Yale NewHaven Health

CT BHP Oversight Council

Adult Quality, Access and Policy Committee

January 12, 2021

Brief Overview of Yale New Haven Health's Experience with Telepsychiatry during the COVID-19 Pandemic: Patient Experience, "Show" Rates, and Measurement-Based Care

Agenda

- Objective of Presentation
- Brief Overview of Yale New Haven Health and Yale New Haven Hospital Psychiatry and Behavioral Health Services
  - Team at YNHH
- The Rapid Deployment of Telehealth Services and the Need to Study its Effectiveness, Patient Experience, and Cost
  - Attendance
  - Patient Experience
  - Outcomes (Effectiveness Relative to *In-Person)*

Objective of Presentation

- Telehealth has become a critical modality for the provision of behavioral health services during the COVID-19 response. There is a risk that third party payers and/or governmental regulatory agencies may seek to limit the ongoing use of this modality by rescinding relaxed restrictions and/or reducing compensation for services to providers and/or facilities.

- Telehealth services in psychiatry have been subject to numerous local and national regulations and reimbursement restrictions. These regulations and restrictions have historically limited the provision of behavioral health services through telehealth.

- To continue Telehealth services to for behavioral health beyond the pandemic, data will be needed to demonstrate its
  - Effectiveness
    - Fiscal
    - Outcomes
  - Patient (Consumer)Experience

- Overview of Process at YNHH as an example

Yale New Haven Health System Delivery Networks

Yale New Haven Hospital

Bridgeport Hospital

Greenwich Hospital

Yale NewHaven Health

Lawrence + Memorial Hospital

Northeast Medical Group

Westerly Hospital

Yale New Haven Psychiatry and Behavioral Health At-A-Glance – FY 2020

Inpatient Beds*

- 135 Beds (118 Adolescent / Adult; 16 Child)
- 3,100 Discharges (Adult)
- 400 Discharges (Child)

Ambulatory

- 27,200 Visits per year
- 7 Unique tracks

Psychiatric Emergency Services

- 9,000 Evaluations / year (179 pediatric)

Psychological Medicine

- 1,200 initial inpatient consults, 2,637 subsequent consults (FY 2020)
- 4,200 outpatient consults
- Embedded in 8 Specialty Clinics

Interventional Psychiatric Services

- 4,702 total treatments (ECT, KIT, TMS)

*Note: Winchester 1 (W1), part of YNHCH, has 17 beds which are not included in the 118 YNHPH beds.

Yale New Haven Health: Telehealth / Telepsychiatry Team

- David Klemanski, Ph.D.
- Amber Childs, Ph.D.
- Sandy Bacon, DNP, RN
- Carol Cestaro, LCSW
- Katie Klingensmith, MD
- Joshua Hrabosky, Ph.D.

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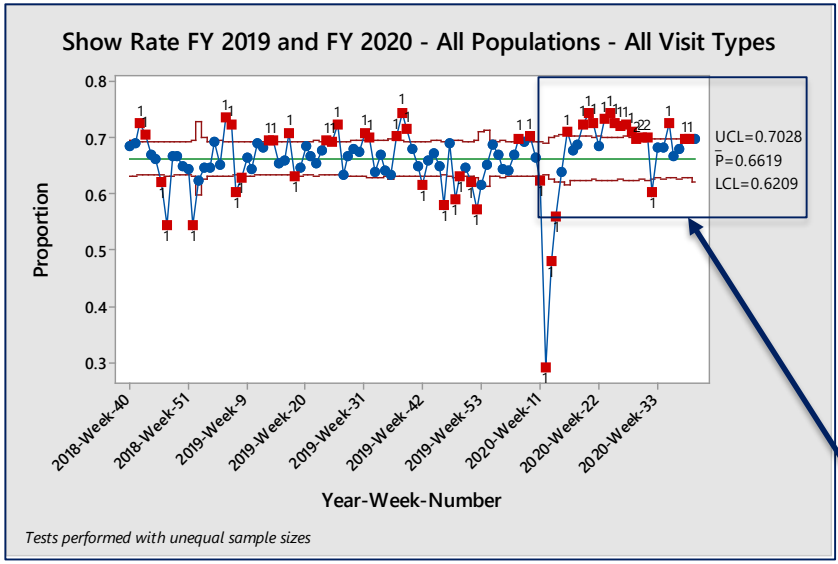
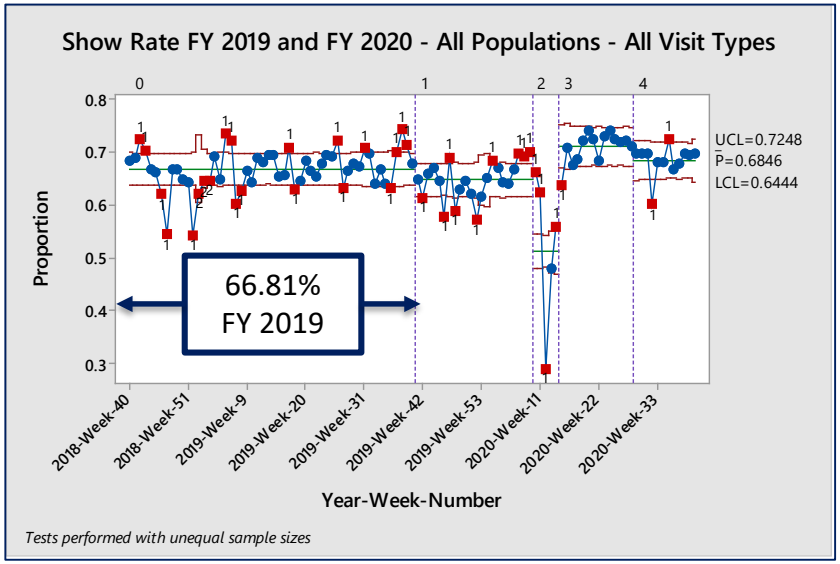
Attendance

- In general, the introduction of telehealth in response to COVID-19 was associated with improved attendance for scheduled appointments in the YNHPH ambulatory PBeH programs.
- Association does not infer causality. COVID-19 introduced many confounding variables. For example, some programs limited new referrals to internal referral sources and the census dropped in many ambulatory programs.
- Stratification of the data yields statistically significant associations that are diluted when the data is not stratified.
- Automation of reports with standardized filters will assist clinical redesign efforts by providing real time data for decision support.
- Ongoing monitoring is necessary to determine the long term influence of telehealth services, hybrid models, and patient factors impacting attendance.

P-Chart for FY 2019 and FY 2020 (2 Full Years)

2 Years - All Programs – All Services – All Populations

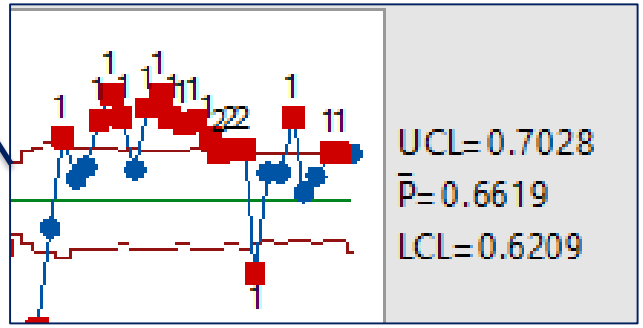




All PBeH Ambulatory Populations – All Services – Over Time

There was a "shift" in the process that was not sustained after the introduction of telehealth. This statistically significant improvement is defined as 9 or more consecutive points on one side of the mean. This data covers both FY 2019 and FY 2020 for all 5 locations (all 3 populations) and all services.

Some populations, programs, and visit types were impacted more than others in terms of the show rate improvements associated with telehealth and may be "diluted" with the inclusion of all services without stratification / segmentation.



66.81% **FY 2019**	64.76% Stage 1	51.21% Stage 2	**71.10% Stage 3**	68.46% Stage 4

*Note: Association does not infer causality. COVID-19 introduced many confounding variables

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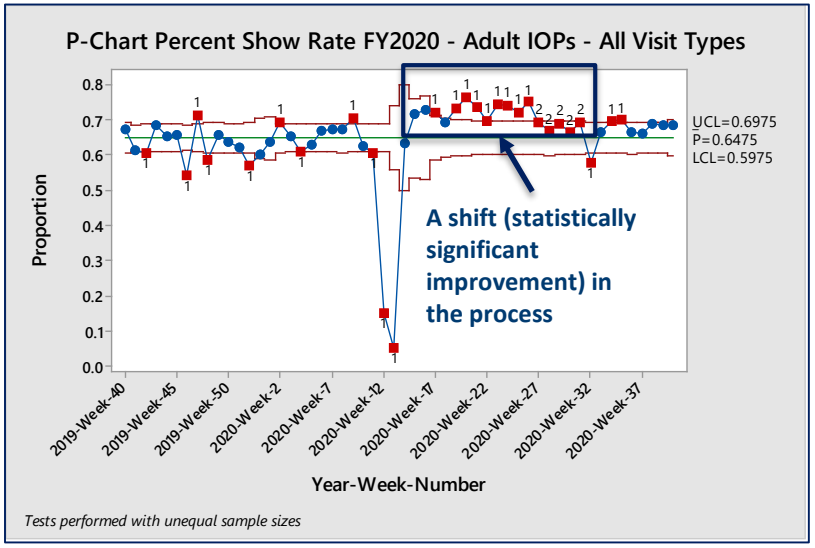
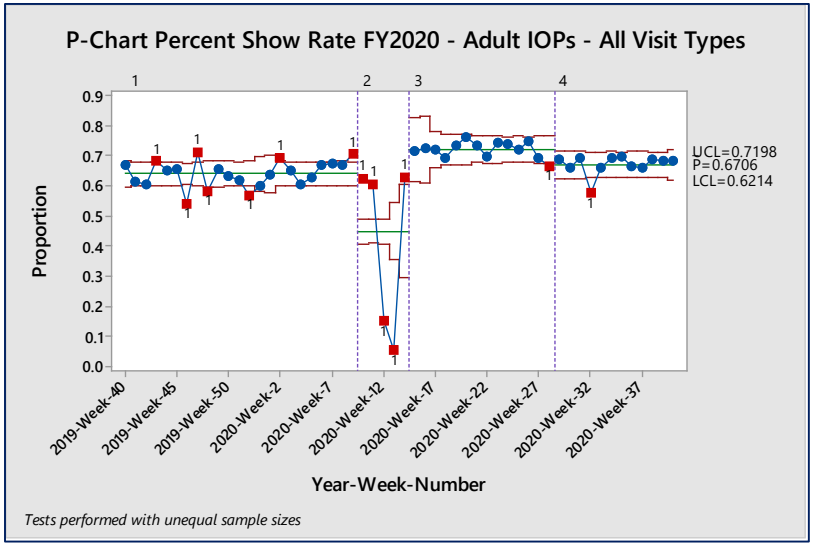
P-Chart Summary FY 2020
Adult IOP Population (10/1/19 – 9/30/20)





Adult IOP Only Population Over Time

There is a statistically significant improved show rate associated with introduction of telehealth but not sustained through year end*

The **P-Chart** depicts the percent (numerator/denominator) of the show volume per total scheduled appointments for each week for FY 2020 (October 1, 2019 to September 30, 2020).

The percent show rate for scheduled appointments for the Adult IOP Patient Population was 64.75% for FY 2020 as a whole. There was a statistically significant **shift** in the process with the introduction of telehealth services in response to COVID-19. A shift is defined as 9 or more consecutive points on one side of the mean and annotated by the #2.

The shift was not sustained through the end of the year for the adult IOP population for all visit types. However, phase 4 (hybrid of in-person and telehealth) is a more stable process compared to the baseline.

Phase 1 Baseline	Phase 2 COVID Response	Phase 3 Telehealth Introduced	Phase 4 Hybrid
64.06%	44.87%	72.12%	67.06%

*Note: Association does not infer causality. COVID-19 introduced many confounding variables

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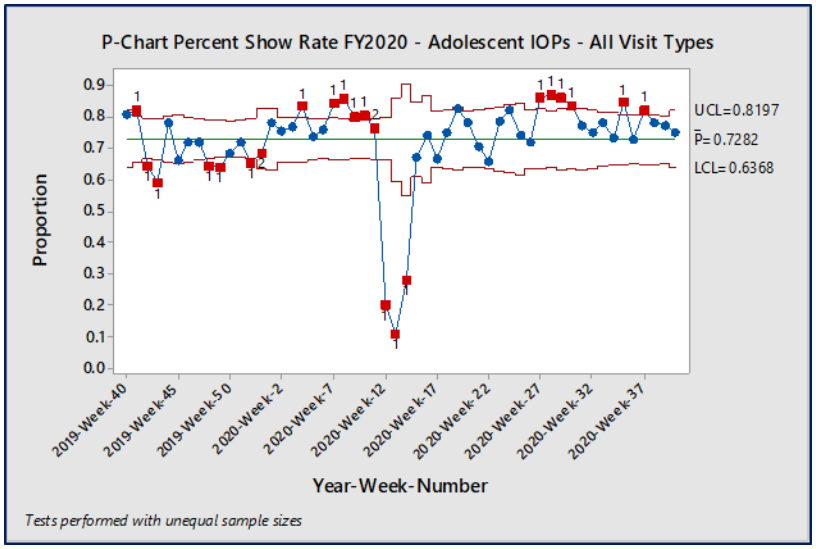
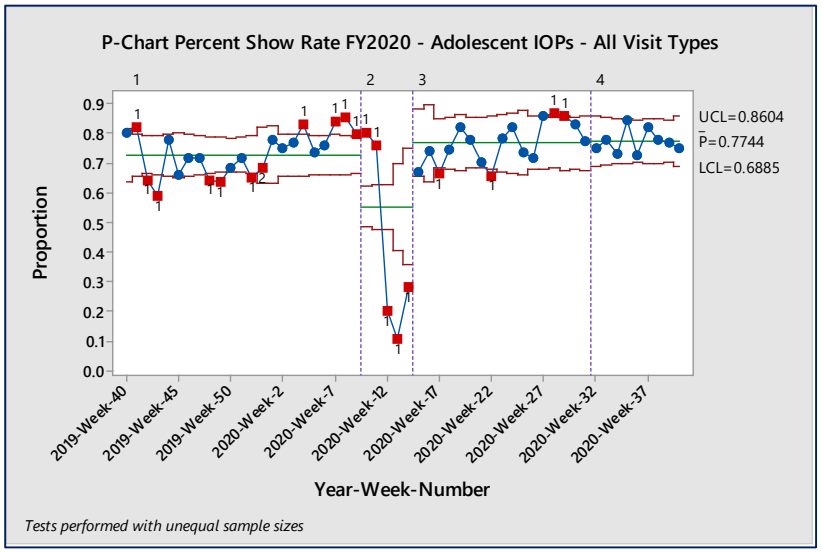
P-Chart Summary FY 2020
Adolescent IOP Population (10/1/19 – 9/30/20)





Adolescent IOP Population Over Time

Unstable process

The percent show rate for scheduled appointments for the Adolescent patient population was 72.82% (FY 2020). The process is unstable. Unlike the Adult population, there was no shift in the process associated with the introduction of telehealth. However, there was considerable special cause variation indicated by the six data points three standard deviations above the mean.

One may conclude that telehealth show rates are NOT worse for the adolescents and the introduction telehealth as an alternative to in person visits is favorable from an attendance perspective.

Phase 1 Baseline	Phase 2 COVID Response	Phase 3 Telehealth Introduced	Phase 4 Hybrid
72.86%	55.39%	76.88%	77.44%

*Note: Association does not infer causality. COVID-19 introduced many confounding variables

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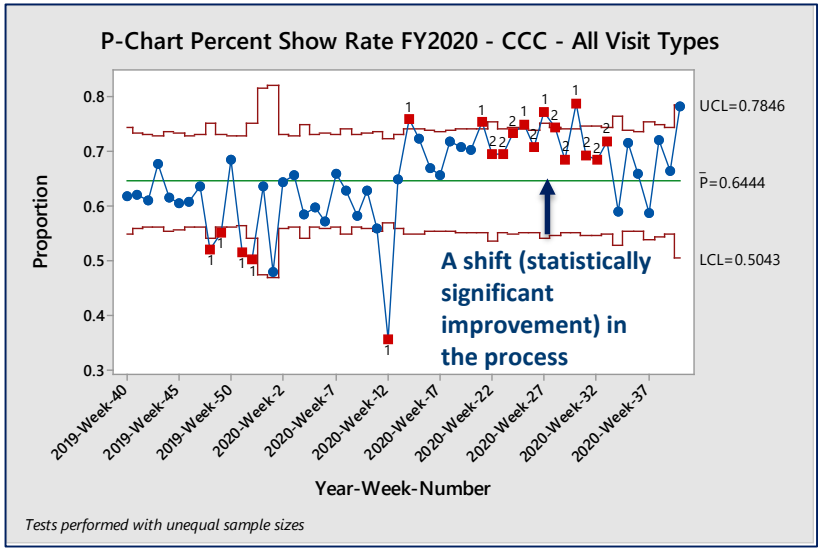
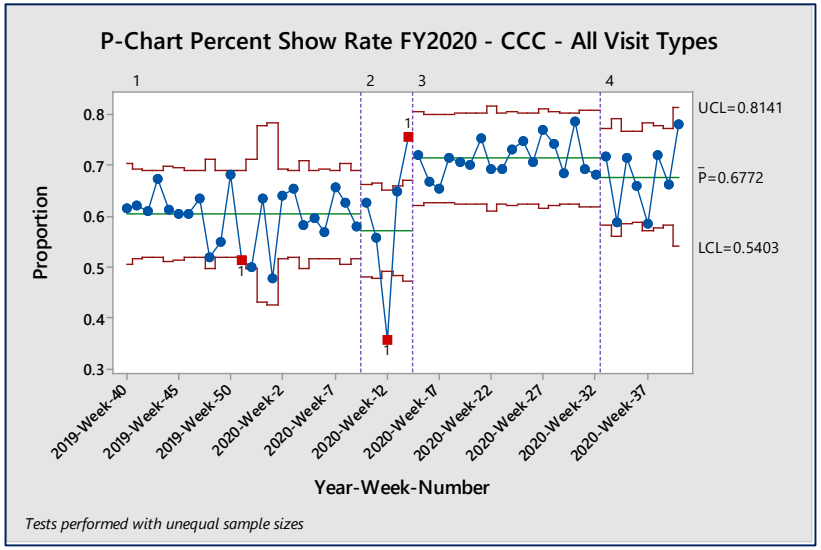
P-Chart Summary FY 2020
CCC Population – (10/1/19 – 9/30/20)





CCC Population Over Time

Statistically significant improved show rate associated with introduction of telehealth.

The percent show rate for scheduled appointments for the CCC patient population was 64.44% for FY 2020. There was a shift in the process defined as 9 or more consecutive points on one side of the mean.

As with the other patient populations, stratification of the data may yield statistically significant associations that are diluted when the data is not stratified.

For example, not all telehealth visits are the same in the CCC population; telephone visits were associated with an improved attendance rate compared to video visits or in person visits. Refer to next slide.

Phase 1 Baseline	Phase 2 COVID Response	Phase 3 Telehealth Introduced	Phase 4 Hybrid
60.46%	57.14%	71.36%	67.72%

*Note: Association does not infer causality. COVID-19 introduced many confounding variables

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Chi Square Analysis FY 2020 (In Person v. Phone v. Video)
CCC Population – (10/1/19 – 9/30/20)

Results for: CCC FY20 In Person v. Phone

Chi-Square Test for Association: Presence, Completion

Rows: Presence Columns: Completion

	Completed	Not Completed	All
In Person	3930	2751	6681
	4341	2340	
Telephone	3175	1080	4255
	2764	1491	
All	7105	3831	10936

Cell Contents: Count
Expected count

Pearson Chi-Square = 284.930, DF = 1, P-Value = 0.000
Likelihood Ratio Chi-Square = 291.630, DF = 1, P-Value = 0.000

Presence	Completed	Not Completed	Total	%
In Person	3930	2751	6681	58.82
Telephone	3175	1080	4255	74.62

Results for: CCC FY20 Phone v. Video

Chi-Square Test for Association: Presence, Completion

Rows: Presence Columns: Completion

	Completed	Not Completed	All
Telephone	3175	1080	4255
	3011	1244	
Video	1026	655	1681
	1190	491	
All	4201	1735	5936

Cell Contents: Count
Expected count

Pearson Chi-Square = 107.473, DF = 1, P-Value = 0.000
Likelihood Ratio Chi-Square = 104.228, DF = 1, P-Value = 0.000

Presence	Completed	Not Completed	Total	%
Telephone	3175	1080	4255	74.62
Video	1026	655	1681	61.04

Results for: CCC FY20 In Person v. Video

Chi-Square Test for Association: Presence, Completion

Rows: Presence Columns: Completion

	Completed	Not Completed	All
In Person	3930	2751	6681
	3959.7	2721.3	
Video	1026	655	1681
	996.3	684.7	
All	4956	3406	8362

Cell Contents: Count
Expected count

Pearson Chi-Square = 2.721, DF = 1, P-Value = 0.099
Likelihood Ratio Chi-Square = 2.731, DF = 1, P-Value = 0.098

Presence	Completed	Not Completed	Total	%
In Person	3930	2751	6681	58.82
Video	1026	655	1681	61.04

CCC Population Chi Square Analysis

- There is a 12.84% improvement in show rate associated with telehealth in the CCC population associated with all visit types. This difference was statistically significant.
- Telephone (audio only) had a better attendance rate (74.62%) compared to in person visits (58.82%); this difference was statistically significant.
- Telephone (audio only) had a better attendance rate compared to video visits (61.04%); this difference was also statistically significant.
- There was no statistically significant difference in attendance rate between in person and video visits.
- These findings might suggest that there is a digital divide when it comes to technology and the CCC patient population.

*Note: Association does not infer causality. COVID-19 introduced many confounding variables

Published Articles

Psychiatry Research 293 (2020) 113425

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Short communication

Emergency conversion to telehealth in hospital-based psychiatric outpatient services: Strategy and early observations

Amber W. Childs[a,b,*,#], Katherine Klingensmith[a,b], Sandra M. Bacon[b], Luming Li[a,b,#]

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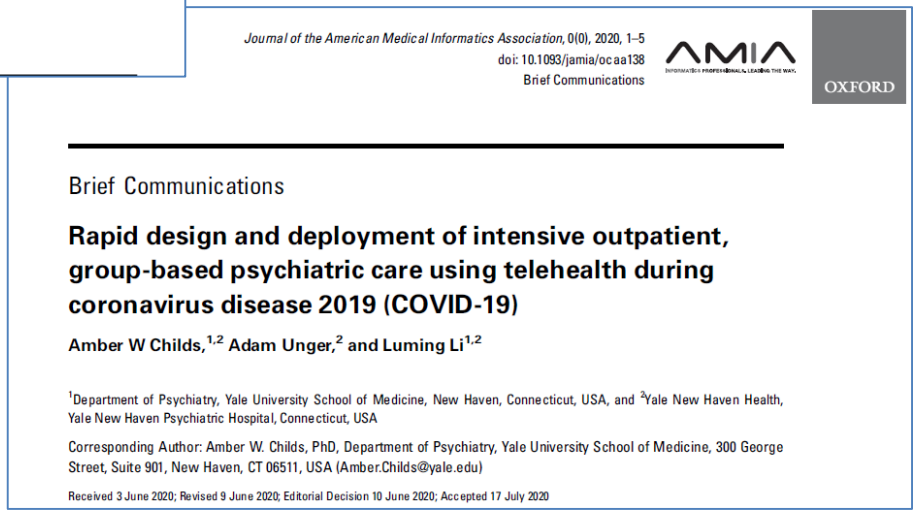

Journal of the American Medical Informatics Association, 0(0), 2020, 1–5
doi: 10.1093/jamia/ocaa138
Brief Communications

Brief Communications

Rapid design and deployment of intensive outpatient, group-based psychiatric care using telehealth during coronavirus disease 2019 (COVID-19)

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References

Childs, A. W., Klingensmith, K., Bacon, S. M., & Li, L. (2020). Emergency conversion to telehealth in hospital-based psychiatric outpatient services: Strategy and early observations. *Psychiatry Research,* , 113425.

Childs, A. W., Unger, A., & Li, L. (2020). Rapid design and deployment of intensive outpatient group-based psychiatric care using telehealth during COVID-19. *Journal of the American Medical Informatics Association.*

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Survey Overview

- Purpose: Gauge patient experience with telehealth services.
- 15 Item Questionnaire with Likert and rank choice scales, and open-ended responses.
- Administered online following telehealth groups or via telephone.

- Administered by SDN and level of service (*N*=219)
  - Yale New Haven Hospital (154)
    - Adult 135 (Outpatient 97 , IOP 38)
    - Adolescent 19 (Outpatient 5, IOP 14)
  - Greenwich Hospital (62)
    - Adult (Outpatient 36, IOP 26)
  - Lawrence + Memorial Hospital (3)
    - Adult (Outpatient 3, IOP 0)

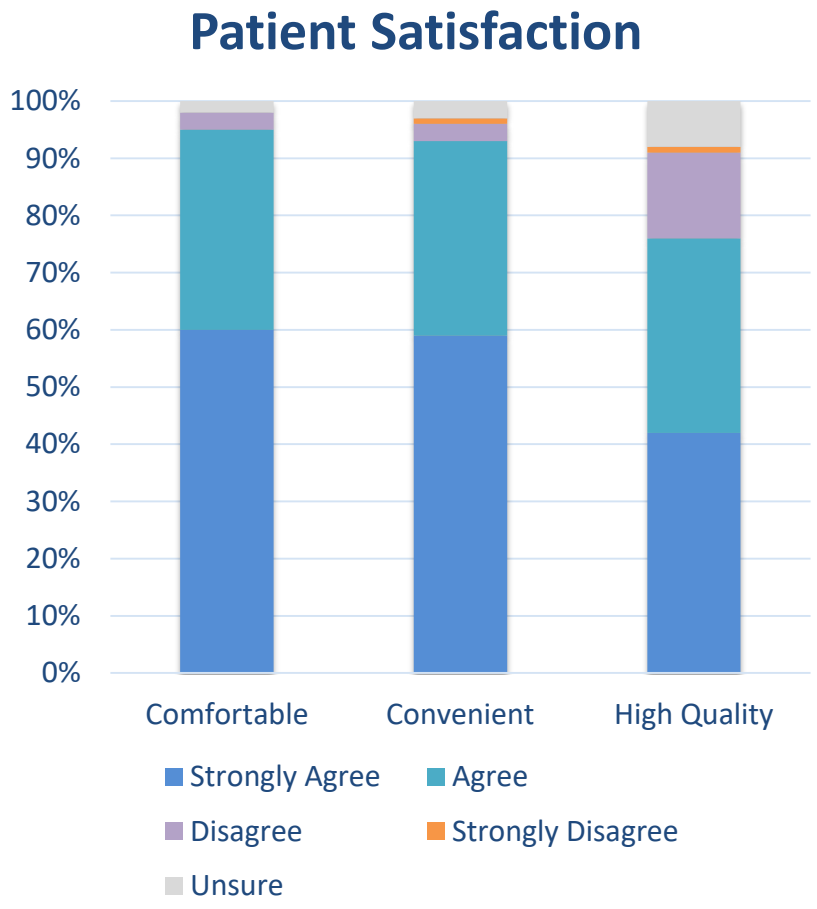
Analytic Plan & Insights

- Compare groups for significant differences by:
  - Delivery Network (YNHH, GH, LMH)
  - Program Type (OP, IOP)
  - Age (Adult versus Adolescent)
- No significant differences in outcomes between groups by delivery network or program type
- Minor significant differences by age group.

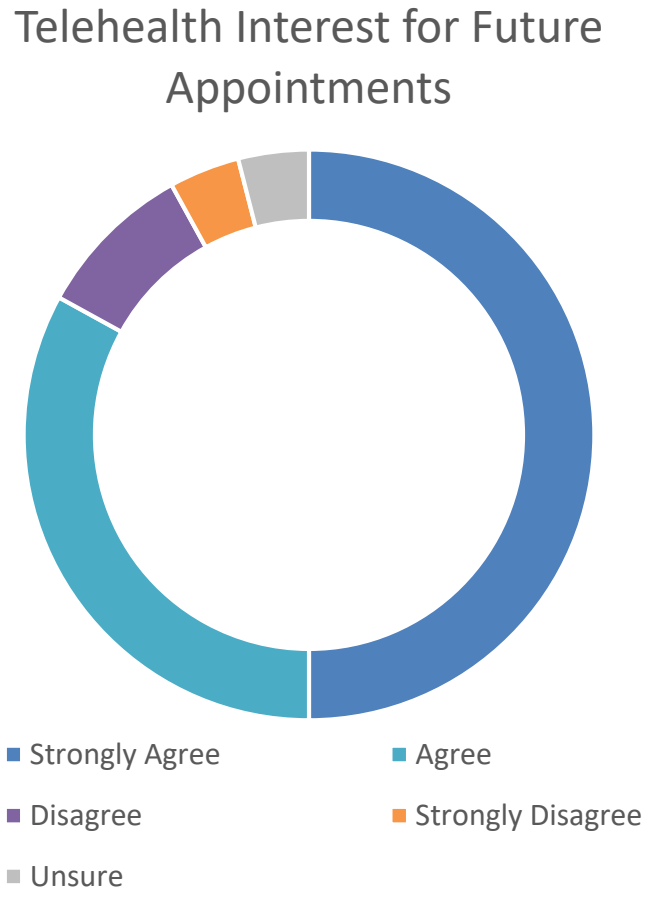
- Probit Regressions (Binary Logistic) to classify observations based on predicted probabilities.
  - * = Categorical **age** was a significant predictor of classifying convenience and quality of care.
  - ** = Total Telehealth Hours/Week was a significant predictor of classifying Future Interest in Telehealth

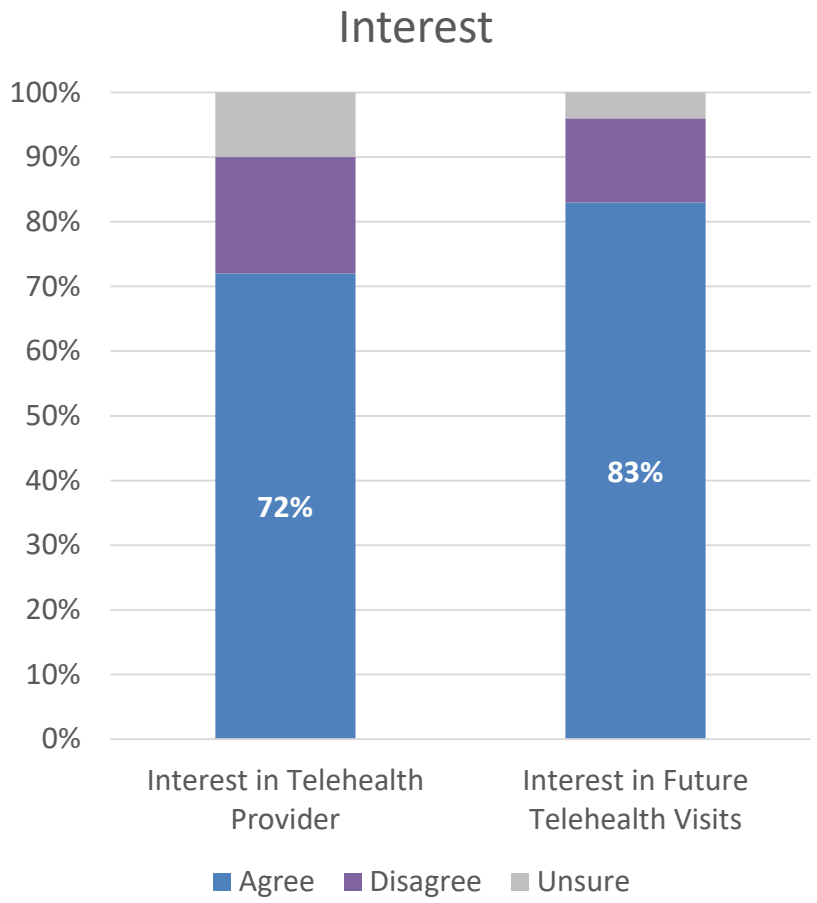
Patient Experience with Telepsychiatry across the system

- Purpose: Gauge patient experience with telehealth services.
- Surveyed patients across ambulatory psychiatry service delivery networks (*n* = 220).
- 15 item questionnaire with Likert and rank choice scales and open-ended responses.



Patient Experience with Telepsychiatry across the system





Patient Experience with Telepsychiatry across the system

Perceived benefits of Telehealth services:

- 86% of those surveyed preferred providers who offer a combination of telehealth and in-person visits ***with a greater preference for telehealth***.
- 82% of those surveyed reportedly **saved 1-3 hours** in their day by participating in telehealth appointments.
- 90% of those survey felt they had a personal connection with the provider.

What participants liked most about Telehealth services:

- I liked the ease of it and the comfort of being in my own home.
- Having no commute saved me a lot of time and anxiety.
- Being able to make connections without as much anxiety.
- Easy to book appointments and could be seen sooner.

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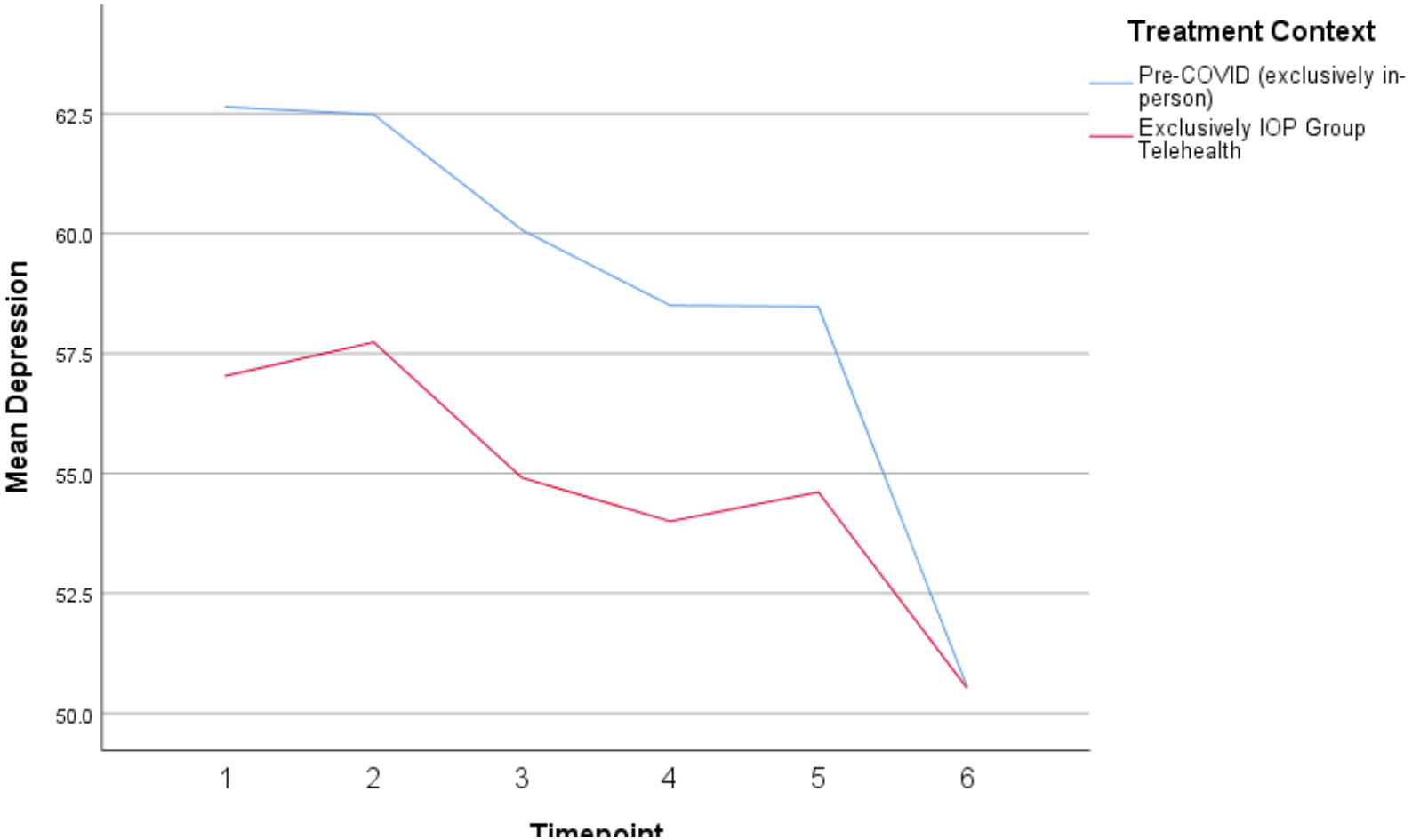
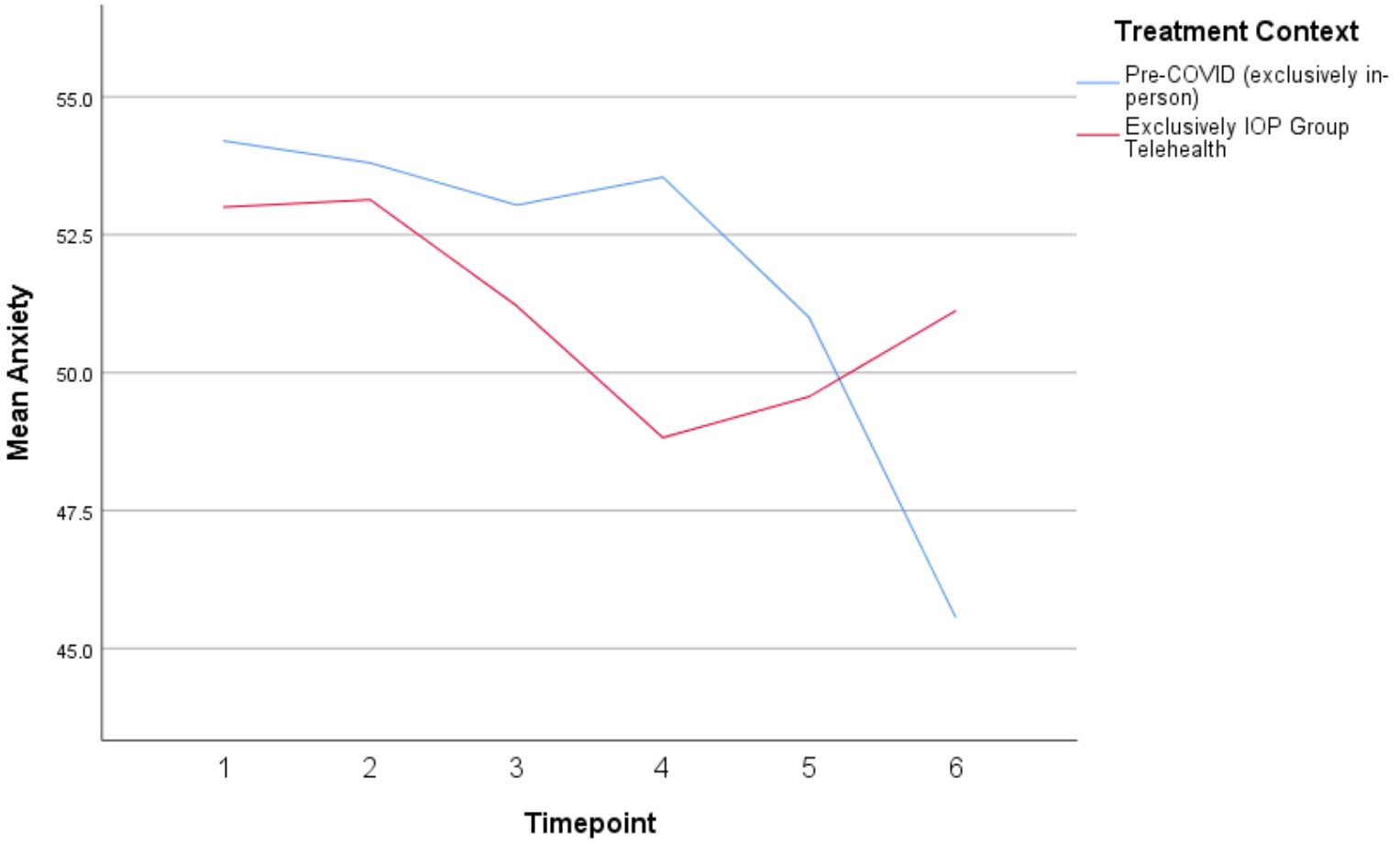
Measurement Based Care

- All Joint Commission Behavioral Health Programs must track outcomes at:
  - An individual level
  - At a programmatic level

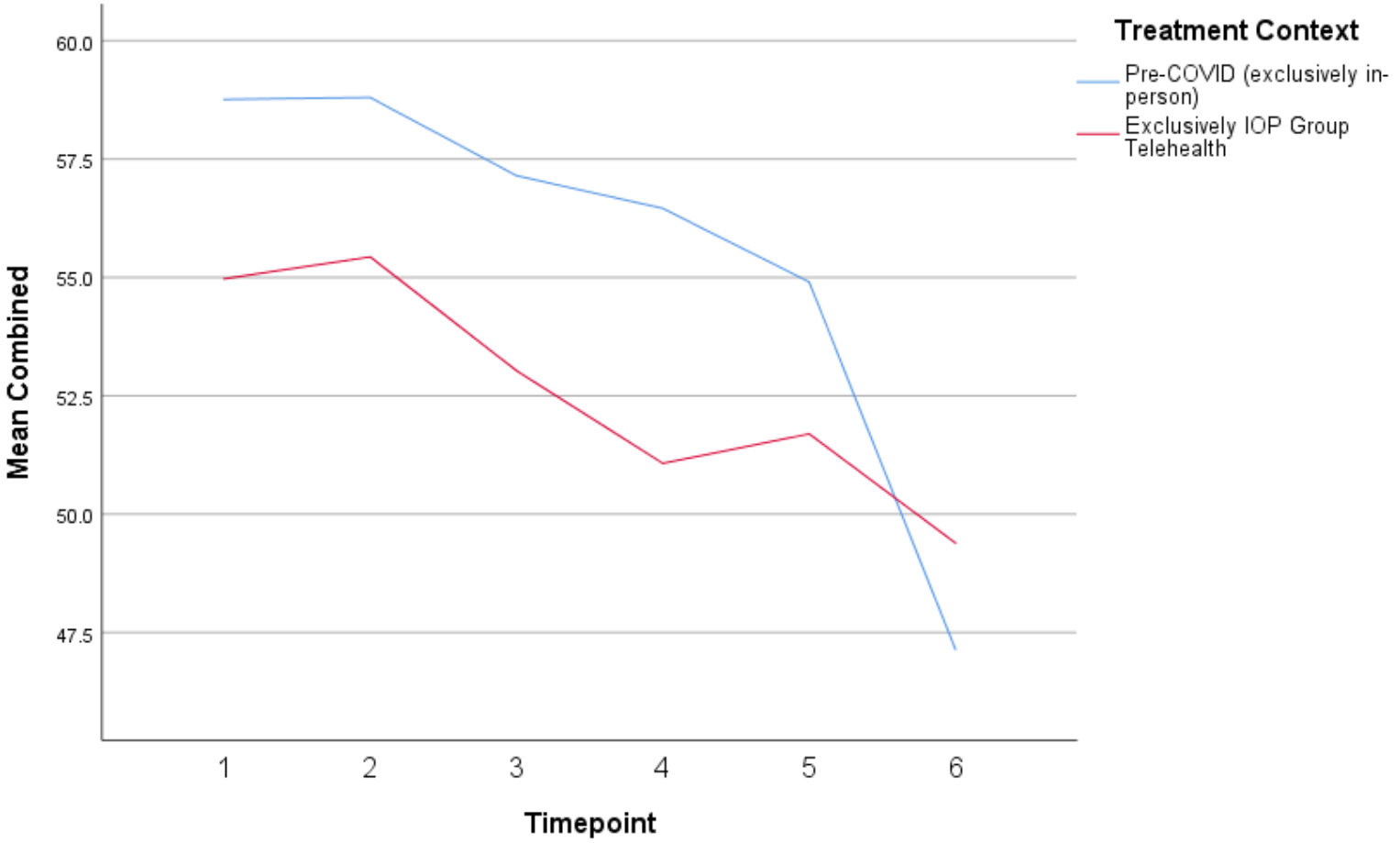
Depression



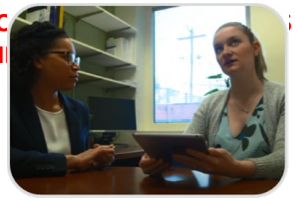
Anxiety



Combined Anxiety & Depression

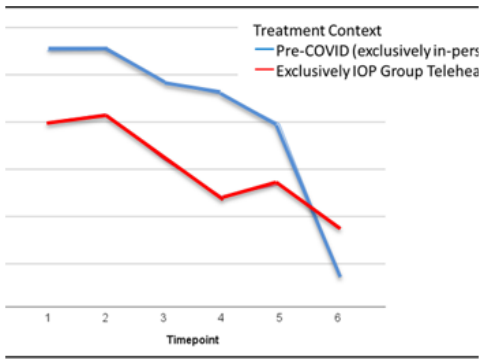


Data driven innovation: tele-psychiatry



Delivers data driven personalized treatments

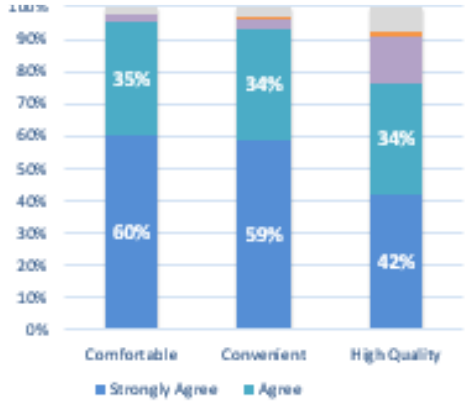
Measurement Based Outcomes



Depression & Anxiety

Adolescents experienced statistically significant decreases in symptoms of anxiety and depression over time with IOP treatment for **in-person** and **telehealth** visits.

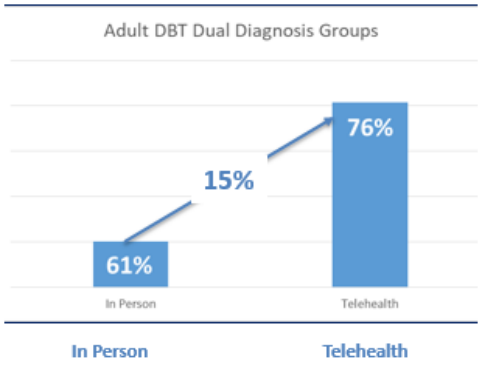
Patient Experience



The majority agreed or strongly agreed that telehealth was:

- Comfortable (95%)
- Convenient (93%)
- High Quality (76%)

Telehealth Attendance



- Telehealth attendance:
- 15%↑ - Adult DBT DD Groups
- 8% ↑ - Adult Mental Health Groups
- 8% ↑ - All Adolescent IOP visits.

Discussion

- Should CT BHPOC Adult QAP begin looking
  - Measurement based care?
  - Telehealth outcomes?
- How does our experience with Telehealth inform priorities for the CT BHPOC and the Adult QAP?
- Are there opportunities for sharing outcomes data?
- Are there good predictors of engagement / drop out?
- Other questions?