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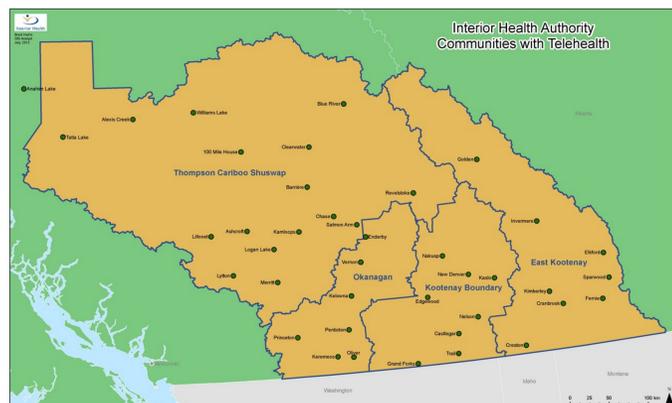
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INTRODUCTION

- What is telehealth/telemedicine?
 - Health care provided by means of telecommunications
 - Virtual consultations between healthcare professionals separated geographically
- What is the role of telemedicine in rural and remote communities?
 - The Canada Health Act: "the primary objective of Canadian health care policy is to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers".
 - Amelioration of the burden of cost, geography, personal physical ability, weather, safety concerns, and availability of physicians.
 - Rural communities are especially affected by aging as working-age adults often migrate to urban centers and adults of retirement age often settle in more rural settings.
 - 21.1% of Canadian live in rural areas, but only 9.4% of all physicians practice in rural areas.
- What are the barriers to telemedicine?
 - Privacy and confidentiality
 - User-friendliness
 - Infrastructures
 - Patient comfort
 - Healthcare providers not being aware of telehealth services
- What are the benefits to telemedicine?
 - Prevents the feeling of isolation by connecting people with public services
 - Economic savings
 - Safety
 - Ecological
 - Decreased wait-times

METHODS

- Review of the current data provided by the CMPA, Privacy Commissioner, and three BC Health Authorities to understand the current state of privacy and confidentiality breaches over the last five or more years.
- Through contacting Interior Health regarding their current telehealth initiatives, the 2011-2016 Clinical Telehealth Services Reports were sent which include the type of services provided along with a description and changes in their use over time.
- Using Nelson and the Kootenay Lake District Hospital as a prototype for a "teledermatology - naïve" community, we want to explore the current usage of telehealth services.



<https://www.interiorhealth.ca/YourCare/telehealth/PublishingImages/Telehealth-Communities.png>

- Figure 1. Current communities in the Interior Health Authority which are currently a part of the telehealth network. These communities are either providing or receiving various telehealth services.

RESULTS

- In terms of privacy and confidentiality, most of the breaches were not due to errors in texting (store-and-forward technology)
- Interior Health has many telehealth initiatives either connecting Nelson (and other district hospitals) to Trail (and other regional hospitals) and larger tertiary hospitals. Furthermore, Nelson is also a referral center for some telehealth initiatives for the smaller, more remote surrounding communities.
- In 2016, 7 new telehealth initiatives were started in Interior Health
- There was a 17% increase in the telehealth service usage in Nelson from 2015 to 2016.

	Years	# breaches	Due to inappropriate use	Due to lost devices	Due to texting error
Privacy Commissioner	2005-2015	200	Mentioned	Mentioned	None reported
CMPA	2011-2016	18	3	0	0
BC College of Physicians and Surgeons	2011-2016	26	uncertain	0	0
Vancouver Coastal Health	2011-2016	11	0	10	1
Providence Health Care	2014-2016	6	0	5	1
Northern Health	2012-2017	unknown	0	5	1

Table 1. Reported privacy and confidentiality breaches investigated by the respective parties.

Year	Adhoc Service Provided																Flagship Programs										TOTAL				
	Cardiac	ED	Edu	Epilepsy	For Psych	Hematology	Neurology	Op Stress Injury	Peds	Pulmonary	Resp	Speech	Sex Med	Surgical	Transplant	U/S	Urology	Unknown	Central Reg	Home Monitor	Neuro Clin	Onco/Gen	Pharm	Psych	Renal	Resp		Stroke	TEACC	Thoracic	Wound
2011		1							5			12	1						1597	11		12							110	169	1917
2012	1	2				1			2	2				7				9	2723	4		12		3					134	197	3404
2013	1		1				3		1	5		5		1				5	2058	4		15	46	3		1		135	255	3546	
2014			2	4		3	6		1	3	4	1	1			1		27	2566	3		11	40	18	1	3		122	196	3013	
2015	6	1			1	5	8				34							31	1766		1	26	70			4	4	115	340	2412	
2016	4				1	5			6	18	1			1	2	13	17			2	2	63	18		67	1	20	129		363	

Table 2. Summary of the telehealth services provided to and sought in Nelson between 2011 and 2016.

DISCUSSION

- The use of technology is becoming more integrated into modern medicine. Despite the concern of breach, most people prefer the ease to telehealth over this minimal risk. Furthermore, we found that although technology is a part of modern practice, the majority of breaches result from lost or stolen devices, not communication errors.
- Although not one of the current telehealth modalities being provided, teledermatology has been shown to be an effective and safe way to diagnose and treat skin diseases. For people living in the Kootenay Boundary region, the closest dermatologist is in Kelowna.
- Although Interior Health provides a number of telehealth programs, there are still adhoc telehealth consultations. With the prevalence of telecommunication use in practice, there is likely unsanctioned consultations occurring using personal devices.

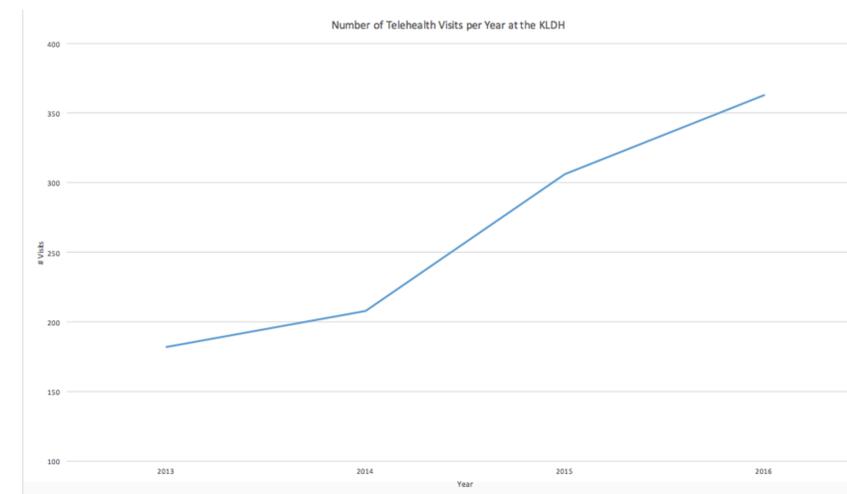


Figure 2. Changes in the number of telehealth visits at the Kootenay Lake District Hospital in Nelson, BC between 2011 and 2016. Of note, between 2014 and 2015, there was a 47% increase in consultations wither to or from this hospital using telehealth services.

CONCLUSIONS

- The vast majority of privacy and confidentiality breaches in all Health Authorities are due to faxing errors. The minority of breaches involving portable devices such as phones are mainly due to theft of improperly protected devices, not from dialing errors.
- The use of telehealth is expanding in Nelson both with the number of appointments, but also the various modalities being used and the specialities that are being provided.
- According to the Interior Health Telehealth Reports, Nelson is a teledermatology-naïve center with the closest dermatologist 350 km away.
- We would be interested in conducting a survey in Nelson of current dermatology service use, attitudes to telemedicine, and perceived need in the community.

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