APPENDIX: Online Supplement
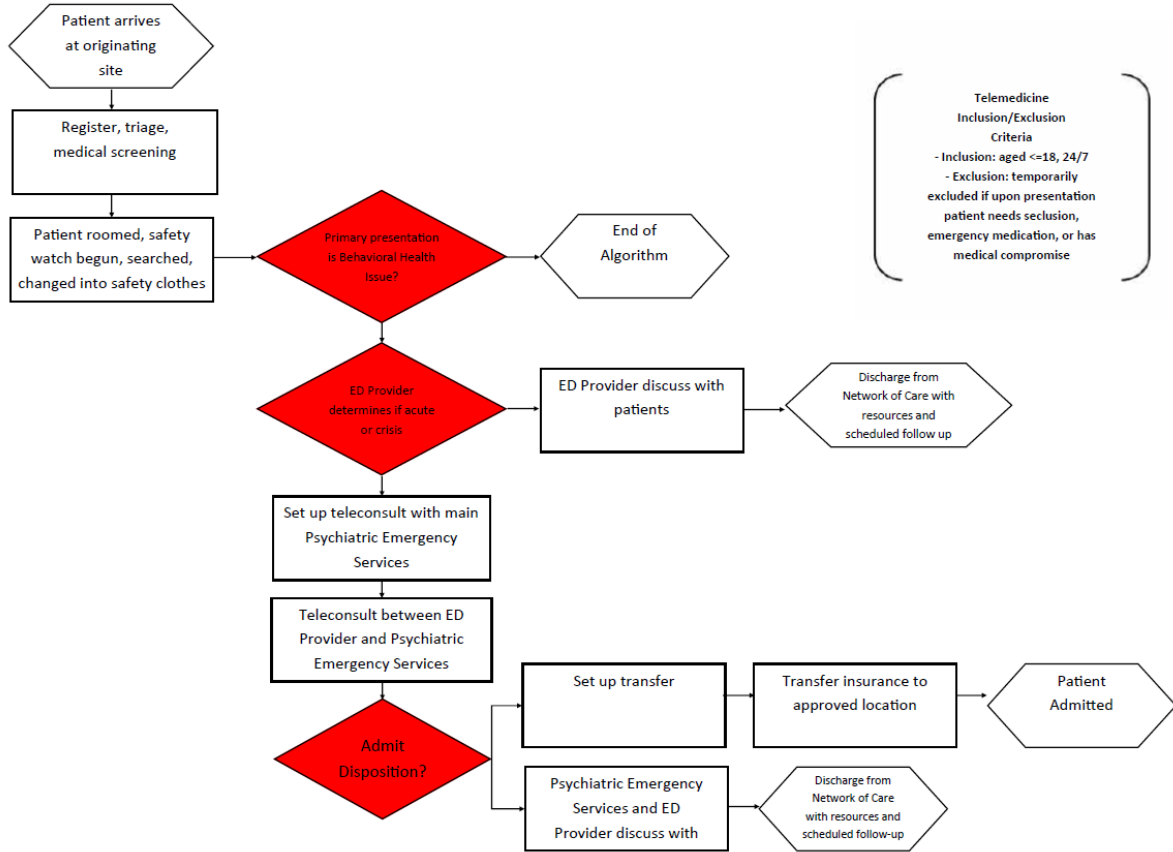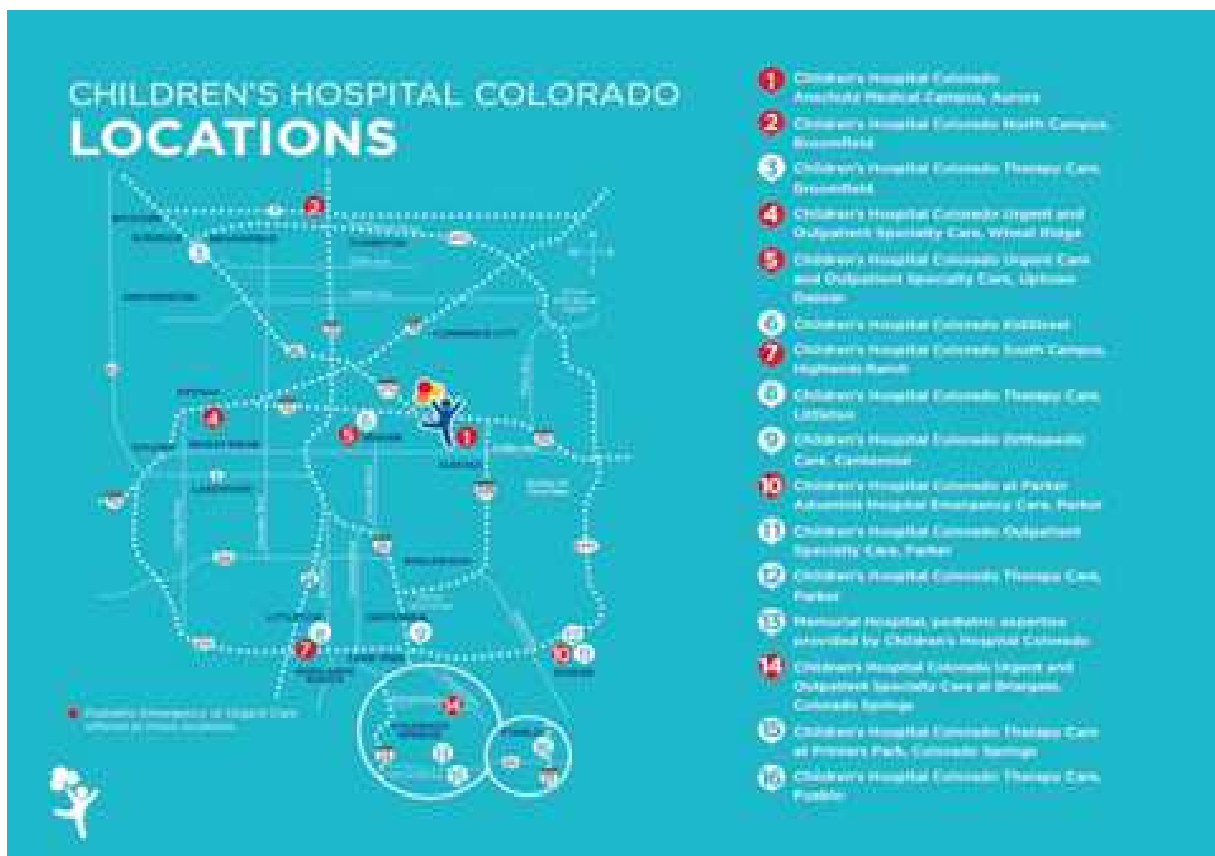
Figure. Network of Care Telemedicine Flow for Psychiatry Emergency Consultation

Children's Hospital Colorado (CHCO) Network of Care Locations and Estimated Travel Time to Main and Logistic Regression Models for Inpatient Admission and Return to ED within 72 hours.

Network of care site	Distance to CHCO Main Hospital (miles)	Estimated driving time on Google Maps (minutes)
1 Children's Hospital South Campus	23	34
2 Children's Hospital North Campus	33	36
3 Children's Hospital at Parker Adventist Hospital	21	32
4 Children's Hospital Uptown Denver	7.9	22
5 Children's Hospital Wheatridge	19	35
Total Average	**20.8**	**31.8 minutes**

Because the rates of inpatient admission was higher for the telepsychiatry arm compared to the treatment as usual arm, we adjusted for observable characteristics using a stepwise process. After adjusting for observables, there was a still a significant (p<.001) decrease in the odds of being admitted in the telepsychiatry arm. This Odds ratio corresponds to a **.76** relative risk ratio for telepsychiatry compared to treatment as usual (transport to main hospital for in person consultation).

Logistic regression multiple variable model: Likelihood of Inpatient Admission
Sample Size N=494
 # events (inpatient stay): 242
C-index: .66
Hosmer Lemeshow Test: 10.2 (p=.25)

Step	Variable	OR	P-value
1	Age Group (>=13 vs < 13)	2.34 (1.55-3.53)	<.001
2	Telepsychiatry video consultation	.59 (.40-.86)	.005
3	Non-White vs. White	1.68 (1.07-2.64)	.024
4	Diagnosis (SIWP vs. Other)	1.75 (.94-3.23)	.189
	Diagnosis (Self/Other Harm vs Other)	1.31 (.76-2.27)	
5	Female vs. Male	1.26 (.86-1.86)	.244
6	Private Insurance vs No	.97 (.67-1.42)	.888

To further check for selection bias (and to explore the shift away from inpatient admission associated with telepsychiatry), another logistic model for telepsychiatry was run with little effect from patient characteristics.

Likelihood of Telepsychiatry Video Consultation Usage
Sample Size N=494
 # events (telehealth usage): 226
C-index: .60
Hosmer Lemeshow Test: 5.14 (p=.64)

Step	Variable	OR	P-value
1	Private Insurance vs No	1.55 (1.07-2.25)	.020
2	Non-White vs. White	.66 (.42-1.02)	.064
3	Diagnosis (SIWP vs. Other)	1.17 (.65-2.12)	.182
	Diagnosis (Self/Other Harm vs Other)	.79 (.47-1.34)	
4	Age Group (>=13 vs < 13)	.82 (.55-1.22)	.332
5	Female vs. Male	.83 (.57-1.21)	.335

In regard to possible effects on safety of telepsychiatry, we coded charts for ED readmission within 72 hours.

	With Telehealth	Without Telehealth
No return visit	198 (85.3%)	242 (90.3%)
Return < 72 hours	0 (.0%)	1 (.4%)