make difficult health care decisions. Misrepresentations relating to vaccination can be matters of life and death. As such, it is essential to employ the various legal tools that could be used to help address this dangerous social trend.

¹¹³ Naturopaths regularly reference the fact that they are government regulated when advertising their legitimacy. For example, 'Naturopathic physicians are licensed primary care providers; they are the equivalent of a GP in the realm of alternative medicine. They are regulated just as MDs, nurses and other health professionals are licensed and regulated'. Anita Komonski, *Frequently Asked Questions*, NATUROPATHIC PHYSICIAN <http://www.drkomonski.com/faq> (accessed Jan. 31, 2017).

¹¹⁴ While describing the exact nature of this oversight mechanism is beyond the scope of this paper, this could be a government-created entity that monitors claims made by alternative providers. Given that it seems impossible for science-free providers to self-regulate in a manner that would impose a science-informed standard, an independent third party seems a logical way forward. To be clear, we are not endorsing the existence of these regulatory bodies. Indeed, Caulfield has argued that their creation was a mistake. See, for example, <http://news.nationalpost.com/full-comment/timothy-caulfield-dont-legitimize-the-witch-doctors> (accessed Jan. 31, 2017).

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