

Appendix 4-Figures

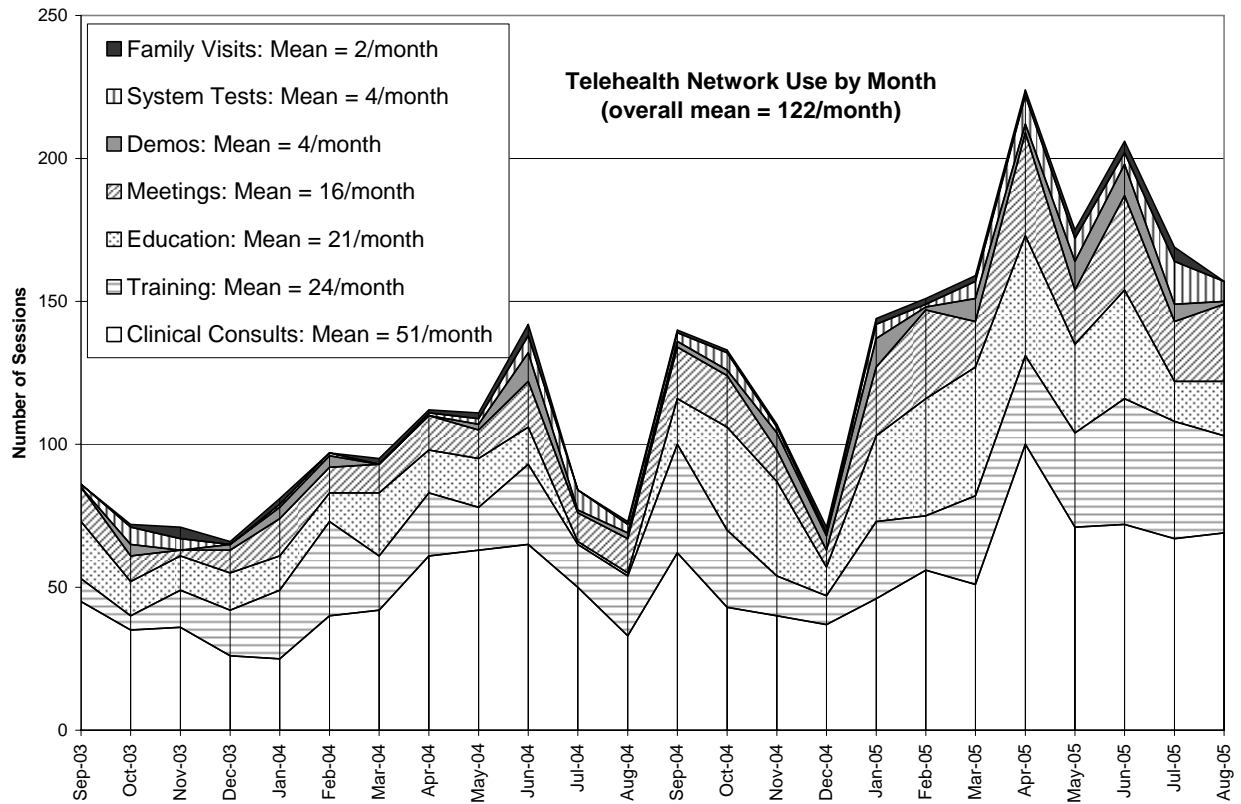


Figure 1. Type of use of Keewaytinook Okimakanak Telehealth Network since September 2003 (source: KOTH)

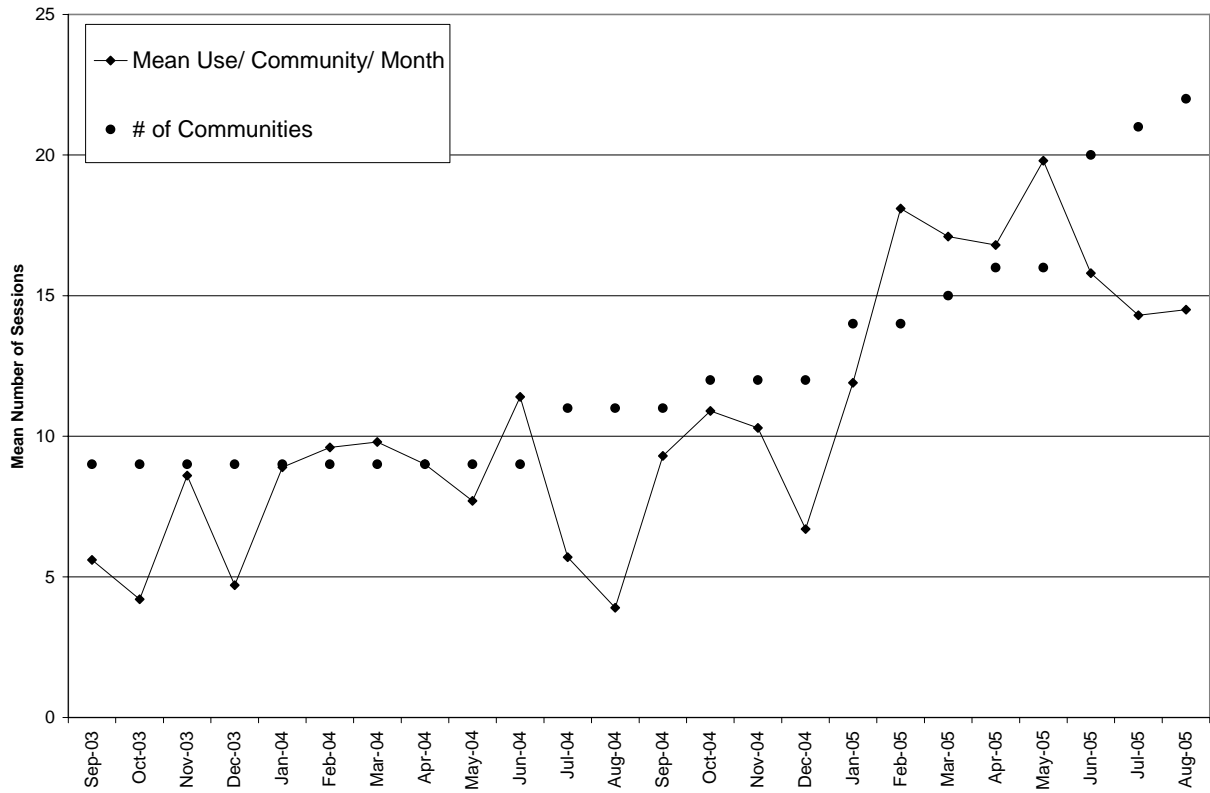


Figure 2. Number of First Nations communities and average use of Keewatinook Okimakanak Telehealth Network by these communities since September 2003 (source: KOTH)

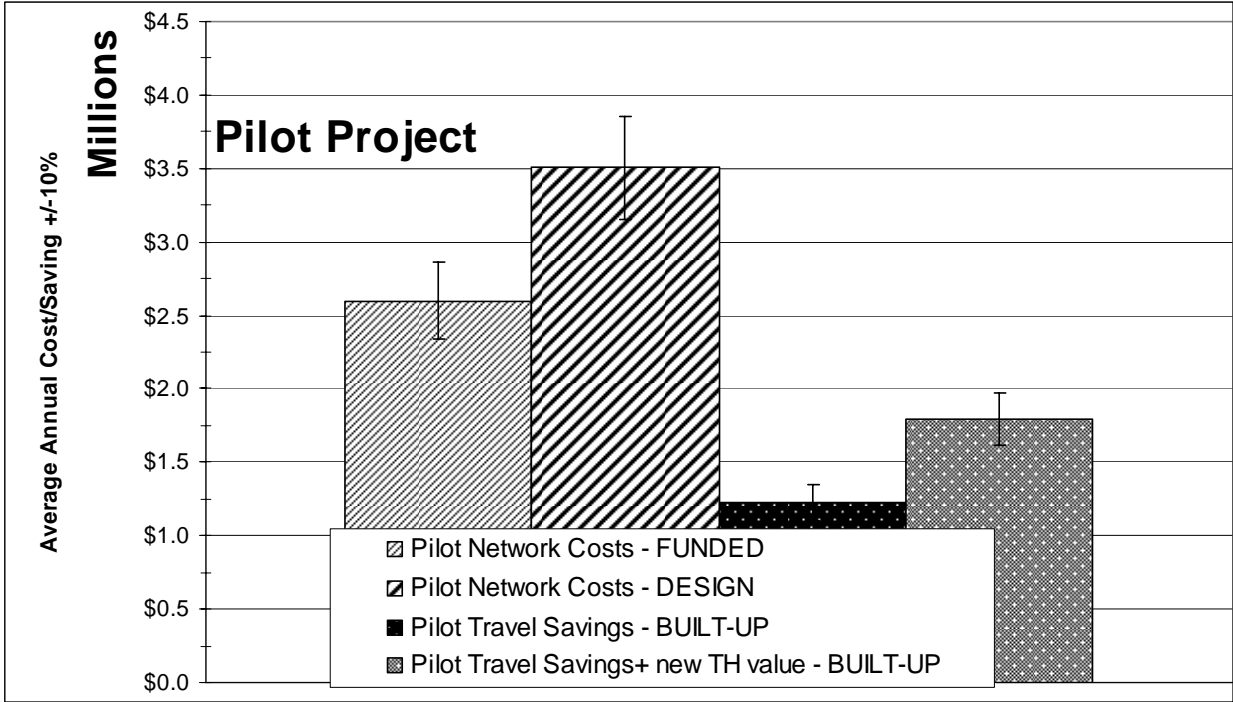


Figure 3. Summary of Economic Model Output for the Pilot Project showing average annual network costs (Funded amount and designed network costs) and estimated travel savings (averted travel savings only and averted travel savings plus monetary value of "new" telehealth).

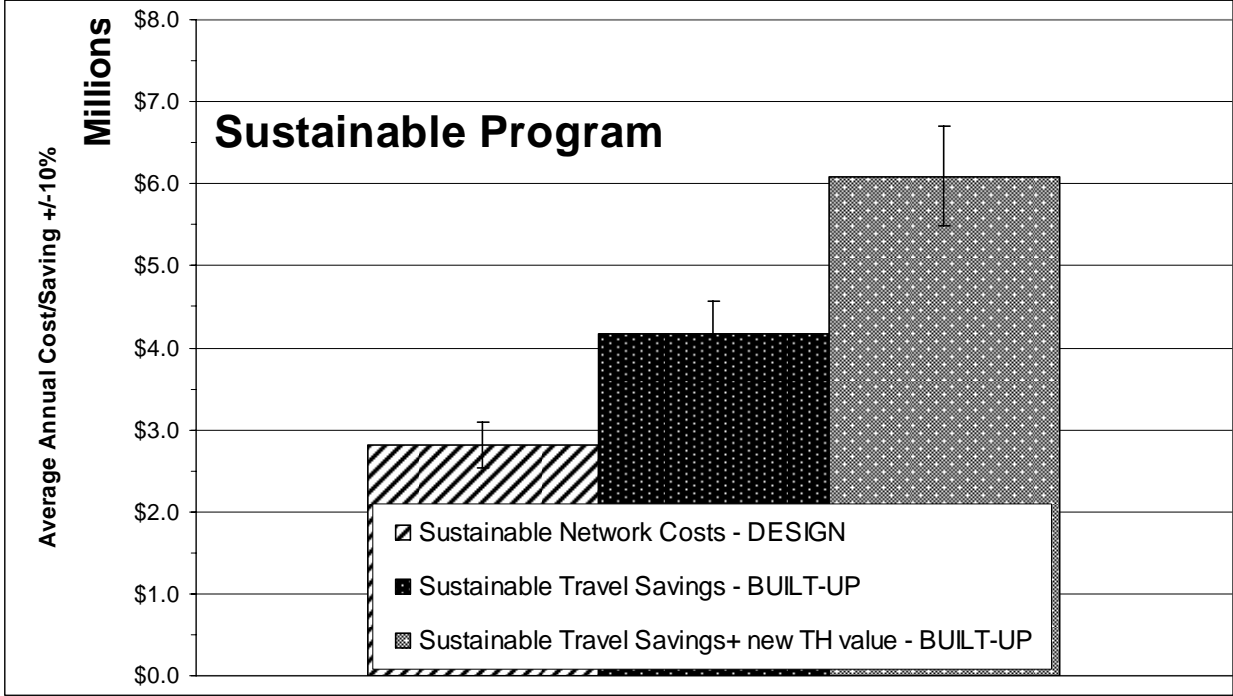


Figure 4. . Summary of Economic Model Output for the Sustainable Program showing average annual network costs (designed network costs only) and estimated travel savings (averted travel savings only and averted travel savings plus monetary value of "new" telehealth).

Appendix 4-Tables

Table 1. Selected characteristics of First Nations communities

Legal Entity (recognized by INAC) ¹	Tribal council	DIAND- registered Indians on reserve and crown land- 2004 ²	City Centre ³	Service Centre ⁴	Geo- graphic Zone ⁵	Environ- mental Index ⁶
Bearskin Lake	Windigo First Nations Council	499	Thompson	Sioux Lookout	4	C5
Cat Lake	Windigo First Nations Council	481	Thompson	Sioux Lookout	4	C2
Deer Lake	Keewaytinook Okimakanak	838	Thompson	Sioux Lookout	4	C4
Eabametoong A/N: Fort Hope	Matawa First Nation Management Inc.	1159	Thompson	Geraldton	4	C2
Fort Severn	Keewaytinook Okimakanak	477	Thompson	Sioux Lookout	4	D6
Kasabonika Lake A/N: Kasabonika	Shibogama First Nations Council	737	Thompson	Sioux Lookout	4	C5
Kee-Way-Win A/N: Keewaywin	Keewaytinook Okimakanak	439	Thompson	Sioux Lookout	4	C4
Kingfisher	Shibogama First Nations Council	414	Thompson	Sioux Lookout	4	C4
Kitchenuhmaykoosib Inninuug A/N: Big Trout	Independent First Nations Alliance	889	Thompson	Sioux Lookout	4	C5
Lac Seul A/N: Kejick Bay, Frenchman's Head	?	824	Thunder Bay	Sioux Lookout	4	C1
Mishkeegogamang A/N: New Osnaburgh,	Independent Bands	959	Thunder Bay	Sioux Lookout	2	C
Muskrat Dam	Independent First Nations Alliance	197	Thompson	Sioux Lookout	4	C4
Neskantaga A/N: Lansdowne House	Matawa Tribal Council	277	Thompson	Geraldton	4	C3
Nibinamik A/N: Summer Beaver	Matawa Tribal Council	327	Thompson	Geraldton	4	C6
North Caribou A/N: Weagamow	Windigo First Nations Council	702	Thompson	Sioux Lookout	4	C4
North Spirit Lake	Keewaytinook Okimakanak	398	Thompson	Sioux Lookout	4	C4
Pikangikum	Independent First Nations Alliance	1907	Thompson	Sioux Lookout	4	C3

Legal Entity (recognized by INAC) ¹	Tribal council	DIAND-registered Indians on reserve and crown land-2004 ²	City Centre ³	Service Centre ⁴	Geo-graphic Zone ⁵	Environmental Index ⁶
Poplar Hill	Keewaytinook Okimakanak	396	Thompson	Sioux Lookout	4	C3
Sachigo Lake	Windigo First Nations Council	459	Thompson	Sioux Lookout	4	C5
Sandy Lake	not affiliated with any Tribal Councils	1961	Thompson	Sioux Lookout	4	C4
Slate Falls A/N: New Slate Falls, Fry Lake	Windigo First Nations Council	153	Thunder Bay	Sioux Lookout	4	C1
Wapekeka A/N: Angling Lake	Shibogama First Nations Council	359	Thompson	Sioux Lookout	4	C5
Webequie	Matawa Tribal Council	622	Thompson	Geraldton	4	C4
Wunnumin	Shibogama First Nations Council	483	Thompson	Sioux Lookout	4	C4
<i>Summary N=24</i>	<i>Independent or unknown n=6 Keewaytinook Okimakanak n=5 Windigo n=5 Matawa n=4 Shibogama n=4</i>	<i>Total=15,957 Average=665 Median=482 Minimum=153 Maximum=1961 Standard deviation=463</i>	<i>Thompson n=21 Thunder Bay n=3</i>	<i>Sioux Lookout n=20 Geraldton n=4</i>	<i>Zone 4 n=23 Zone 2 n=1</i>	<i>C n=1 C1 n=2 C2 n=2 C3 n=3 C4 n=9 C5 n=6 D6 n=1</i>

¹ Legal Entity (recognized by INAC): INAC = Indian and Northern Affairs Canada. Source: First Nations and Inuit Health Branch-Health Canada and Chiefs of Ontario www.chiefs-of-ontario.org

² DIAND-registered Indians on reserve and crown land-2004: DIAND = Department of Indian and Northern Affairs (another name for INAC). Total number of Registered Indians on Reserve and on Crown Lands (includes band members and other band members). Source: DIAND 2005. Registered Indian Population by Sex and Residence 2004. First Nations and Northern Statistics Section, Corporate Information Management Directorate, Information Management Branch, Department of Indian Affairs and Northern Development, Ottawa. Available from: http://www.ainc-inac.gc.ca/pr/sts/rip/rip04_e.html

³ City Centre = Nearest major population centre. Source: INAC 2004 Band Classification Manual. Corporate Information Management Directorate, Information Management Branch, Indian and Northern Affairs Canada, Ottawa. Available from: http://www.ainc-inac.gc.ca/pr/pub/fnnrg/bcm_e.html

⁴ Service Centre = Nearest community to which a First Nation can access government services, banks and supplies. Source: INAC 2004.

⁵ Geographic Zone = Zone 2 – the First Nation is located between 50 and 350 km from nearest service centre with year-round road access. Zone 4 – the First nation has no year-round road access to a service centre. Source: INAC 2004.

⁶ Environmental Index = a combination of environmental classifications based on latitude and a remoteness index based on distance to service centre. Environmental Classification: C=50-55°N, D=55-60°N, Remoteness Classification 0-6 = increasing distance from service centre. Source: INAC 2004.

Table 2. Number of sessions per month by type of use of Keewaytinook Okimakanak Telehealth Network since September 2003 (source: KOTH)

Month-Year	Clinical Consults	Meetings	Education	Family Visits	Demos	Training	System Tests	Network TOTAL	Total in Communities
Sep-03	45	12	20	0	0	8	1	86	50
Oct-03	35	9	12	1	4	5	6	72	38
Nov-03	36	2	12	4	0	13	4	71	77
Dec-03	26	8	13	1	2	16	0	66	42
Jan-04	25	13	12	2	4	24	1	81	80
Feb-04	40	9	10	0	4	33	1	97	86
Mar-04	42	10	22	2	0	19	0	95	88
Apr-04	61	12	15	1	0	22	1	112	81
May-04	63	10	17	2	2	15	2	111	69
Jun-04	65	16	13	4	10	28	6	142	103
Jul-04	50	10	1	0	1	15	7	84	63
Aug-04	33	12	1	1	2	21	3	73	43
Sep-04	62	18	16	1	2	38	3	140	102
Oct-04	43	18	36	1	2	27	6	133	131
Nov-04	40	11	33	1	6	14	2	107	124
Dec-04	37	6	10	2	5	10	1	71	80
Jan-05	46	24	30	2	10	27	5	144	166
Feb-05	56	31	41	2	1	19	1	151	253
Mar-05	51	16	45	2	8	31	6	159	256
Apr-05	100	36	42	2	3	31	10	224	269
May-05	71	19	31	3	10	33	8	175	317
Jun-05	72	33	38	4	11	44	4	206	316
Jul-05	67	21	14	5	6	41	15	169	301
Aug-05	69	27	19	0	1	34	7	157	319
Total to date	1235	383	503	43	94	568	100	2926 ¹	3454 ²
Percent of total TH use	42.2%	13.1%	17.2%	1.5%	3.2%	19.4%	3.4%	100.0%	-
Mean	51.5	16.0	21.0	1.8	3.9	23.7	4.2	121.9	-
Median	48	12.5	16.5	2	2.5	23	3.5	111.5	-
Minimum	25	2	1	0	0	5	0	66	-
Maximum	100	36	45	5	11	44	15	224	-
Average Annual Use	618	192	252	22	47	284	50	1463	2911

¹ There were 527 cancellations that were not included in the totals. Cancellations represent about 18% of the network's 2926 telehealth sessions. The percentage of cancelled sessions varied from 11% to 31% on a month by month basis (mean=19%, median=18%).

² Total number of telehealth consultations in First Nations communities is higher than the network total because there were occasionally more than one First Nations community connected during a telehealth session, particularly for educational and administrative sessions.

Table 3. Patient's perspective on the helpfulness of the telehealth appointment

How many telehealth appointments have you completed?	How helpful did you find this telehealth appointment?					Total
	Very helpful	Somewhat helpful	Not too helpful	Not helpful at all	No opinion	
1 (this was my first appointment)	25 59.5%	13 31.0%	2 4.8%	0	2 4.8%	42 (58%) 100.0%
2-4	16 57.1%	10 35.7%	1 3.6%	0	1 3.6%	28 (38%) 100.0%
5 or more appointments	3 100%	0	0	0	0	3 (4%) 100.0%
Total	44 60.3%	23 31.5%	3 4.1%	0	3 4.1%	73 ¹ 100.0%

¹ 4 missing responses, 2 refusals not included in analysis

Table 4. Patient willingness to repeat telehealth appointment

How many telehealth appointments have you completed?	If you had to repeat this appointment, would you do it again by telehealth?		Total
	Yes	No	
1 (this was my first appointment)	40 97.6%	1 2.4%	41 (58%) 100.0%
2-4	25 92.6%	2 7.4%	27 (38%) 100.0%
5 or more appointments	3 100%	0	3 (4%) 100.0%
Total	68 95.8%	3 4.2%	71 ¹ 100.0%

¹ 6 missing responses, 2 refusals not included in analysis

Table 5. Patient's willingness to recommend telehealth to others

How many telehealth appointments have you completed?	Would you recommend telehealth to another person?			Total
	Yes	No	Don't Know	
1 (this was my first appointment)	37 90.2%	1 2.4%	3 7.3%	41 (58%) 100.0%
2-4	23 85.2%	3 11.1%	1 3.7%	27 (38%) 100.0%
5 or more appointments	3 100.0%	0	0	3 (4%) 100.0%
Total	63 88.7%	4 5.6%	4 5.6%	71 ¹ 100.0%

¹ 6 missing responses, 2 refusals not included in analysis

Table 6: Assumptions of the Economic Model—Telehealth Network Costs for the Sustainable Program

Cost Item	Total Cost
Equipment Costs (Capital)	
Telehealth platforms, Peripherals and medical devices, Computers, monitors, etc., Cables, Software (<i>replacements only</i>)	
Installation of land line or microwave towers and associated costs	
Satellite earth stations and associated costs	
Shipping & handling, Installation	
Construction/ renovation, Office furnishings, Other equipment	
Warranty/ maintenance/ insurance	
Total over 3 years	\$718,080
Subtotal-Capital Equipment Costs-Annualized	\$239,408
Equipment Costs (Annual)	
Access and line charges (hook-up included above with installation)	
Building operations, Room rental, Overhead	
Subtotal-Equipment costs (Annual)	\$483,600
Other Costs (Annual)	
Promotion/ marketing	
Training/ education	
Project travel, Project management	
Subtotal-Other costs (Annual)	\$136,917
Personnel Costs (Annual)	
Subtotal-Personnel costs (Annual)	\$1,954,000
Grand Total Annual Telehealth Network Costs	\$2,813,925

Data Source: KOTH sustainability budget-July 2005

Table 7: Assumptions of the Economic Model—Telehealth Utilization and Averted Travel

Telehealth & Averted travel- Model Assumptions	Clinical	Educational	Training	Adminis- trative	Other	Grand Total
Total number of telehealth sessions- Projected Utilization	2030	827	933	630	390	4810
Percent of telehealth sessions that averted travel	60%	10%	1%	5%	1%	
Averted number of trips (rounded to nearest integer)	1218	83	9	32	4	1346
Average number of people / trip	1.75	4	1.5	4	2	
Valuation Factor (% of travel cost assumed to be savings)	100%	100%	5%	100%	1%	
Number of "new" telehealth sessions	812	744	924	598	386	3464
Valuation Factor (% of travel cost assumed to be savings) – "new" telehealth	50%	30%	5%	5%	1%	

Table 8: Assumptions of the Economic Model—Estimated Savings for Averted Travel and Value of "New" Telehealth

Cost Item	Unit cost	Clinical	Educational	Training	Adminis- trative	Other	
Transportation Costs							
air fare (return-patient or 1st person)	\$430	<i>0.98</i> ¹	\$421	1	\$258	1	\$258
air fare (medevac)	\$5,000	<i>0.02</i>	\$100				
air fare (patient goes home after medevac)	\$258	<i>0.02</i>	\$5				
air fare (return-escort or other people)	\$430	<i>0.75</i>	\$323	3	\$774	<i>0.5</i>	\$129
				3	\$774	1	\$258
Transportation sub-total			\$849		\$1,032		\$387
Daily Costs							
accommodation-patient-SL hospital	\$799	<i>0.98</i>	\$783				
accommodation-patient-SL hospice	\$90	<i>0.02</i>	\$2				
accommodation-escort or others-SL hotel	\$90	<i>0.75</i>	\$68	4	\$360	<i>1.5</i>	\$135
				4	\$360	2	\$180
food and misc.	\$50	<i>1.75</i>	\$88	4	\$200	<i>1.5</i>	\$75
				4	\$200	2	\$100
Total cost for each day			\$940		\$560		\$210
Number of Days per trip			2.5		2.5		1.5
Daily Costs sub-total			\$2,350		\$1,400		\$315
Other Costs / Trip			\$1		\$1		\$1
Total average cost / trip			\$3,200		\$2,433		\$703
							\$1,873
							\$797
							Grand Total
Total annual savings-BUILT-UP			\$3,897,673		\$201,939		\$316
"New" telehealth travel savings			\$1,299,224		\$543,046		\$32,479
Total annual savings-BUILT-UP-with "New" telehealth travel savings			\$5,196,897		\$744,985		\$32,795
							\$59,936
							\$32
							\$3,076
							\$3,108
							\$4,159,896
							\$1,933,828
							\$6,093,724

¹ Values in italics are the estimated number of people/trip. Fractional estimate indicates that 98% of all patients were schedevaced and 2% were medevaced (assumptions).

