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"One of the greatest medical success stories:" Physicians and nurses' small stories about vaccine knowledge and anxieties

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ABSTRACT

In recent years, the Canadian province of Alberta experienced outbreaks of measles, mumps, pertussis, and influenza. Even so, the dominant cultural narrative maintains that vaccines are safe, effective, and necessary to maintain population health. Many vaccine supporters have expressed anxieties that stories contradicting this narrative have lowered herd immunity levels because they frighten the public into avoiding vaccination. As such, vaccine policies often emphasize educating parents and the public about the importance and safety of vaccination. These policies rely on health professionals to encourage vaccine uptake and assume that all professionals support vaccination.

Health professionals, however, are socially positioned between vaccine experts (such as immunologists) and non-experts (the wider public). In this article, I discuss health professionals' anxieties about the potential risks associated with vaccination and with the limitations of Alberta's immunisation program. Specifically, I address the question: If medical knowledge overwhelmingly supports vaccination, then why do some professionals continue to question certain vaccines? To investigate this topic, I interviewed twenty-seven physicians and seven nurses. With stock images and small stories that interviewees shared about their vaccine anxieties, I challenge the common assumption that all health professionals support vaccines uncritically. All interviewees provided generic statements that supported vaccination and Alberta's immunisation program, but they expressed anxieties when I asked for details. I found that their anxieties reflected nuances that the culturally dominant vaccine narrative overlooks. Particularly, they critiqued the influence that pharmaceutical companies, the perceived newness of specific vaccines, and the limitations of medical knowledge and vaccine schedules.

1. Introduction

> But … the patient I saw with the seizure, will we ever know if it was related to that [vaccine], or was it just bad timing because you got a cold and, like, you just won't know. But in the end, one person who gets a seizure who in the end is fine or the arthritis … I was reading something about, which one was associated with … shoot, was it sleep?

A young family physician who I interviewed, and who I will call Anita, spoke about what she perceived to be possible risks associated with vaccination. She told me about a child in her practice who had a seizure in the days following a vaccination, but who recovered fully. After this story, she argued that it was important to reap known benefits of vaccination in the face of what she said were unknown, albeit relatively mild, risks: "Well, I'm sure there's stuff that we don't know, but again it's risk-benefit." Anita's concerns resonated with the perspectives of many of the twenty-seven physicians and seven nurses who I interviewed.

While I recruited participants for this project, measles, pertussis (whooping cough), and influenza were spreading across Alberta. Albertan newspapers related the spread of vaccine-preventable diseases to dwindling vaccination rates. In Edmonton, Alberta's capital city, public transit advertisements portrayed newspaper headlines from the 1940s and 1950s about disease outbreaks—such as rubella and polio—with the message "keep the past where it belongs." Similarly, posters at the University of Alberta displayed students dressed as knights protecting others by receiving the recommended influenza vaccine. These stories draw on the dominant cultural vaccine narrative, which describes how vaccines eradicated smallpox and controlled deadly diseases, such as polio and measles (Heller, 2008).

This dominant narrative, which Heller (2008) called "the vaccine narrative," offers a widely understandable account of the otherwise esoteric medical knowledge that maintains the authority of scientific medicine. People often express health knowledge, including vaccine beliefs as contemporary legends, personal narratives, or some combination of these (Kitta, 2012, p. 3). Heller (2008) argued that the vaccine narrative sanitizes many of controversies and errors that accompanied

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the creation of herd immunity and containment of disease.

Most studies that analysed narratives about vaccination focused on popular and patient understandings, which often contradict Heller (2008) "vaccine narrative" (Kitta, 2012; Poltorak et al., 2005). These studies offered valuable insights, primarily into the information that parents, especially mothers, use to make decisions regarding vaccination (Hobson-West, 2003, 2007; Keane et al., 2005; Poltorak et al., 2005; Reich, 2014; Skea et al., 2008). Rarely have studies investigated if and how divergent vaccine narratives relate to vaccine anxieties among the health professionals who provide vaccine advice. As such, this project addressed the question: How do health professionals' narratives reflect their position between vaccine experts, critics, and the wider public? What small stories do they tell that support or contradict Heller (2008) "vaccine narrative?"

In this article, I discuss how physicians and nurses' narratives about vaccine anxieties reflected nuances that are absent from the culturally dominant vaccine narrative. Specifically, they critiqued the influence of pharmaceutical companies, the perceived newness of certain vaccines, and the limitations of medical knowledge and vaccine schedules.

Overwhelmingly, I found physicians and nurses responded to my questions about vaccine risks by using personal stories that conveyed the importance of vaccines, or with explanations that the benefits of vaccination outweigh the risks. Nonetheless, when I asked about details and about specific vaccines, I noted anxieties in participants' stories. These anxieties relate to opinions of the role of the pharmaceutical industry, perceptions of whether the knowledge backing specific vaccines is new or established, and aspects of Alberta's vaccine schedule. First, I describe the context within which interviewees worked—including the specific context of Alberta and the wider context within which vaccine narratives circulate. Second, I review how I implemented this research project. Third, I share my findings regarding interviewees' stories about the pharmaceutical industry's influence, the newness of vaccines, and government policies. Finally, I conclude by explaining how physicians and nurses expressed some anxieties about specific vaccines that reflected contradictions within the vaccine narrative, but embraced their roles promoting vaccination.

2. The vaccine narrative, ambivalence, and Alberta

The problems surrounding vaccine compliance within Alberta reflect those in other parts of the world that are experiencing a resurgence of vaccine-preventable diseases. Culturally dominant understandings in most of Western Europe and North America support vaccination (Heller, 2008; Keane et al., 2005).

Indeed, the Canadian and Albertan government vaccine guidelines reiterate and support Heller's (2008) vaccine narrative. For example, the *Alberta Immunisation Strategy* (2007–2017) stated.

> Immunisation has often been cited as one of the greatest medical success stories in human history.… In fact, research shows that with the exception of clean drinking water, no other human intervention surpasses the impact immunizations have had on reducing infectious disease and mortality rates—not even antibiotics (Alberta Health, 2007, p. 3).

Alberta presented itself implementing one of the best immunisation programs in Canada (Alberta Health, 2007, p. 3). Similarly, the *Canadian Immunisation Guide* contextualized the vaccine narrative as a continuous story in which medical science will overcome disease: "Eradication of smallpox has been achieved. Currently, global efforts are directed at the eradication of polio and the elimination of measles. Ongoing immunisation programs with high vaccine coverage are needed" (PHAC, 2006, p. 3). Both guides downplayed contradictions to the vaccine narrative and depicted the eradication of more diseases as an inevitable outcome of vaccine uptake, effective vaccine dissemination, and medical progress.

These guides presented healthcare workers, vaccinated patients, and Canada's provincial and territorial governments as the good guys who maintain adequate herd immunity levels (see Crompton, 2015, p. 7; Mah, 2009, p. 23). They mentioned, but underemphasized, barriers to accessing vaccination, which occur even when the government covers the cost of vaccination (Crompton, 2015). For instance, children in rural, indigenous, and lower-income communities tend to be under-vaccinated (Crompton, 2015, pp. 12; 41; Mah, 2009). Rather than build solutions to these issues, these guides characterized people who decide against vaccination as the primary barrier to achieving high immunisation rates.

In Alberta, Public Health nurses provide childhood vaccines at Public Health Centres and schools, whereas physicians and pharmacists can update adult vaccines and influenza vaccines for patients over nine-years-old. Government guidelines about raising immunisation rates in Albertan communities have centred on assumptions about health professionals' knowledge and support of national immunisation goals. For instance, the *Alberta Immunisation Strategy* (2007) stated that health providers are responsible to educate new health professionals about vaccination and to inform patients and parents (Alberta Health, 2007, p. 9). These guides rely on educating patients and parents into believing the vaccine narrative. This approach is supported by studies that have found health professionals (especially family physicians) are parents' primary information sources about vaccination (Leask et al., 2006). Even so, many parents somewhat distrust medical information and want health professionals to provide more information regarding vaccination (Cassell et al., 2006, p. 788; Petts and Niemeyer, 2004, p. 11).

Furthermore, previous research demonstrated that many health professionals fall between wholly supporting vaccines and doubting their safety. For instance, Mike Poltorak and colleagues (2005, p. 713) observed that some health professionals refused certain vaccinations. Benjamin Levi (2007) revealed that medical residents often held inaccurate beliefs about vaccines. Deborah Gust et al., (2008, p. 574) found that vaccination uptake varied from 51% to 97% among different types of health practitioners. Nonetheless, Gust et al., (2008, p. 574) found that the majority (89%) of paediatricians and family doctors whom they surveyed recommended all vaccinations for children. These studies and others found variation in health professionals' anxieties about both vaccine refusal and vaccine acceptance (see Dubé et al., 2011, pp. 3178–3179; Loulergue et al., 2009, pp. 4242–4243; Smailbegovic et al., 2003). The question these studies did not answer is: how do health professionals explain their anxieties and uncertainties about specific vaccines?

Notably, Maryna Blazylevych (2011, p. 438) interviewed Ukrainian physicians who talked about bending immunisation policies, which mandate one hundred per cent vaccine uptake. Some recommended against certain vaccines for children with specific ailments, and especially immuno-compromised children for whom live vaccines could be unsafe. The physicians in Bazylevych's (2011) study associated some vaccines with the free market, pharmaceutical companies' financial motivations, and pharmaceutical companies' influence on government policy. Many of the physicians who Bazylevych (2011, p. 449) interviewed appeared ambivalent about state vaccine policies, the certainty of vaccine safety, and their role as "workers of the state."

The context of Alberta, emphasized neoliberal ideologies, patient choice, and education instead of compulsory vaccination. Nonetheless, similar to Bazylevych (2011), my project has highlighted the perceived role of pharmaceutical companies in the creation of vaccine schedules, opinions of whether the medical research backing vaccines is new or established, and culturally dominant explanations of vaccination.

Some vaccine anxieties reflect concerns about *pharmaceuticalisation* and the perceived influence of pharmaceuticalisation on government policy. Pharmaceuticalisation is the process through which the pharmaceutical market is expanding to promise health through medication instead of other interventions or lifestyle changes (Dew et al., 2016, p. 113; Williams et al., 2008). Pharmaceuticalisation differs from medicalisation, which "denotes the making or turning of something into a